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Counting homelessness: Working creatively to generate complex descriptive profiles of the health and demographics of people experiencing homelessness in Adelaide

Joanne Flavel[1,2] | **Lisa Wood**[3] | **Toby Freeman**[1] |
Shannen Vallesi[4] | **Kristen Foley**[5] | **Yvonne Parry**[6] | **Fran Baum**[1]

[1]Stretton Health Equity, The University of Adelaide, Adelaide, South Australia, Australia

[2]College of Medicine and Public Health, Flinders University, Adelaide, South Australia, Australia

[3]Institute for Health Research, The University of Notre Dame, Fremantle, Western Australia, Australia

[4]School of Population and Global Health, The University of Western Australia, Perth, Western Australia, Australia

[5]Department of Public Health, Torrens University, Adelaide, South Australia, Australia

[6]College of Nursing and Health Sciences, Flinders University, Adelaide, South Australia, Australia

Correspondence

Joanne Flavel, Stretton Health Equity, School of Social Sciences, Stretton Institute, Napier Building, North Terrace, Adelaide, SA 5005, Australia.
Email: joanne.flavel@adelaide.edu.au

Funding information

Flinders University

Abstract

Analyses of the prevalence of homelessness suggest homelessness is increasing in Australia and other countries. Yet, difficulties exist in obtaining an accurate picture of homelessness due to a dearth of robust data and inconsistent definitions. This study aimed to build a comprehensive descriptive profile of homelessness and associated health needs in Adelaide. Five data sources were analysed and compared to produce descriptive sociodemographic and health statistics. Across data sources, people experiencing homelessness had a high prevalence of poor health outcomes and service utilisation. Consistent with the international literature, high rates of physical and mental health conditions were reported, including depression, anxiety and dental problems. While there was variability in demographic data, Aboriginal and Torres Strait Islander peoples were consistently over-represented. Analysing data from multiple sources provided a richer understanding of who is experiencing homelessness and their health needs, highlights it is not always necessary to collect new data to overcome dataset limitations and illustrates how data comparison can improve the use of existing data. The paper concludes with reflections on the challenges and potential of the methodology. Overall, the study shows analysing data from multiple sources can provide rich information to service providers and government departments to inform more nuanced and effective services.

1 | INTRODUCTION

Enumerating the number and characteristics of people experiencing homelessness and how they access health care is vital for informing policy and practice. Enumeration is particularly important in a healthcare setting, where people experiencing homelessness are vastly over-represented in measures of ill-health and service utilisation (Aldridge et al., 2018; Fazel et al., 2014; Moore et al., 2011). Homelessness is rarely identified internationally in health and hospital data systems (beyond flagging them as having "no fixed address") (Metraux & Tseng, 2017; Reilly et al., 2020), with many health providers unaware they may be caring for someone without a stable home (Doran & Raven, 2018).

Detailed information on the number and characteristics of people experiencing homelessness including demographics, triggers for homelessness, current accommodation type and health needs is critically important in formulating comprehensive responses to homelessness. Improvements in identifying homelessness early in healthcare encounters can expedite targeted support both within the hospital system and in connecting people to community-based health and homelessness services (Gazey et al., 2019). During the early stages of the COVID-19 pandemic, providing rapid access to housing and hotels would have been easier with such identification (Miller et al., 2020).

1.1 | Homelessness as a public health issue

The poorer physical and mental health of people experiencing homelessness is well-documented and reflects the experience of homelessness and its impact on multiple social determinants of health (AIHW, 2017; Council on Community Pediatrics, 2013; Elder & King, 2019; Luchenski et al., 2018; Parry et al., 2016; Stafford & Wood, 2017; Sydney Health Community Network, 2018). The homeless population has a higher risk of chronic health conditions, infectious diseases, poor oral health and mental illness than the general population (Aldridge et al., 2018; Davies & Wood, 2018; Queen et al., 2017; Vallesi et al., 2021). Complex comorbidities are common, and international and Australian evidence corroborates much higher rates of mortality and reduced life expectancy (Aldridge et al., 2018; Baggett et al., 2013; Elder & King, 2019; Pearson et al., 2021). Moreover, people experiencing homelessness face numerous barriers to primary care and community health services, including long waiting times, inflexible scheduling, lack of transportation, perceived stigma and discrimination, difficulty making and keeping appointments, and difficulty registering with a general practitioner (GP) due to lack of identification and address (Dorney-Smith et al., 2021; Fazel et al., 2014; Khan et al., 2018; Moore et al., 2007).

People experiencing homelessness are disproportionately high users of the hospital system (Lewer et al., 2021; Zaretzky et al., 2017), exacerbated by barriers to primary and GP care (Moore et al., 2011). Moreover, the experience of homelessness impedes access to disease prevention measures such as cancer screening, sexual health screening, smoking cessation, and exercise and nutrition advice (Wood, 2020). Homelessness is therefore a pressing public health issue that requires robust data drawn from specific contexts to develop appropriate and effective service approaches—yet, homelessness data are often fragmented, highly variegated and change with both political cycles and service provider needs. We detail challenges to collection and analysis of such complex data in Australia—necessitating the need for descriptive analytical work such as that described in this paper.

1.2 | Homelessness and inconsistent data concerns in Australia

Australian data collection relies heavily on point-in-time data such as the five yearly Census, which misses detailed information on subgroups and fails to account for the multidimensional nature of

homelessness. Point-in-time data fail to account for the fluid and transient nature of homelessness and cannot usually capture data on health outcomes and health service use. The Australian Institute of Health and Welfare (AIHW) publishes annual reports that describe characteristics of clients accessing specialist homelessness services, service use and unmet need (AIHW, 2021b). These reports are confined to clients but provide detail on numerous indicators at the national-level, albeit not disaggregated for subgroups of interest and therefore subject to similar limitations to the Census. There is no standard definition of homelessness in Australia, complicating data available for inclusion in analyses and the analytical work itself.

Our work addresses this gap in comprehensive homelessness and health data by drawing on multiple, already available datasets. This study aimed to produce a comprehensive descriptive profile of the sociodemographic and associated health needs of people experiencing homelessness in Adelaide. In doing so, we outline benefits that counting and understanding homelessness in this way might have for other communities and jurisdictions. We discuss how we overcame common challenges to data analysis when analysing diverse data. Our work will therefore be of theoretical interest and pragmatic use to international readers who work with populations experiencing homelessness.

2 | METHODS

2.1 | Study design

We obtained five data sources to construct our descriptive profile in the attempt to overcome data paucity and diversity. The sources were as follows: (1) 2016 Census data from the Australian Bureau of Statistics (ABS), (2) 2018–19 AIHW Specialist Homelessness Services Collection, (3) Homeless to Home (H2H) unit record data for 2018–19, (4) Adelaide Zero Project By-Name List as at 18 December 2019 and (5) 2018–19 data from SA Health solely related to emergency department visits and inpatient separations at the Royal Adelaide Hospital. Each of these data sources has strengths and limitations for producing estimates of the characteristics of people experiencing homelessness (see Table 1). Multiple data sources were used to overcome the limitations of relying on a single data source. This approach enabled us to access the breadth of data items to provide sufficient coverage to produce a profile of sociodemographics and health of the homeless population.

TABLE 1 Details of included data sources

Data source	Year(s) of data used in this profile	Strengths	Limitations
ABS Census microdata [National]	2016	Estimates compiled on a consistent basis over time	Limitations for analysis of subgroups
H2H [State]	2018–19	Unit record data which enables analysis by subgroup. Availability of data over time	Data are only collected from clients of SHS agencies and therefore only include a subset of persons experiencing homelessness
AIHW SHS Homeless Collection [National]	2016–17 to 2018–19	Availability of data over time. Wide range of information is collected	Data only collected from clients of SHS agencies. Limited ability to analyse subgroups
Adelaide Zero Project BNL [Local]	2018–19	Excellent breadth of information recorded	Only includes people who were first identified as sleeping rough in inner city Adelaide
SA Health Homeless Patients at the Royal Adelaide Hospital [State]	2018–19	Includes data on emergency department visits and inpatient separations and records repeated visits and separations	Data are only for one hospital in Adelaide and appear to be an underestimate

2.2 | Data sources

Five available data sources were selected that included data not only on homelessness but also sociodemographic and health-related indicators. Data on sociodemographic indicators were extracted from four sources to obtain estimates of the homeless population, characteristics of their experience of homelessness and coverage of key sociodemographic characteristics: age, gender, education, income and labour force status. Health data were obtained from the Adelaide Zero Project By-Name List, H2H and SA Health to cover physical and mental health conditions, need for healthcare services, disability and trimorbidity.

The definition of homelessness varies in the data sources used, reflecting the lack of a standardised definition in Australia. The Chamberlain and McKenzie definition is often used to inform who is considered homeless during data collection, distinguishing between primary (street), secondary (refuges and temporary accommodation) and tertiary homelessness (Flatau et al., 2009), but there is also a broader definition that simply defines homelessness as "inadequate access to safe and secure housing" (Flatau et al., 2006, 2009). The AIHW and H2H define homelessness as "living in non–conventional accommodation (such as living on the street), or short–term or emergency accommodation (such as living temporarily with friends and relatives)" (AIHW, 2021a). The ABS definition of homelessness is broader than that used by the AIHW and considers a person as homeless if they live in a dwelling that is inadequate, or where they live has no tenure or short and nonextendable tenure, or "does not allow them to have control of, and access to space for social relations" (AIHW, 2021a). In this study, we use the AIHW and H2H definitions of homelessness as these enabled the greatest consistency of comparable data across the various data sources.

The first data source used was Australian Census data, which are collected once every 5 years and report the status of homelessness on a single night (ABS, 2016). The 2021 Census data on homelessness are due for release in 2023; therefore, the 2016 Census was the most recent available for this study. The ABS recognises that the conventional Census data collection methods can preclude people who do not have a home, and so in more recent years, the ABS has also had field teams counting people sleeping rough and obtaining data from crisis accommodation providers and boarding houses in efforts to provide a more accurate count of people experiencing homelessness (ABS, 2018a). The ABS definition of homeless includes people without dwellings (primary), people temporarily staying with others or in lodging (secondary), and people in supported accommodation and boarding houses (tertiary homelessness), as well as people living in overcrowded accommodation (ABS, 2018b).

For the purposes of this paper, to align the various data sources around the type of homelessness being considered, Census data on those living in overcrowded accommodation were excluded. Census data were extracted from Census microdata using TableBuilder.

The second and third data sources were H2H and the AIHW Specialist Homelessness Service Collection. H2H is a South Australian data source on clients of specialist homelessness services administered by the South Australian Housing Authority. Both H2H and the AIHW Specialist Homelessness Services Collection include information from specialist homelessness services about adults and children who seek assistance or are referred to Government-funded specialist homelessness services. The South Australian component of the AIHW Specialist Homelessness Collection, which comprises agencies included within H2H, was used for this study. Specialist homelessness service agencies (and other homelessness programmes) enter client and service data into H2H. H2H and the AIHW Collection both include information on people experiencing homelessness and people at-risk of homelessness. However, for the purposes of this study, we only used H2H and AIHW data for people experiencing homelessness to ensure consistency in data included from the multiple data sources analysed. AIHW statistics were obtained from AIHW Specialist Homelessness Services Collection data cubes.

Data from both the AIHW and the H2H were used to balance their strengths and limitations. The AIHW collection has a wide range of indicators, but data cubes provided do not allow for analyses by subgroup. H2H contains similar records to the AIHW for fewer variables but has the advantage of enabling analysis by subgroup due to provision of unit record data. Additionally, H2H includes

data on more clients than the South Australian component of the AIHW Specialist Homelessness Collection because there are broader counting rules for clients in H2H and inclusion of additional organisations or programs funded from sources other than the National Housing and Homelessness Agreement. H2H data were used to perform analyses by subgroup, while AIHW data were analysed for indicators not included in H2H data.

The fourth data source used was that from the Adelaide Zero Project, part of the Australian Alliance to End Homelessness' Advance to Zero campaign, which uses the By-Name List methodology across 14 communities in Australia (Community Solutions, 2018). The By-Name List is a person-specific database routinely updated to show a "near-live" list of people currently experiencing homelessness (Community Solutions, 2021). The Adelaide Zero Project By-Name List captures a range of characteristics, experiences and risks for each person using a common self-report assessment tool: the Vulnerability-Index Service Prioritisation Decision Assistance Tool (VI-SPDAT) (OrgCode, 2015; Tually et al., 2017). The VI-SPDAT is an internationally used tool and obtains information on physical and mental health, emergency service use, self-care, and substance abuse of respondents.

The fifth data source was from SA Health, data on emergency department presentations and inpatient separations of homeless patients in the 2018–19 financial year (1 July 2018 to 30 June 2019). Unfortunately, these data did not include any sociodemographic characteristics other than Indigenous status.

2.3 | Analysis

Census and AIHW data for Greater Adelaide were downloaded and extracted into Excel files, summarising key data in frequency tables to enable calculation of percentages where needed. H2H unit record data were supplied in an Excel file. We imported H2H records into Stata version 14 and selected the records of clients who received specialist homelessness services in 2018–19 and were in Adelaide at intake. Duplicate records for clients who had multiple support periods in 2018–19 were dealt with by counting only the most recent support period of each client. The Adelaide Zero Project By-Name List data were supplied in a CSV file. H2H and Adelaide Zero Project By-Name List data were imported into separate Stata files for cleaning, with Stata used to calculate descriptive statistics for each of these two data sources, namely frequencies and percentages.

3 | RESULTS

3.1 | Demographics

Demographic information from four data sources is presented in Table 2 (Census, AIHW, H2H and the Adelaide Zero Project By-Name List). Differences in definitions of homelessness and inclusion criteria for each data source result in differences in the estimates of the number of people experiencing homelessness. Adelaide Zero Project By-Name List only included adults who were rough sleepers in inner city Adelaide at entry to the By-Name List. In December 2019, there were 193 people on the By-Name List and 89 per cent of them were rough sleepers at that time. The Adelaide Zero Project By-Name List therefore represents a small subset of the total number experiencing homelessness in Adelaide.

Census Microdata provided an estimate of Adelaide homelessness of 3235 people. AIHW and H2H numbers (5618 and 6092, respectively) are similar to one another, providing estimates of the number of people experiencing homelessness who were referred to or sought assistance from specialist homelessness service agencies in Adelaide. All figures likely underestimate the true number of people experiencing homelessness in Adelaide—AIHW and H2H only count clients rather than those who are homeless and do not access services. Census estimates have been acknowledged to understate

TABLE 2   Demographic data across differing data sources

	ABS Census microdata	H2H	AIHW SHS Homeless Collection	Adelaide zero project BNL
Number	3235	6092	5618	193
Gender				
Male	63.4%	45.7%	45.9%	63.3%
Female	36.7%	54.3%	54.1%	36.7%
Aboriginal and/or Torres Strait Islander	11.3%	29.6%	27.4%[a]	35.8%
Age profile				
<20	20.6%	36.4%	28.0%	-
20–29	18.0%	22.5%	24.9%	11.0%
30–39	15.9%	19.2%	20.4%	32.3%
40–49	16.9%	14.3%	15.8%	36.2%
50–59	14.4%	5.9%	7.3%	16.5%
60+	13.9%	1.8%	2.0%	3.9%
Education				
Year 9 or below	9.1%			
Year 10 or above	30.7%			
Cert III or IV	11.3%			
Degree or above	6.7%			
Income				
<$500 per week	49.7%			
Newstart		28.0%	31.1%	40.5%
DSP		10.5%	12.5%	23.2%
Parenting payment		9.7%	11.1%	
Youth allowance		9.3%	9.9%	
Missing/not stated	30.3%	34.0%	16.2%	29.5%
Labour force status				
Employed	16.3%	4.6%	5.6%	
Employed full-time	6.7%		1.5%	
Employed part-time	7.3%		4.1%	
Employed, away from work	2.3%			
Unemployed	12.6%	36.7%	40.9%	
Not in the labour force	38.9%	54.2%	35.7%	
Housing situation				
Sleeping rough	5.7%	32.3%		89%
Couch surfing		25.3%		
Short-term emergency accommodation		33.1%		
Supported accommodation	32.7%			
Staying temporarily with other households	29.3%			
Boarding houses	25.4%			

[a]Available for South Australia only.

homelessness. This underestimate is in part due to some groups (e.g. young people and people escaping domestic and family violence) reporting their former address as their usual address (ABS, 2018a). The transient nature of homelessness and people experiencing homelessness not having a home also makes them difficult to survey in a Census.

3.2 | Heterogeneity among people experiencing homelessness

Varying inclusion criteria for each data source result in different compositions of housing situations, which have implications for computing demographic statistics. Internationally and in Australia, men are more likely to be experiencing rough sleeping homelessness (Montgomery et al., 2016), and this is reflected in the gender of those on the Adelaide Zero Project By-Name List and in the 2016 Census data for Adelaide. Males represent 63 per cent of people experiencing homelessness in the Census. Yet, AIHW and H2H data indicate a higher rate of homelessness service use for females. These differences in gender breakdown between data sources can be partially explained by a large proportion of people experiencing homelessness who are not connected to specialist homelessness services. Less than half of the people on the By-Name List were connected to specialist homelessness services when they completed the VI-SPDAT. Additionally, there may be gender differences in help-seeking from homelessness services (Wood et al., 2021).

Age profile variations were also noted across data sources. People on the Adelaide Zero Project By-Name List who were actively experiencing homelessness were older than for other data sources as eligibility for the By-Name List is confined to adults. Young people are more likely to be couch surfing or in temporary accommodation rather than sleeping rough (Salvation Army). Aboriginal and Torres Strait Islander people also represent a higher proportion of the By-Name List (35.8 per cent) than the other data sources (11.3 per cent in the Census, 29.6 per cent in H2H) and are over-represented in the homeless population according to all data sources given they comprised just 1.4 per cent of the Greater Adelaide population in 2016 (ABS, 2016).

Data sources in this study indicate that 28–40 per cent of people experiencing homelessness were receiving Newstart allowance (since renamed Jobseeker), which was below the Australian poverty line of $457 per week per adult in early 2020 (Henwood, 2020). Only a small proportion of specialist homelessness service clients reported being employed. The Census estimate of employment among people experiencing homelessness is larger than both H2H and AIHW estimates but is still low.

3.3 | Reasons for homelessness

Only two data sources had measures relating to reasons for homelessness (H2H and AIHW). Data from H2H included main reason for seeking specialist homelessness services support and indicate lack of housing was the central need. Analysis of H2H data found that the main reasons included housing crisis (49 per cent), followed by inadequate or inappropriate dwelling (18 per cent). Domestic violence was the main reason reported by 10 per cent of clients, higher for female clients (14.4 per cent) than for male clients (5 per cent).

3.4 | Health and well-being

Only two data sources used (SA Health and the Adelaide Zero Project) had detailed health-related measures. The health measures in the VI-SPDAT (By-Name List instrument) asked whether respondents had ever been diagnosed with any mental health conditions. For physical conditions, By-Name List respondents were asked whether they had ever had (or whether a health provider had ever told them they had) any medical conditions. Self-reported health outcomes from the VI-SPDAT (via the

By-Name List) showed high rates of chronic conditions including poor oral health (58 per cent), asthma (27 per cent), hepatitis C (20 per cent) and higher likelihood of being diagnosed with mental health conditions including depression (63 per cent), anxiety (59 per cent) and post-traumatic stress disorder (41 per cent) (Table 3). High rates of physical and mental health conditions are consistent with the literature on the complex health needs of people experiencing homelessness, particularly those sleeping rough (Flatau et al., 2018). H2H data for 2018–19 indicate that almost 37 per cent of clients were identified as having a mental health condition; however, this was based on identification by specialist homelessness services workers and is likely an underestimate. Two-thirds (67 per cent) of By-Name List participants reported having experienced recent or past abuse or trauma, a key trigger for poor mental health outcomes. In addition to diagnosed mental health conditions, almost a third (31 per cent) of By-Name List respondents reported previous traumatic brain injury or head trauma.

Health needs are complicated by comorbidities, with 85 per cent of By-Name List participants self-reporting at least one physical medical condition, 15 per cent reporting two physical medical

TABLE 3 Self-reported health outcomes via the VI-SPDAT

	n	%
Physical health conditions		
Dental problems	79	58.1
Dehydration	47	34.3
Asthma	37	27.2
Foot/skin infections	36	26.5
Hepatitis C	27	19.7
History of heat stroke/heat exhaustion	20	14.7
Heart disease, arrhythmia or irregular heartbeat	15	10.9
Liver disease, cirrhosis or end-stage liver disease	15	10.9
Diabetes	15	10.9
Convulsions	14	10.5
Scabies	13	9.6
Emphysema/COPD	13	9.4
Kidney disease/end-stage renal disease or dialysis	12	8.7
History of frostbite, hypothermia or immersion foot	12	8.8
Cellulitis	10	7.3
Epilepsy	9	6.7
Chronic digestive condition	9	5.8
Cancer	5	3.7
Diagnosed mental health conditions		
Depression	87	63.0
Anxiety (other than PTSD)	81	58.7
Post-traumatic stress disorder (PTSD)	56	40.6
Psychosis	26	19.3
Schizophrenia	25	18.4
Borderline personality disorder	24	17.7
Obsessive compulsive disorder (OCD)	18	13.4
Bipolar disorder	15	11.2
Eating disorder	14	10.5

Note: There were between 134 and 138 responders for the three VI-SPDAT questions on health conditions, which resulted in slight differences in percentages for conditions with the same frequency.

conditions and 11 per cent reporting three medical conditions. Trimorbidity (physical, mental health *and* substance use issues) was reported by 59 per cent of By-Name List participants. These figures illustrate the depth of health needs within populations that experience homelessness.

3.5 | Disability

Four data sources had data related to disability, but each used different disability indicators. In the Census, 5.5 per cent of people experiencing homelessness lived with a disability that required assistance with core activities. The H2H and AIHW disability indicator includes both core activity limitations requiring assistance and people who have difficulty but do not need help or supervision: in H2H, 10.8 per cent of clients experiencing homelessness were people with disabilities. The By-Name list asked respondents whether they had a physical disability that would limit the type of housing they could access or make it difficult to live independently because they would need help, and 12 per cent reported they had a physical disability.

3.6 | Healthcare utilisation

Two data sources had data relating to healthcare utilisation (SA Health and the Adelaide Zero Project By-Name List). SA Health data indicated that in 2018–19, 383 patients experiencing homelessness accounted for 1035 emergency department presentations at the Royal Adelaide Hospital. Almost 17 per cent had two presentations, and 25 per cent were seen at the emergency department three or more times. Of emergency department presentations at the Royal Adelaide Hospital, 43 per cent were for mental health and psychosocial conditions. Among By-Name List participants, 40 per cent reported they received care at an emergency department two or more times, and 13 per cent reported five or more emergency department presentations in the 6 months preceding their completion of the VI-SPDAT. By-Name List participants reported high use of acute healthcare services, with 65 per cent reporting they received healthcare at emergency departments in the 6 months preceding their completion of the VI-SPDAT, with 49 per cent attending by ambulance and 45 per cent being admitted.

3.7 | Barriers to service utilisation

The Adelaide Zero Project By-Name List data were the only source which had measures relating to barriers to service utilisation, where 53 per cent of respondents reported avoiding or being unable to access care when feeling unwell. Almost a quarter of By-Name List respondents reported they previously had to leave some form of shelter (housing, crisis accommodation or another place they were staying) because of their physical health. In addition, 12 per cent of By-Name List respondents had a physical disability that would make it difficult for them to live independently or limit the type of housing they could access.

4 | DISCUSSION

4.1 | Measuring homelessness

In lieu of a comprehensive measure of homelessness, this study analysed data from five sources (local, state and national) to produce a complex descriptive profile of people experiencing homelessness in Adelaide that identified differences in the demographics between rough sleepers, people who are couch surfing, in emergency accommodation or temporary accommodation, and highlighted their

health needs (particularly those sleeping rough). The differences in data obtained from each of these sources need to be interpreted by considering who is included in each data source. For example, the higher proportion of men experiencing homelessness according to the Census and By-Name List (which are not confined to clients accessing services) corresponds with the literature suggesting men are more likely to experience rough sleeping homelessness (Montgomery et al., 2016). The older age profile in the By-Name List is an artefact of the By-Name List inclusion criteria (which only includes adults and is focussed on those sleeping rough), whereas data sources which include people who are couch surfing or living in temporary accommodation reveal that people aged under 20 years represent between 21 and 36 per cent of people experiencing homelessness.

The profile produced in this paper advances our understanding of the scale of homelessness in Adelaide and the characteristics of people experiencing homelessness. The methodology we used has potential for analyses of homelessness in other settings. Analysing data from multiple sources allowed us to exploit the strengths of each source alongside their limitations and showed that it is not always necessary to collect new data to overcome data limitations; rather, it is possible to make better use of existing data on this population. We aimed to explicate strategies that may be of use to researchers in facilitating this work with data custodians and policy actors within other jurisdictions. These include the following:

- accessing a range of different data sources (i.e. population/census statistics, State-level records and local service data);
- using different types of data (i.e. using self-reported and qualitative data to complement administrative records);
- using differing time points (i.e. point in time counts vs "live" data).

4.1.1 | Obtaining access to a range of data sources

This was a time-consuming process to produce the profile and involved contacting data custodians, applying for access, obtaining data and disseminating draft reports with custodians. Data acquisition time is one of the main challenges in undertaking studies of this kind and must be factored into planning processes (i.e. outlining scope of work, grant proposals/budgeting and projected timelines). Engaging with data custodians on specifics of individual indicators and learning from their expertise took additional time but resulted in overall improvements to reporting and was necessary to gaining approval to publish data. Despite the time-consuming process, we found our collaboration with data custodians to be mutually beneficial—it increased reporting accuracy and broadened data custodian understanding of how data can be used in research.

4.1.2 | Use different data types

Quantitative administrative records provide statistics on people experiencing homelessness but do not give any context to the individuals or their experience of homelessness. By complementing these data with qualitative and self-reported data, we can learn about individual needs and circumstances, such as how long someone has experienced homelessness and the type of homelessness they have experienced. Despite criticism of self-reported tools such as the VI-SPDAT (Bomberry et al., 2020; Brown et al., 2018; Cronley, 2022; Fritsch et al., 2017), it provides richer information on people experiencing homelessness than the Census and administrative data and has been predictive of returns to homelessness in the United States (Petry et al., 2021). Limitations of service-level data are that it may miss people who are not connected or who are not well-known among service providers.

4.1.3 | Use of differing timeframes within data

Point-in-time counts (such as the Census which is completed every 5 years) provide an overview of homelessness across the population but are limited to a single point in time, and new releases are

often only available after a lag. The By-Name List, while reliant on individuals regularly entering data into the system, does provide a more "live" overview of homelessness in a community. Other groups also support using multiple different approaches to capture an accurate picture of homelessness. For example, the Homeless Mortality Data Toolkit developed by the National Health Care for Homeless Council describes the current best-practice methodology for counting homeless deaths as requiring the use of multiple sources of information (National Health Care for the Homeless Council Homeless Mortality Data Workgroup, 2021).

4.2 | Health profile of people experiencing homelessness in Adelaide

The inequitable distribution of social determinants of health engenders inequities in health, which can then further reduce access to social determinants including housing, income and employment (CSDH, 2008). Consistent with the literature (Aldridge et al., 2018; Queen et al., 2017; Vallesi et al., 2021), chronic physical and mental health issues were observed at higher rates than those seen in the nonhomeless population. Queen et al. (2017) found that 63 per cent of homeless patients had a long-term physical condition, and 62 per cent had a long-term mental health condition, which is similar to the high prevalence reported in this study. While some results related to health conditions supported those in the literature, the Adelaide Zero Project By-Name List self-reported (via the VI-SPDAT) data contain a breadth of health variables including the prevalence of traumatic brain injury and prevalence of exposure-based conditions, which are not reported in the majority of the literature. Analysing health data from Adelaide Zero and SA Health allows some comparison and corroboration of findings and more comprehensive coverage of the health needs of this population. By-Name List data indicate that exposure-based conditions are more prevalent among people sleeping rough, namely dental problems, dehydration and foot/skin infections. This adds to findings in the literature of excessive mortality from tuberculosis among people experiencing homelessness (Hwang et al., 2009), higher prevalence of frostbite and infections (Mackelprang et al., 2014), and poorer oral health and high dental needs among people experiencing homelessness compared with the general population (Ford et al., 2014; Hill & Rimington, 2011).

Analysis of two data sources capturing acute health service use enabled some statistical comparison on frequency of service use and reporting on a wider range of data items. Research by Flatau et al. (2018) using consolidated By-Name List data from Brisbane, Sydney, Perth, Melbourne and Hobart reported a similar high frequency of acute health service use to our study (58 per cent of respondents reported they had received care at an emergency department in the previous 6 months compared with 65 per cent in the Adelaide By-Name List data in our study). By-Name List data are from an older population than SA Health data (which included all emergency department presentations to a main city hospital). By-Name List data are also drawn from a population known to have higher acute service utilisation (people sleeping rough), and this may explain differences in the percentage of people experiencing homelessness who had two or more emergency department presentations when comparing SA Health data and By-Name List data.

Our use of multiple datasets produced data and insights useful for service planning. For example, overall, 12 per cent of By-Name List respondents reported having a physical disability that would make living independently difficult. Such information is useful because it points to the need for accessible and affordable ground-floor accommodation. Additionally, high rates of traumatic brain injury (31 per cent) were reported among the By-Name List group, which is comparable with the 53 per cent lifetime prevalence of traumatic brain injury and 22.5 per cent lifetime prevalence of moderate or severe traumatic brain injury among homeless individuals found by Stubbs et al. (2020), who reported that prevalence of traumatic brain injury was higher among people experiencing homelessness than among the general population. High rates of traumatic brain injury influence needed supports, particularly in relation to cognitive impairment and for appointment reminders, paying bills and taking medications.

This population is often conceived by healthcare services as "hard to reach," which impacts service provision (Flook et al., 2020). Our data implore a flipped view, with services reconceptualised as hard to reach, where the onus is with service providers to use available data to determine how they can

make their services easier for people to access. If people are invisible, the fact that services are hard to access also remains hidden—reinforcing the need to analyse diverse and multisource data to enable more effective understanding of the demographic profile of this population, learn about the extent of barriers they face in accessing services and illuminate context/s of trauma and social exclusion that can trigger or exacerbate their experience of homelessness.

4.3 | Limitations

Data sources such as the Census are an underestimate of the true scale of the homeless population. H2H and the AIHW Collection collect valuable information but only for clients of specialist homelessness services. The By-Name List enables comprehensive data collection; however, it is only limited to a small area in the Adelaide CBD. Our analysis of data from the By-Name List was also point in time for December 2019 (date of extraction); proportions can vary and are dependent on individuals frequently updating data in the system. The most detailed health data were only available in the By-Name List data, which had the lowest sample size of the data sources analysed, and VI-SPDAT is only undertaken with chronic homeless/rough sleepers and is based on self-reported data; therefore, the statistics on physical and mental health conditions and use of acute health services are not generalisable to all people experiencing homelessness. SA Health data on emergency department presentations and inpatient separations are only for the Royal Adelaide Hospital, the main CBD hospital, but other hospitals may be used by people experiencing homelessness. Data on emergency department presentations are sensitive to any misenumeration of homelessness on patient records; however, the high rates of emergency department utilisation found in this study are similar to those found in the literature.

5 | CONCLUSION

This study highlights the importance of reviewing data systems and their use as a way of informing service providers as to how they can make their services more accessible. More accurate identification of who is homeless, their health needs and service access is important for several reasons. It improves the assessment of the extent of health service used by people who are experiencing homelessness, and the consequential costs borne by the health system. It may also help to devise appropriate responses to crises that adequately support people experiencing homelessness (such as in the case of the COVID-19 pandemic). Our study shows that analysing data from multiple sources generates complex descriptions of people who experience homelessness, providing the information service providers and governments need to inform more nuanced and effective services.

AUTHOR CONTRIBUTIONS
Joanne Flavel: Conceptualization; formal analysis; methodology; writing – original draft; writing – review and editing. **Lisa Wood:** Writing – original draft; writing – review and editing. **Toby Freeman:** Conceptualization; funding acquisition; project administration; supervision; writing – original draft; writing – review and editing. **Shannen Vallesi:** Writing – original draft; writing – review and editing. **Kristen Foley:** Writing – review and editing. **Yvonne Parry:** Writing – review and editing. **Fran Baum:** Conceptualization; supervision; writing – review and editing.

FUNDING INFORMATION

ORCID

Joanne Flavel https://orcid.org/0000-0003-3228-7192
Toby Freeman https://orcid.org/0000-0002-2787-8580

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AUTHOR BIOGRAPHIES

Joanne Flavel is a Research Fellow at Stretton Health Equity. She is a scholar in social epidemiology and public health, but her quantitative skills and social science background are interdisciplinary. Her research focusses primarily on health equity and social determinants of health. She has qualifications and experience in economics and public health, and her research interests include interactions between health and work, the social and economic determinants of health, health economics, injury epidemiology and global public health.

Lisa Wood is a Professor at the University of Notre Dame and works in the health promotion and public health field. Her experience includes work with academic, government and nongovernment organisations, and engagement as a public health consultant in WA, nationally and internationally. Her focus is on translational research that is useful and relevant. Her current areas of research and public health activity include homelessness, closing the gap in Aboriginal well-being, mental health, social determinants of health, and tobacco control.

Toby Freeman is a Senior Research fellow at Stretton Health Equity, University of Adelaide. His core interest is policy-engaged research on how to redress growing health inequities. His areas of research include primary healthcare, Aboriginal and Torres Strait Islander health, healthy public policy and social determinants of health.

Shannen Vallesi is a Research Associate at the Centre for Social Impact at the University of Western Australia and the Institute for Health Research at the University of Notre Dame. Her research is underpinned by a passion for reducing health inequalities through "real world" relevant research, specifically around addressing disparities for some of Australia's most disadvantaged people. Shannen co-leads the evaluation of Perth's first Housing First project and other health-led responses to ending homelessness through her role in the Home2Health team.

Kristen Foley is a Social Scientist committed to ethical, robust and collaborative research. She has a background in occupational therapy and pays particular attention to how people's lives and choices are shaped by the environmental contexts in which they live, work and play, and ensures that theoretical understanding reflects these complexities. She is experienced in mixed research methods and often works in the spaces between disciplines to increase the scope, insight and translation of her research.

Yvonne Parry's work exists at the important intersection between nursing, and primary health, public health and community health services for vulnerable children and populations. Her significant work with community partners and community-based services aims at improving the health

outcomes and service provision for children. Yvonne has developed innovative responses to health provision for at-risk children and families. Her research is underpinned by the principles of social justice, child-centred practice and social equity of health access for vulnerable children.

Fran Baum is a Public Health Social Scientist with a special interest in creating healthy, equitable and sustainable societies. She is a professor of health equity and program director of Stretton Health Equity in the Stretton Institute at the University of Adelaide. Her research contributes to understanding the underlying social and commercial determinants of health inequities and determining ways in which governments respond to these determinants, especially through the application of cross-sector initiatives including Health in All Policies and Healthy Cities.