

Health Service Use of Australian Unemployment and Disability Benefit Recipients: A National, Cross-Sectional Study.

Alex Collie (✉ alex.collie@monash.edu)

Monash University <https://orcid.org/0000-0003-2617-9339>

Luke Sheehan

Monash University

Ashley McAllister

University of Melbourne

Research article

Keywords: Health service use, Social assistance, Disability, Unemployment, Hospitalisation, Health Professional Consultations

Posted Date: September 28th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-74164/v1>

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Version of Record: A version of this preprint was published on March 19th, 2021. See the published version at <https://doi.org/10.1186/s12913-021-06255-0>.

Abstract

Background: Healthcare is funded and delivered separately from social care programs such as unemployment and disability insurance. Greater understanding of the health service use (HSU) of social assistance benefit recipients would support more effective design and delivery of health and social care. This study aimed to characterise the HSU of disability and unemployment benefit recipients relative to people earning wages, and to identify personal, household and health-related factors associated with HSU in disability benefit recipients.

Methods: A cross-sectional national survey of 9,520 working age Australian adults in three groups: (1) 638 receiving the disability support pension (DSP); (2) 442 receiving unemployment benefits; and (3) 8440 earning wages. Outcomes included count and frequency of health professional consultations, hospital attendance and admission in the past 12 months, as well as medication and supplement use in the past 2 weeks. Analyses compared DSP and unemployment benefit recipients to wage earners using age and sex adjusted risk ratios and incident rate ratios. Negative binomial regression models were constructed to examine factors associated with hospitalisation and general practitioner services in DSP recipients.

Results: DSP recipients were significantly more likely than wage earners to have consulted 15 of 22 types of health professionals, had 2.5 times greater risk and 3.8 times higher rate of hospital admission, and 3.4 times greater risk of prescription medication use. Unemployment benefit recipients were significantly more likely than wage earners to have consulted 5 of 22 types of health professionals, had 1.5 times greater risk of hospital admission and 1.2 times greater risk of prescription medication use. Younger age, hypertension, more co-morbid conditions and poorer self-assessed health were associated with higher rate of hospital admission among DSP recipients.

Conclusions: People receiving unemployment and disability insurance benefits use significantly more health services than wage earners. A range of personal and clinical characteristics are associated with greater HSU among disability benefit recipients. Greater coordination between health and social care systems may improve health, reduce HSU and improve work ability in unemployed and working age people.

Background

In many nations, healthcare is delivered separately from social assistance programs such as unemployment and disability insurance benefits. This separation of function occurs despite substantial evidence that the two systems are inherently interconnected via the people they service. For example, unemployment and job loss is linked with poor health including higher mortality and morbidity [1, 2]. This study examines the health service use (HSU) of people receiving social assistance benefits.

Relationship between health status and social assistance

Evidence shows that health status and social assistance use are inextricably linked. For example, an Australian study reported the prevalence of mental health conditions was significantly higher among those receiving social assistance benefits compared with non-recipients [3], while the transition period from employment to social assistance benefit receipt was linked with a decline in mental health [4]. A recent panel study identified that people with disability had higher levels of depression and anxiety symptoms during periods in which they were receiving disability insurance benefits than when they were not, after accounting for time-varying changes in disability severity [5]. Studies from the UK and northern Europe showed that restricting access to disability insurance benefits contributed to growth in the number of people with significant health concerns enrolled in unemployment programs [6], and increased the burden of ill health in this population [6–8]. People with frequent attendance in primary healthcare settings are more likely to receive disability benefits in future than non-attenders or those with infrequent attendance [9]. Examining the relationship between healthcare and social assistance programs is more critical in a post COVID-19 world, given the dramatic rise in unemployment and corresponding increases in the number of social assistance recipients globally [10].

The Australian Context

In Australia, a growing portion of working age people receive social assistance benefits as an income source, in particular the Disability Support Pension (DSP) and the Newstart Allowance (NSA). The DSP provides financial support to people with permanent physical, intellectual or psychiatric impairments that prevent them from engaging in employment. The NSA provided financial support primarily to people who are unemployed. From March 2020, the NSA was rolled into a more broadly defined benefit titled the Job Seeker Payment. Approximately 750,000 Australians, or 4.5% of the working age population, receive the DSP [11], while a further 1.3 million receive the NSA, of whom over 300,000 have been assessed as having medical conditions limiting work capacity [12].

The Australian publicly funded healthcare system is largely disconnected from the nation's social assistance system. Despite the clear link between benefit receipt and health status, relatively little is known about the extent and patterns of HSU in working age social assistance benefit recipients. Poor health is a barrier to engagement in employment [13]. Effective health service delivery may support reductions in disability and improvements in work ability. An enhanced understanding of HSU among benefit recipients would therefore support the design and delivery of both health and social care.

Study Aims

This study aims to extend knowledge of the links between healthcare and social assistance systems by characterising the HSU of working age social benefit recipients. Specifically the study aims to (1) compare the health service use of DSP and NSA recipients to that of people earning wages or business income; and (2) identify personal, household and health-related factors associated with HSU in DSP recipients.

Methods

Study Design and Data Source

This cross-sectional study utilises data from the Australian National Health Survey (NHS). The NHS is an Australia-wide health survey conducted every three years by the Australian Bureau of Statistics. This study utilises data from the NHS collected between July 2014 and July 2015 [14]. Data was collected on 19,259 individuals from 14,723 private dwellings by computer assisted personal interview. In some instances, adult respondents were unable to answer for themselves due to significant long-term illness or disability. In these cases, a person responsible for them was interviewed on their behalf and where possible, the respondent was present during the interview. The NHS collects data about demographic, socio-economic and health characteristics including; physical measurements, long-term health conditions, risk factors, and health-related actions taken including use of health services. Data collection was spread randomly over a 12-month period to account for seasonal health effects. The household response rate was 82%.

Participants

As DSP and NSA payments are only available to persons of working age, the sample was first restricted to those aged 18 to 64 years. The NHS included questions on the income sources of respondents, including government assistance. This data was used to define three groups of respondents:

Group 1 – Disability Support Pension Recipients

Respondents who reported their primary income source being the DSP.

Group 2 – Newstart Allowance Recipients

Respondents who reported that they currently receive the NSA or the Sickness Allowance. The Sickness Allowance is another working age benefit provided under Australian social security system for people with temporary work incapacity of less than 12 months duration. The NSA and Sickness Allowance are discrete benefits that were not able to be differentiated in the NHS data. However as at December 2014 (the midpoint of the data collection period) there were 91 times more Australians receiving the NSA than there were receiving the Sickness Allowance [15]. This group is therefore highly likely to be comprised of mainly NSA recipients.

Group 3 – Wage Earners

Respondents indicating current income source as wages, business income or other cash income. Participants were excluded from this group if they received any government assistance, with the exception of the Family Tax Benefit, which is widely available to Australian families with children.

Outcomes

Three outcome categories were defined using the health service data recorded in the NHS. These were:

1. Health Professional Consultations in past 12 Months

This included (a) binary (yes/no) indicators of whether the respondent has consulted with a range of medical, allied and community health care practitioners in the past 12 months (list provided in Supplementary Material), and (b) the frequency of consultations with a General Practitioner (GP), dentist, or specialist medical practitioner in the past 12 months.

2. Hospital attendance or admission in past 12 months

This included (a) binary (yes/no) indicators of whether a participant had attended an emergency department or been admitted to hospital in the past 12 months, and (b) the frequency of emergency department attendance and hospital admissions in the past 12 months.

3. Medication and Supplement use in past 2 Weeks

This included (a) binary (yes/no) indicators of whether a participant had used any medications or any supplements in the past 2 weeks, by individual medication/supplement type and by Anatomical Therapeutic Chemical (ATC) classification category; and (b) the number of different types of medications and supplements reported as being used in the past 2 weeks.

Further details of data collection are provided in Supplementary Digital Material.

Data Analysis

Frequencies and percentages were used to describe the sample, as outcomes were categorical. Age and sex adjusted risk ratios (RRs) with 95% confidence intervals were calculated to compare the occurrence (yes/no) of outcomes in the DSP and NSA groups compared to the wage earners group. Age and sex adjusted incidence rate ratios (IRRs) with 95% confidence intervals were then calculated to compare the frequency of each outcome in the DSP and NSA groups compared to the wage earners group.

Secondary analysis sought to examine which demographic, household and health-related factors were associated with HSU in people receiving the DSP. Two negative binomial models were developed with the number of visits to a GP and the number of hospital admissions as the outcomes. Covariates that covered a range of demographic, household and health related factors were assessed for associations with the outcomes in an age and sex adjusted model using a p-value of 0.2. Variables that met this threshold were then combined in a model and retained if significant at $p \leq 0.05$.

Results

Overview of Participants

A total of 11,296 working age adults completed the NHS. Of these 638 met criteria for inclusion in the DSP recipient group, 442 to the NSA group and 8440 to the wage earners group. A further 1776 individuals of working age participated in the survey but did not fit the inclusion criteria of any group, and were excluded from analyses.

The DSP group was older than the other groups (Table 1). Females comprised 49%, 54%, and 57% of the wage earners, DSP and NSA groups, respectively. Differences in education and socioeconomic status were also observed. Less than one in five DSP and NSA recipients had private health insurance, compared to two thirds of the wage earners group. Thirty percent of DSP recipients reported severe core activity limitation and 44% mild/moderate limitation. Just under three quarters of wage earners reported no disability or long-term health condition. In the NSA group, 47% reported no disability or long-term health condition, 24% reported a mild/moderate core activity limitation and 4% severe limitation. Physical disability was the most common main disability type reported in all groups. In both DSP and NSA groups, psychological disability was the second most common main disability type, followed by 'other' disabilities and then disability in sight, hearing and speech.

Table 1
Characteristics of Study Groups

	Wage Earners (Column %)	DSP Group (Column %)	NSA Group (Column %)
Total Number	8440 (100%)	638 (100%)	442 (100%)
Age in Years			
18 to 24	765 (9.1%)	25 (3.9%)	34 (7.7%)
25 to 34	1945 (23.0%)	36 (5.6%)	70 (15.8%)
35 to 44	2117 (25.1%)	98 (15.4%)	107 (24.2%)
45 to 54	1957 (23.2%)	171 (26.8%)	113 (25.6%)
55 to 64	1656 (19.6%)	308 (48.3%)	118 (26.7%)
Sex			
Male	4310 (51.1%)	293 (45.9%)	188 (42.5%)
Female	4130 (48.9%)	345 (54.1%)	254 (57.5%)
Highest Level of Education			
Less than Year 12	1232 (14.8%)	331 (53.0%)	172 (39.9%)
Year 12	1125 (13.5%)	83 (13.3%)	48 (11.1%)
Certificate or Diploma	2902 (34.9%)	166 (26.6%)	160 (37.1%)
Bachelor Degree	1948 (23.4%)	37 (5.9%)	36 (8.4%)
Postgraduate Degree	1101 (13.3%)	8 (1.3%)	15 (3.5%)
Index of Relative Socio-economic Disadvantage			
Lowest socioeconomic half	3526 (41.8%)	506 (79.3%)	318 (71.9%)
Highest socioeconomic half	4914 (58.2%)	132 (20.7%)	124 (28.1%)
Disability Status			
No disability or long-term health condition	6174 (73.2%)	71 (11.1%)	208 (47.1%)
No limitation or specific restriction	1248 (14.8%)	18 (2.8%)	52 (11.8%)
Schooling/employment restriction only	296 (3.5%)	78 (12.2%)	58 (13.1%)

Note: All data is presented as Number (column percentage); DSP = Disability Support Pension; NSA = Newstart Allowance. Count data has been suppressed in cells with fewer than 5 cases (presented as < 5)

	Wage Earners (Column %)	DSP Group (Column %)	NSA Group (Column %)
Mild/moderate core activity limitation	613 (7.3%)	279 (43.7%)	106 (24.0%)
Severe/profound core activity limitation	109 (1.3%)	192 (30.1%)	18 (4.1%)
Main Disability Type			
Sight, hearing, speech	549 (6.5%)	31 (4.9%)	37 (8.4%)
Physical	1281 (15.2%)	299 (46.9%)	129 (29.2%)
Intellectual	53 (0.6%)	25 (3.9%)	5 (1.1%)
Psychological	141 (1.7%)	104 (16.3%)	36 (8.1%)
Head injury, stroke or brain damage	7 (0.1%)	24 (3.8%)	< 5
Other	235 (2.8%)	84 (13.2%)	27 (6.1%)
Not applicable	6174 (73.2%)	71 (11.1%)	208 (47.1%)
Private Health Insurance Status			
With private health insurance	5599 (66.5%)	104 (16.3%)	84 (19.1%)
Without private health insurance	2819 (33.5%)	534 (83.7%)	356 (80.9%)
Note: All data is presented as Number (column percentage); DSP = Disability Support Pension; NSA = Newstart Allowance. Count data has been suppressed in cells with fewer than 5 cases (presented as < 5)			

Health Professional Consultations

More than 80% of respondents in all groups consulted a GP at least once in the previous 12 months. The next most common healthcare practitioner groups were specialists and dentists (Table 2), noting that these three responses were prompted by the interviewer. Respondents in the DSP group were more likely to report consultations with all health professionals except for dentists, chiropractors, naturopaths, acupuncturists, and osteopaths. After adjustment for age and sex, DSP recipients were significantly more likely than wage earners to have consulted 15 of the 22 types of health professionals and significantly less likely to have consulted three (Fig. 1). NSA recipients were significantly more likely than wage earners to have consulted five types of health professionals and significantly less likely to have seen four types (Fig. 2). In both the DSP and NSA groups, the largest differences from wage earners were observed for consultations with a social worker or welfare officer.

Table 2
Prevalence of Health Professional Consultations, Hospital Attendance/Admission and Medication /Supplement Use by Study Group.

	Wage Earners Group	DSP Group	NSA Group
N Respondents	8440 (100.0%)	638 (100.0%)	442 (100.0%)
Health Professionals			
General Practitioner	7100 (84.2%)	611 (95.8%)	391 (88.5%)
Specialist	2746 (32.5%)	389 (61.0%)	171 (38.7%)
Dentist	4133 (49.0%)	232 (36.4%)	162 (36.7%)
Chemist (for advice only)	761 (9.0%)	151 (23.7%)	56 (12.7%)
Psychologist	420 (5.0%)	120 (18.8%)	55 (12.4%)
Other Health Professional	427 (5.1%)	87 (13.6%)	33 (7.5%)
Nurse	273 (3.2%)	83 (13.0%)	30 (6.8%)
Optician/Optomestrist/Orthoptist	566 (6.7%)	82 (12.9%)	19 (4.3%)
Physiotherapist/Hydrotherapist	848 (10.1%)	80 (12.5%)	26 (5.9%)
Dietitian/Nutritionist	181 (2.1%)	68 (10.7%)	14 (3.2%)
Radiographer	380 (4.5%)	66 (10.3%)	31 (7.0%)
Social Worker/Welfare Officer	49 (0.6%)	52 (8.2%)	20 (4.5%)
Podiatrist	245 (2.9%)	50 (7.8%)	9 (2.0%)
Diabetes Educator	81 (1.0%)	44 (6.9%)	7 (1.6%)
Counsellor	147 (1.7%)	42 (6.6%)	22 (5.0%)
Occupational Therapist	74 (0.9%)	26 (4.1%)	5 (1.1%)
Chiropractor	514 (6.1%)	20 (3.1%)	14 (3.2%)
Audiologist/Audiometrist	50 (0.6%)	15 (2.4%)	6 (1.4%)
Sonographer	110 (1.3%)	13 (2.0%)	6 (1.4%)
Naturopath	206 (2.4%)	12 (1.9%)	10 (2.3%)
Acupuncturist	190 (2.3%)	10 (1.6%)	5 (1.1%)

Note: Data represent the number (column percentage) participants in each group who consulted a health professional or health centre in the previous 12 months and the number (column percentage) who took a medication or supplement in the previous 2 weeks. DSP = Disability Support Pension; NSA = Newstart Allowance. Count data has been suppressed in cells with fewer than 5 cases (presented as < 5).

	Wage Earners Group	DSP Group	NSA Group
Osteopath	150 (1.8%)	6 (0.9%)	< 5
Hospital Admission / Attendance			
Hospital Admission	826 (9.8%)	164 (25.7%)	69 (15.6%)
Emergency Presentation	872 (10.3%)	148 (23.2%)	69 (15.6%)
Medications and Supplements			
Medications	3879 (46.0%)	551 (86.4%)	252 (57.0%)
Supplements	3592 (42.6%)	261 (40.9%)	159 (36.0%)
<p>Note: Data represent the number (column percentage) participants in each group who consulted a health professional or health centre in the previous 12 months and the number (column percentage) who took a medication or supplement in the previous 2 weeks. DSP = Disability Support Pension; NSA = Newstart Allowance. Count data has been suppressed in cells with fewer than 5 cases (presented as < 5).</p>			

The frequency of consultations with GPs and specialists were significantly different between groups (see Table 3). More than 40% of DSP recipients reported consulting a GP more than 10 times in the past 12 months, compared with less than 5% of wage earners and 19% of NSA recipients. Over 10% of DSP recipients visited a specialist more than 10 times, in comparison to 1.8% and 2.9% of the wage earners and NSA recipients, respectively. Age and sex adjusted IRRs demonstrated that these differences in frequency were significant, with both DSP and NSA groups reporting greater frequency than wage earners (Fig. 3). Dental consultations were significantly lower in NSA recipients but not significantly different between DSP recipients and wage earners.

Table 3

Frequency of Health Professional Consultations, Hospital Admission/Attendance and Medication / Supplement Use by Study Group.

	Wage Earners	DSP Group	NSA Group
General Practitioner			
0	1340 (15.9%)	27 (4.2%)	51 (11.5%)
1–5	5721 (67.8%)	205 (32.1%)	227 (51.4%)
6–10	971 (11.5%)	134 (21.0%)	82 (18.6%)
11+	408 (4.8%)	272 (42.6%)	82 (18.6%)
Dentist			
0	4307 (51.0%)	406 (63.6%)	280 (63.3%)
1–5	3954 (46.8%)	197 (30.9%)	150 (33.9%)
6+	179 (2.1%)	35 (5.5%)	12 (2.7%)
Specialist			
0	5694 (67.5%)	249 (39.0%)	271 (61.3%)
1–5	2319 (27.5%)	265 (41.5%)	139 (31.4%)
6–10	276 (3.3%)	55 (8.6%)	19 (4.3%)
11+	151 (1.8%)	69 (10.8%)	13 (2.9%)
Hospital Admission			
0	7614 (90.2%)	474 (74.3%)	373 (84.4%)
1	642 (7.6%)	98 (15.4%)	42 (9.5%)
2+	183 (2.2%)	65 (10.2%)	25 (5.7%)
Missing	< 5	< 5	< 5
Emergency Presentation			
0	7568 (89.7%)	490 (76.8%)	373 (84.4%)
1	644 (7.6%)	67 (10.5%)	42 (9.5%)
2+	227 (2.7%)	79 (12.4%)	27 (6.1%)

Note: Data represent the number (column percentage) participants in each group who consulted a health professional or health centre in the previous 12 months by frequency of consultations, and the number (column percentage) who took a medication or supplement in the previous 2 weeks by frequency of consultation. DSP = Disability Support Pension; NSA = Newstart Allowance. Count data has been suppressed in cells with fewer than 5 cases (presented as < 5).

	Wage Earners	DSP Group	NSA Group
Missing	< 5	< 5	< 5
Medications			
0	4561 (54.0%)	87 (13.6%)	190 (43.0%)
1	1978 (23.4%)	90 (14.1%)	93 (21.0%)
2–5	1773 (21.0%)	281 (44.0%)	132 (29.9%)
6+	128 (1.5%)	180 (28.2%)	27 (6.1%)
Supplements			
0	4848 (57.4%)	377 (59.1%)	283 (64.0%)
1	1692 (20.0%)	122 (19.1%)	76 (17.2%)
2–5	1785 (21.1%)	131 (20.5%)	74 (16.7%)
6+	115 (1.4%)	8 (1.3%)	9 (2.0%)
Note: Data represent the number (column percentage) participants in each group who consulted a health professional or health centre in the previous 12 months by frequency of consultations, and the number (column percentage) who took a medication or supplement in the previous 2 weeks by frequency of consultation. DSP = Disability Support Pension; NSA = Newstart Allowance. Count data has been suppressed in cells with fewer than 5 cases (presented as < 5).			

Factors associated with a greater rate of GP consultations among DSP recipients included being female, daily smoking starting under the age of 18, and presence of severe or very severe pain in the past 4 weeks (see Table 1, Supplemental Digital Content, which describes results of regression model). There was a statistical association between GP consultations and comorbid conditions. In reference to those with 0 to 4 conditions, the IRR for those with 5 to 9 conditions was 1.29 (95% CI: 1.12–1.47), for 10–14 conditions the IRR was 1.35 (95% CI: 1.16–1.56), and for 15+ conditions the IRR was 1.48 (95% CI: 1.26–1.75). Having a postgraduate qualification and better self-reported health status was associated with lower rate of GP consultations.

Hospital Attendance and Admission

A greater proportion of DSP recipients reported attending an emergency department (23.2%) or being admitted to hospital as an inpatient (25.7%) at least once in the past 12 months than the NSA and wage earner groups (Table 2). The age and sex adjusted RRs for DSP recipients compared to wage earners were 2.37 (95% CI: 2.02–2.78) for attending an emergency department and 2.51 (95% CI: 2.15–2.93) for hospital admission (Fig. 4). Age and sex adjusted RRs for NSA recipients compared to wage earners were 1.53 (95% CI: 1.22–1.92) for attending an emergency department and 1.55 (95% CI: 1.23–1.94) for hospital admission (Fig. 4).

[Insert Fig. 4 here]

DSP recipients also reported significantly more hospital attendance and admission than respondents in the other groups (Fig. 3 & Table 3). Age and sex adjusted IRRs for DSP recipients compared to wage earners were 3.85 (95% CI: 3.10–4.79) for hospital admission as an inpatient and 4.41 (95% CI: 3.51–5.55) for attending an emergency department. Age and sex adjusted IRRs for NSA recipients compared to wage earners were 1.70 (95% CI: 1.26–2.28) for attending emergency and 1.85 (95% CI: 1.39–2.45) for inpatient admission.

Factors associated with a higher rate of hospital admission among DSP recipients included age less than 25 years, perceiving oneself as being underweight, and having hypertension (Supplementary Table 2). There was also an increased rate of hospital admission in those with more comorbid conditions. In reference to those with 0–4 conditions, for 5–9 conditions the IRR was 1.74 (95% CI: 0.96–3.18), for 10–14 conditions the IRR was 2.26 (95% CI: 1.20–4.26), and for 15+ conditions the IRR was 4.05 (95% CI: 2.07–7.95). Those with better self-assessed health were less likely to be admitted to hospital, in comparison to those with poor health.

Medication and Supplement Use

Eighty-six percent of DSP recipients reported having taken a medication in the previous two weeks in comparison to 57% of NSA recipients and 46% of wage earners (Table 2). In contrast, wage earners were most likely to report supplement use in the past two weeks. After age and sex adjustment the RR for DSP recipients for medication use was 3.38 (95% CI: 2.78–4.12) and for NSA recipients 1.17 (95% CI: 1.05–1.30) in reference to wage earners (Fig. 4). For supplement use the risk was significantly lower for both DSP recipients (RR: 0.89, 95% CI: 0.81–0.98) and NSA recipients (RR: 0.81, 95% CI: 0.71–0.92) in reference to wage earners.

Seventy-two percent of DSP recipients reported taking multiple medications and 28% took more than five medications in the past two weeks (Table 3). This compares to 36% and 6% in NSA recipients and 23% and 2% in wage earners. After age and sex adjustment the IRRs for medication use in reference to wage earners was 3.32 (95% CI: 3.03–3.63) for DSP recipients and 1.60 (95% CI: 1.42–1.81) for NSA recipients (Fig. 3). The age and sex adjusted IRRs for supplement use was 0.83 (95% CI: 0.73–0.94) for DSP recipients and 0.79 (95% CI: 0.68–0.93) for NSA recipients.

Discussion

This study confirms and extends knowledge of the links between working age social assistance benefit receipt and health service utilisation. Australian working age adults receiving disability or unemployment benefits were more likely to attend consultations with a greater range of healthcare professionals than wage earners, have more frequent consultations, were at greater risk of hospitalisation and emergency department attendance, and reported higher rates of prescription medicine use. Our findings also suggest that HSU among social assistance recipients is influenced both by burden of disease and by financial resources. For example, in those receiving disability benefits, the presence of multiple comorbid conditions was associated with a higher rate of primary care consultations and a higher rate of

hospitalisation. In contrast, health services that typically incur higher ‘out-of-pocket’ costs in the Australian healthcare system were less commonly used by benefit recipients than wage earners, including physical therapy, dentistry and supplement use.

Disability benefit receipt and health service use

Our findings demonstrate that people receiving disability benefits should be considered a group at high-risk of hospitalisation, warranting further attention and preventive action. A simple extrapolation of the data from this study to a population level suggests that DSP recipients account for approximately 14% of all public hospital admissions among working age Australians [16], despite accounting for less than 5% of Australians in this age group. Relative to wage earners, DSP recipients were also heavy users of many other healthcare services including primary care, allied health, community health and specialist medical services. DSP recipients are also much more likely to have multiple episodes of HSU than wage earners, and the rate of medicine use and polypharmacy in DSP recipients was significantly greater than that among wage earners.

Unemployment benefit receipt and health service use

Australians receiving unemployment benefits were more likely than wage earners to attend consultations with community-based healthcare practitioners including social workers, counsellors, psychologists and chemists. NSA recipients reported a greater number of GP and specialist consultations, a higher rate of hospital admission and emergency department attendance, and greater prescription medicine use than wage earners. While the magnitude of differences in HSU between NSA recipients and wage earners was not as great as that between DSP recipients and wage earners, they were still large. For example, NSA recipients were at 55% greater risk of being admitted to hospital in the preceding 12 months than wage earners, and nearly four times as many NSA recipients than wage earners reported consulting a GP more than 10 times over the preceding 12 months.

Implications and Future Research

The differences we observe in HSU between social assistance recipients and wage earners are stark, and indicate the substantial underlying burden of disease and disability in Australians with work-limiting disability and the unemployed. Combined, more than 1.45 million Australians received either the DSP or the NSA at the time this analysis was undertaken. That number has increased to over 2 million people during the COVID-19 pandemic, accounting for approximately 17% of the Australian working age population. Australian governments continually tightened access to both benefits with the objective of restricting growth in expenditure and encouraging people to seek paid employment [17]. For instance, requiring most DSP applicants to participate in job seeking or training for a period of 18 months before applying for the DSP. Reforms neglect consideration of the health of benefit recipients, or their HSU. There is substantial global evidence of the link between health and the ability to find and maintain work [13, 18]. It follows that effective health service delivery will support improvements in the ability of people receiving social assistance benefits to participate in job finding and employment. For example, it may be feasible

to identify the individual health needs of benefit recipients at the point of entry to the welfare system, and then deliver targeted health services that address those needs. Such approaches are being trialed in other Australian benefit systems such as workers' compensation [19].

Future studies should examine the effectiveness of health service delivery to benefit recipients and the impact on health status and ability to engage in employment. Longitudinal studies would provide particularly valuable information, and such studies may be feasible using linked administrative data or a prospective cohort design. It will also be valuable to examine sub-groups of DSP and NSA recipients to identify those with the greatest potential for improvement in health status. Such analyses may provide information to support the targeted delivery of services and supports based on demographic, health or other characteristics.

Since the completion of this study significant changes to both healthcare and social assistance systems have taken place in the Australian and international context, in response to the COVID-19 pandemic. In Australia the number of people receiving the unemployment benefit has doubled between March and June 2020 [20], a temporary payment has been introduced to ensure working age people remain attached to their employer during the pandemic, and the government has increased the amount of payment to the unemployed. We have also seen an unprecedented strain on our health care system, disproportionately from those in lower socioeconomic groups [21]. These new developments emphasise the strong interconnection between individual and community health, the operation of social assistance and healthcare systems.

Strengths and Limitations

Study strengths include the use of a large national sample, data collection using standardised coding schema, and availability of detailed service data across multiple healthcare settings. Availability of age and sex information enabled statistical adjustment of estimates. Limitations include the cross-sectional nature of the study which limits ability to infer causation, and the self-report survey methodology with potential for recall bias. There may also be response biases in the sample, as people who are ill and disabled may be less likely to participate in surveys.

Conclusion

This study provides evidence that better coordination between the Australian health and social assistance systems is needed. People receiving unemployment and disability benefits in the social assistance system use more health services than wage earners across primary, allied and community health services, public hospitals and prescription medicines. Health and work ability are strongly interconnected. Greater coordination between service provision in the health and social care systems may improve health, reduce health service use, and improve work ability in unemployed and working age Australians.

Abbreviations

CI Confidence Intervals

DSP Disability Support Pension

GP General Practitioner

HSU Health Service Use

IRR Incident Rate Ratio

NSA Newstart Allowance

RR Risk Ratio

Declarations

Ethics approval and consent to participate

The study was reviewed by the Monash University Human Research Ethics Committee and was considered exempt from ethical review. The study was conducted according to the World Medical Association's Declaration of Helsinki. Informed consent was obtained from study participants.

Consent for publication

Not applicable.

Availability of data and materials

The data that support the findings of this study are available from the Australian Bureau of Statistics but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available.

Competing interests

The authors declare no competing interests.

Funding

Funding for this project was provided by a Monash University Faculty of Medicine Nursing and Health Sciences establishment grant. AC is supported by an Australian Research Council Future Fellowship (FT19010028).

Authors' contributions

AC conceived the study and drafted the manuscript. LS conducted data analysis. All authors contributed to study design, reviewed the data analysis and its interpretation, revised and approved the final

Acknowledgements

The authors acknowledge the provision of data for this study from the Australian Bureau of Statistics, and input to study provided by the Australian Federation of Disability Organisations.

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Figures

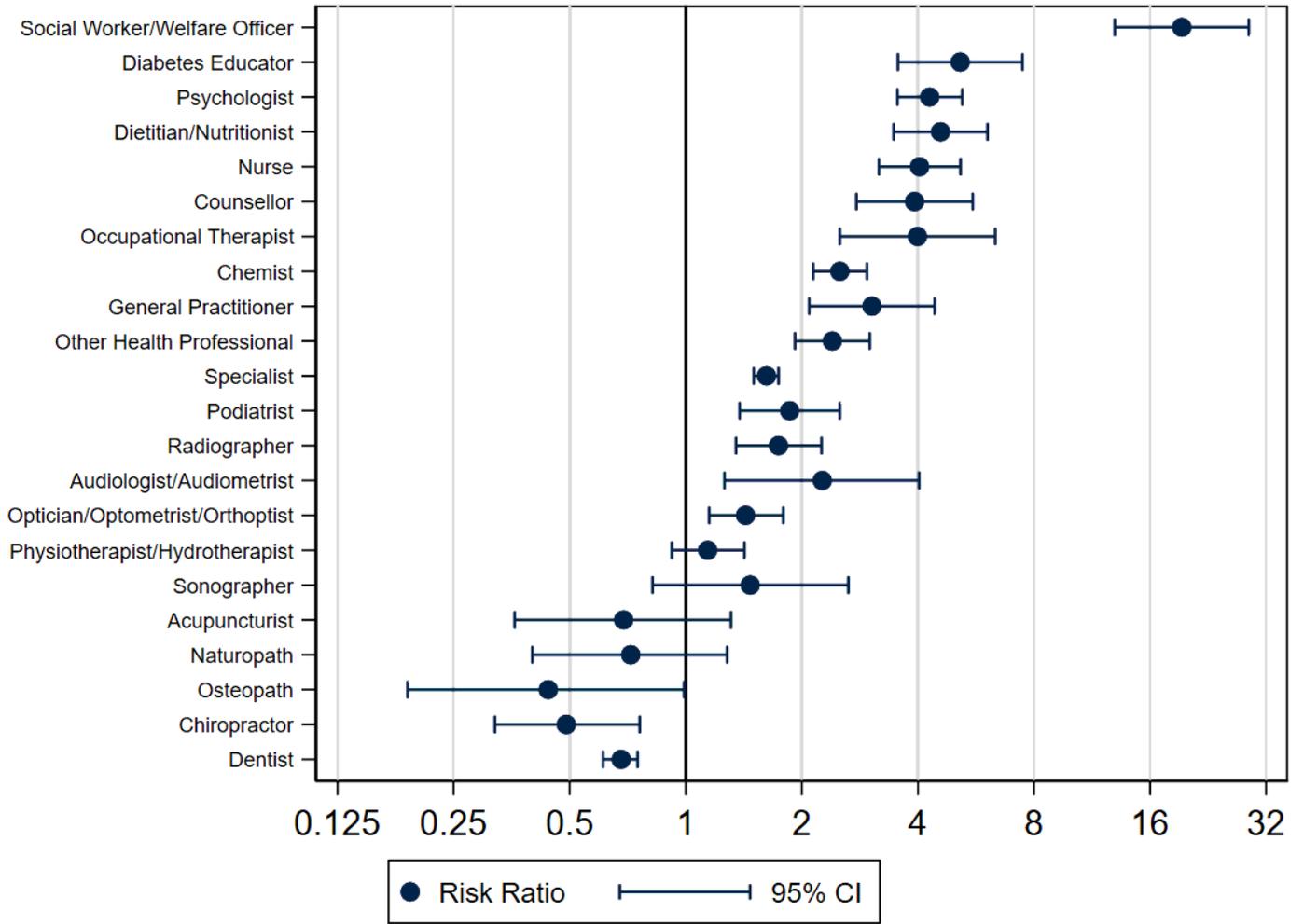


Figure 1

Age and sex adjusted risk ratios for having consulted health professionals in the past 12 months for disability benefit recipients compared to wage earners.

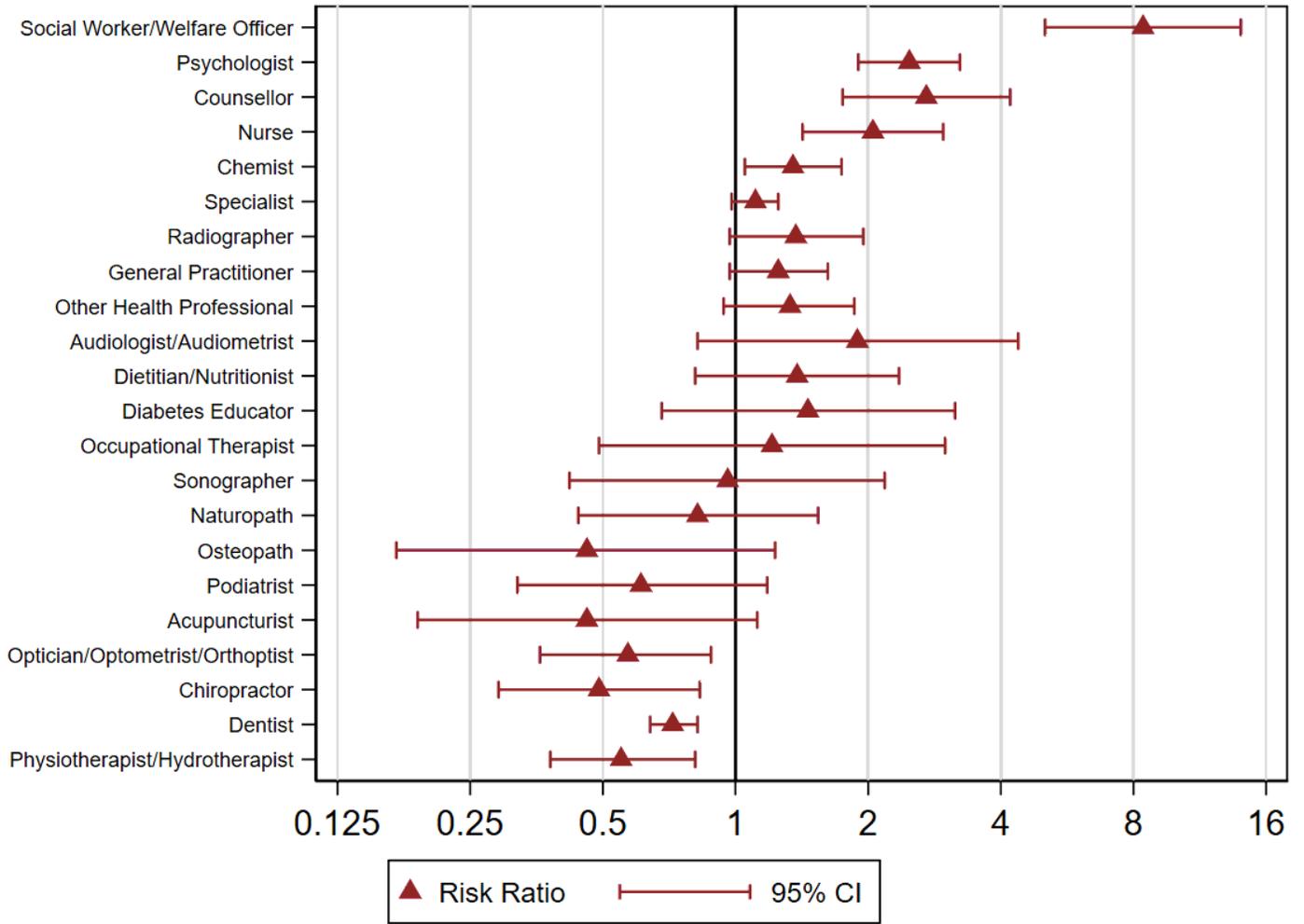


Figure 2

Age and sex adjusted risk ratios for having consulted health professionals in the past 12 months for unemployment benefit recipients compared to wage earners.

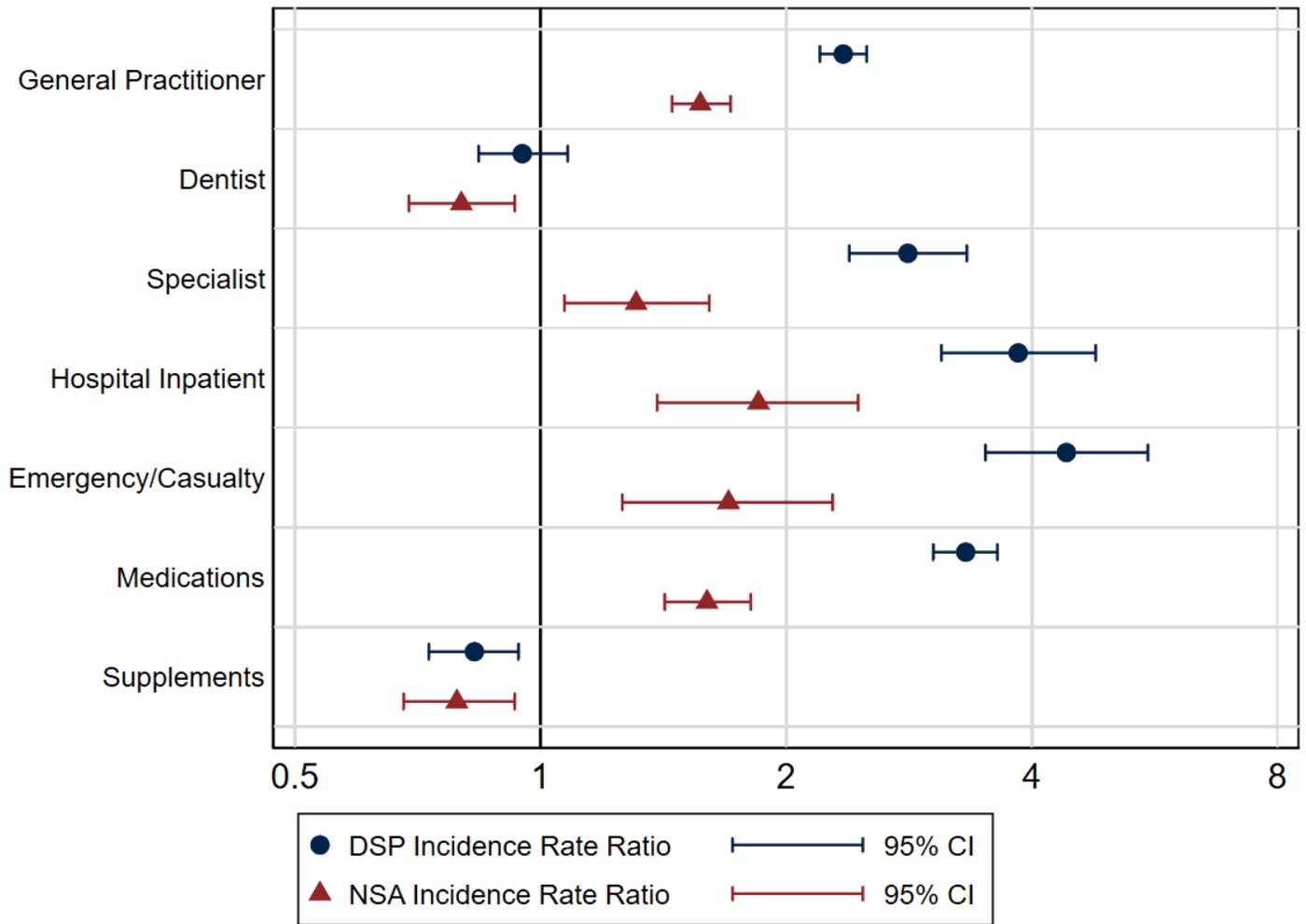


Figure 3

Age and sex adjusted incidence rate ratios for a) the frequency health professional consultations or hospital admission in the past 12 months and b) the number of different medication or supplements taken in the past two weeks, relative to wage earners.

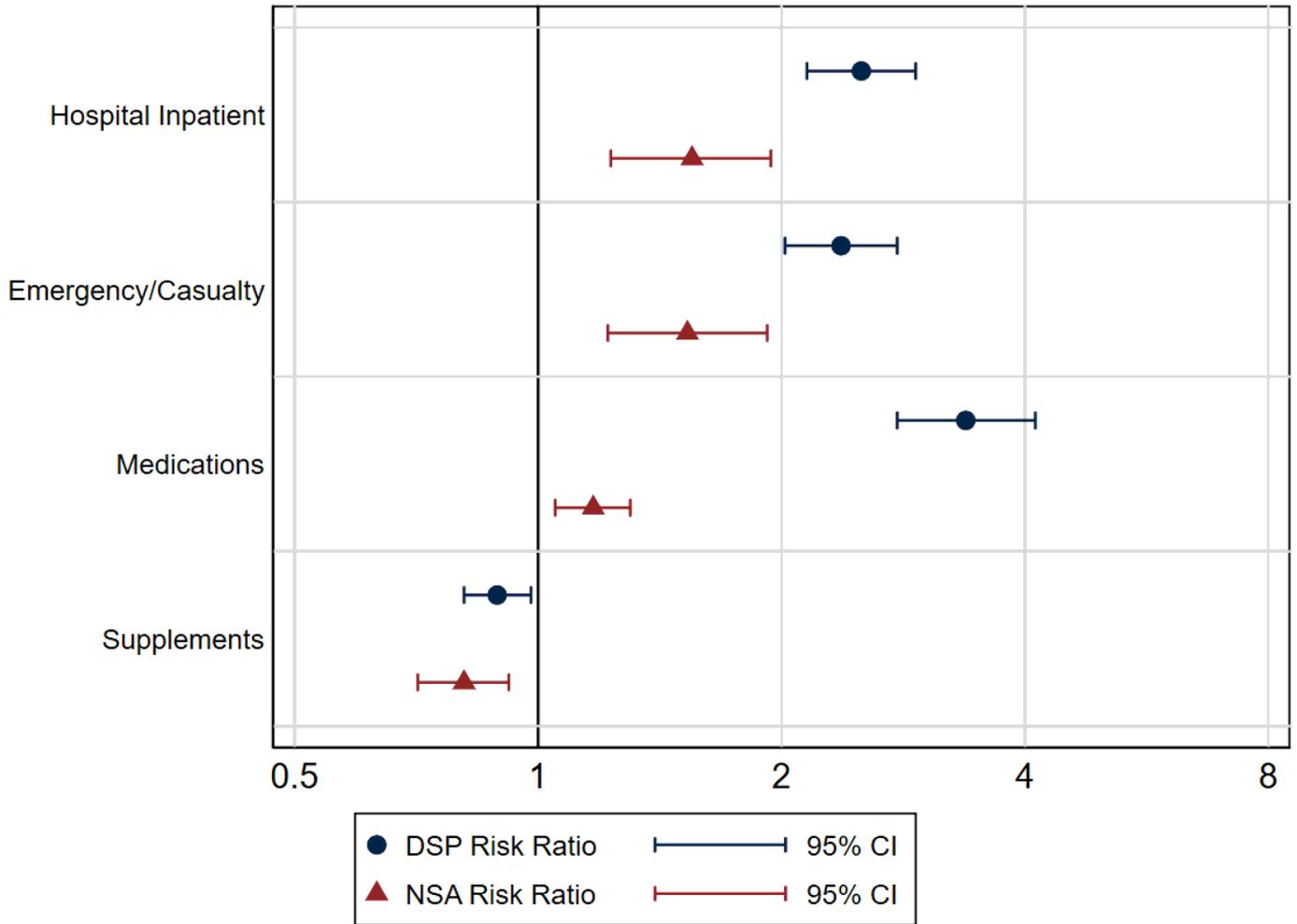


Figure 4

Age and sex adjusted risk ratios for a) having used a particular health service at least once in the past 12 months and b) having taken at least one medication or at least one supplement in the previous two weeks, relative to wage earners.

Supplementary Files

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