Housing Instability among People Who Inject Drugs: Results from the Australian Needle and Syringe Program Survey

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ABSTRACT *High rates of substance dependence are consistently documented among homeless people, and are associated with a broad range of negative outcomes among this population. Investigations of homelessness among drug users are less readily available. This study examined the prevalence and correlates of housing instability among clients of needle syringe programs (NSPs) via the Australian NSP Survey, annual cross-sectional seroprevalence studies among NSP attendees. Following self-completion of a brief, anonymous survey and provision of a capillary blood sample by 2,396 NSP clients, multivariate logistic regressions identified the variables independently associated with housing instability. Nineteen percent of ANSPS participants reported current unstable housing, with primary ('sleeping rough'; 5 %), secondary (staying with friends/relatives or in specialist homelessness services; 8 %), and tertiary (residential arrangements involving neither secure lease nor private facilities; 6 %) homelessness all evident. Extensive histories of housing instability were apparent among the sample: 66 % reported at least one period of sleeping rough, while 77 % had shifted between friends/relatives (73 %) and/or resided in crisis accommodation (52 %). Participants with a history of homelessness had cycled in and out of homelessness over an average of 10 years; and one third reported first being homeless before age 15. Compared to their stably housed counterparts, unstably housed participants were younger, more likely to be male, of Indigenous Australian descent, and to report previous incarceration; they also reported higher rates of key risk behaviors including public injecting and receptive sharing of injecting equipment. The high prevalence of both historical and current*

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housing instability among this group, particularly when considered in the light of other research documenting the many adverse outcomes associated with this particular form of disadvantage, highlights the need for increased supply of secure, affordable public housing in locations removed from established drug markets and serviced by health, social, and welfare support agencies.

KEYWORDS Homeless persons, Intravenous substance abuse, Needle exchange programs, Sentinel surveillance, Behavioral risk factor surveillance system

INTRODUCTION

To enumerate the homeless population, Australia relies on a ‘cultural definition’ of homelessness based on the premise that homelessness is more than the absence of shelter, and also includes accommodation that falls below minimum acceptable community standards of housing security and access to facilities.¹ For a single person or couple, this standard is a small rental apartment with bedroom, living area, kitchen, and bathroom, and an element of security of tenure provided by a lease. According to this conceptualization—which captures people who ‘sleep rough’, those in crisis accommodation, and those who, in the absence of any usual residence, shift between friends’ and relatives’ homes—105,000 people were homeless in Australia in 2006, an increase of almost 5 % since 2001; the majority were single, male, and over 18 years of age.² One in every 105 Australians received support from a government-funded specialist homelessness agency in 2008–2009. The largest group accessing this support were single males aged 25 years and over. Their most commonly reported reason for seeking assistance (15 %) was problematic substance use.³

People who are homeless suffer considerably worse health than the general population,⁴ contributing to an age-standardized mortality rate up to four times higher among this group.^{5,6} Mental disorders are prevalent among homeless people,^{7–9} with substance dependence the most common diagnosis among homeless populations across the Western world, occurring at rates far exceeding those among the general population.^{10–14} A recent meta-analysis indicated that up to 59 % of homeless people are alcohol dependent, and 54 % are dependent on at least one illicit drug.⁷ Other evidence suggests that more than half of homeless people with a substance use disorder suffer at least one comorbid psychiatric disorder.¹⁴

Substance use disorders are commonly considered to be associated with the etiology of homelessness, a notion captured in the ‘social selection’ model and underpinned by the proposition that homelessness represents the endpoint of the gradual depletion of an individual’s economic and social resources as a result of their substance dependence.¹⁵ In contrast, the ‘social adaptation’ model¹⁶ focuses on substance use as a consequence of homelessness. Here, homelessness constitutes an environment where drugs are readily available and their use is an accepted practice into which people may be socialized and/or pressured, and which may serve as a means of coping with an uncertain and chaotic lifestyle.^{17–19} With evidence to support both theories, the presence of either homelessness or substance use clearly predisposes an individual to the other.^{16,20} Indeed, substantial evidence documents many risk factors common to both.^{18,21} Life experiences highly prevalent among both homeless populations²¹ and dependent drug users²² include childhood adversity, subsuming poor relationships with parents, neglect, physical and sexual

abuse, and being forced or placed into care out of the home,^{23–26} experiences which themselves contribute to the risk of concurrent and future mental health problems^{27–29}; early economic disadvantage; school expulsion and lack of academic qualifications³⁰; inadequate social networks; and offending behavior and incarceration.³¹

Episodes of homelessness are longer, on average, for substance-dependent individuals,^{17,32} suggesting that problematic drug use can operate as a barrier to exiting homelessness.³³ Likewise, in a longitudinal investigation of 1,327 people who inject drugs (PWID), unstable housing was associated with both longer times to achieve cessation of injecting and shorter periods to subsequently relapse.³⁴ People with substance use disorders do not readily seek treatment,³⁵ and those further marginalized by homelessness may be even less likely to access services. The associated economic burden is nevertheless substantial due to the significantly higher utilization of hospital emergency services among homeless substance users than the general population.^{14,36} Substance dependence renders homeless people at increased risk of violent victimization^{37,38}; involvement in other illegal activities^{39,40}; and elevated levels of harmful behavior including suicide attempts^{41,42} and risky injecting practices.^{38,43–45} Among newly released prisoners, the risk factors most strongly associated with reincarceration are homelessness and escalating heroin use.⁴⁶

PWID are at high risk of blood-borne virus (BBV) acquisition. Housing instability is linked to BBV prevalence and incidence among PWID, who perceive that environmental factors including homelessness and fear of policing and arrest increase BBV risk because unpredictable settings disrupt individual capacity to make risk-reducing decisions.⁴⁷ Although such findings are not universally reported,⁴⁸ numerous studies have demonstrated that HIV prevalence is significantly higher among PWID who report current or historical homelessness compared to those who have never experienced homelessness^{49–51}; and both case-control⁵² and prospective^{50,53} studies have demonstrated that unstable housing predicts HIV seroconversion. In Australia, where HIV seroprevalence among PWID remains low,⁵⁴ results relating to hepatitis B and C infections among this group acquire particular significance. Lifetime history of homelessness is significantly associated with previous exposure to hepatitis B virus⁵⁵ and hepatitis C virus⁵⁶ (HCV). Associations between unstable housing and HCV incidence have been demonstrated prospectively in studies in Vancouver and Wales, in both of which HCV-negative PWID in unstable housing at baseline were significantly more likely to acquire HCV infection during follow-up than their stably housed counterparts.^{43,57}

In 2008, the Australian Government defined a national approach to reducing homelessness, with targets of halving homelessness and offering supported accommodation to all those ‘sleeping rough’ by 2020.⁵⁸ Despite the scale of the issue and the targets set, many gaps remain in our knowledge of homelessness in Australia. Notably in this context, information on the prevalence of drug use among homeless people is substantial and clearly demonstrates a strong relationship,^{10,12,14,15,17,59} yet data on homelessness among problem drug users are less readily available, having been collected only among restricted samples of drug users, such as those seeking treatment,²⁰ or participants of studies of HIV prevalence, incidence, and risk behaviors and risk reduction interventions.^{34,48,51–53}

Since 1995, the Australian NSP Survey (ANSPS) has provided annual point prevalence estimates to monitor patterns of BBV infection and risk behaviors among needle and syringe program (NSP) clients.^{60,61} Previous research has demonstrated

the representativeness of ANSPS samples of the broader population of NSP clients.⁶² Using ANSPS data collected in 2010, this exploratory, descriptive study aimed to document the prevalence and correlates of housing instability among a large sample of PWID attending NSPs throughout Australia.

METHODS

ANSPS methodology is described elsewhere.^{60,61} Briefly, all PWID who attended participating NSPs during the 2010 October survey period were invited to complete a brief survey covering demographics; drug use and treatment history; injecting and sexual risk; and current and lifetime housing instability; and to provide a capillary blood sample subsequently screened for antibodies to HIV and hepatitis C virus. Fifty-three of Australia's 85 primary NSP sites participated in the 2010 ANSPS, from which was recruited a sample of 2,396 clients, corresponding to a response rate of 39 %, within the range of all years of ANSPS conduct (range 38–60 %).⁶³ Respondents provided informed verbal consent for their voluntary, anonymous, unreimbursed participation. The ANSPS was approved by the numerous relevant institutional, jurisdictional, and site-specific Ethics Committees, including that of UNSW.

Assessment of Housing Stability

Consistent with current Australian federal government policy definitions,⁵⁸ and with Australian cross-sectional homelessness studies cited in this paper, lifetime and current indicators of housing instability were categorized into three types.¹ *Primary homelessness* includes scenarios such as sleeping rough or in a squat or improvised dwelling including a car. In the Northern Territory in Australia's northwest, the terms 'staying in the long grass' or 'long grassing' refer to primary homelessness among Aboriginal people.⁶⁴ *Secondary homelessness* includes staying with friends and relatives and with no other usual address; or staying in specialist homelessness services. *Tertiary homelessness* includes people living, both short- and long-term, in boarding houses, hostels, or caravan parks with no secure lease and no private facilities.

For the purposes of this paper, participants were divided into two groups based on their response to the item, 'where are you currently living?' Those who endorsed the response options *private rental; home owner or purchaser; public/community housing; or drug/alcohol detox or treatment facility* were classified as currently residing in stable housing. All other response options—*sleeping rough/squat/long grass; shifting between relatives, friends, and/or acquaintances' places; crisis accommodation (refuge); boarding house or hostel; caravan park; or backpackers/ hotel/motel*—were considered to indicate current unstable housing. Participants further indicated 'how long' they had resided at this location, providing in the majority of cases responses which for comparability could be converted to the unit of 'months'. In a minority of instances, participants provided qualitative responses intended to indicate extended periods, including 'ages', 'off and on for 20 years', 'all my life', 'lifetime', and 'forever'. In these cases, the arbitrary value of '999' months was assigned, and the measure of central tendency chosen to represent these data is the median.

In an attempt to provide concrete operationalizations and minimize the potential for participants to apply their own understandings to the complex construct of homelessness, historical housing instability was assessed via the following items:

‘have you ever in your life had nowhere of your own to stay and you were sleeping rough or in a squat or long grassing?’ (primary homelessness); and ‘have you ever in your life had nowhere of your own to stay and you were shifting between relatives, friends, and/or acquaintances’ places?’ and ‘have you ever in your life lived in crisis accommodation (a refuge)?’ (secondary homelessness).

Serological Testing

Capillary blood samples were obtained using single-use lancets and cotton blotting paper. HIV antibody (anti-HIV) was detected using Genetic Systems HIV-1 ELISA tests. Reactive specimens were subjected to Western blot confirmatory testing. A modified, third generation enzyme immunoassay (Abbott hepatitis C 3.0, Chicago, IL, USA) was used to test for HCV antibody (anti-HCV). A modified cutoff value for optical density was calculated to capture greater than 95 % of the seronegative population. Specimens were considered positive for anti-HCV if the optical density to cutoff ratio was ≥ 1 on initial and subsequent confirmatory testing.

Statistical Analysis

Chi-square (χ^2) and odds ratios (ORs) with corresponding 95 % confidence intervals (CIs) were used to assess univariate associations between current housing instability and demographic, drug use, BBV, and risk indicators, with significance set at $p < 0.05$. Multivariable logistic regression, using forward elimination, derived adjusted odds ratios (AOR) and associated CIs controlling for variables associated at $p \leq 0.05$ with current housing instability on univariate analysis. Data were analyzed using SPSS version PASW 18.0.

RESULTS

Sample Characteristics

Participants ($N=2,396$) had a mean age of 37.3 years (SD 9.5; range 15–73) and 67 % were male (Table 1, columns 1–4). The majority (88 %) identified as heterosexual, 9 % identified as bisexual (67 % female), and 4 % as homosexual (59 % male). Fifty-two percent of participants reported a history of incarceration; and 12 % identified as Aboriginal and/or Torres Strait Islander (Indigenous). Participants first injected drugs a mean of 17.4 years (SD 9.7; range <1–60) preceding participation. In the preceding month, 47 % of participants had injected daily or more often; 46 % had injected in public; and 14 % had engaged in receptive syringe sharing. Drugs injected most recently included heroin (34 %) and methamphetamine (27 %). Six percent of participants reported recent sex work. Fifty-three percent tested positive to anti-HCV, and 1 % to anti-HIV.

Current Accommodation and Recent Housing Stability

One in five participants (19 %) reported current unstable housing, with current primary (5 %), secondary (8 %), and tertiary (6 %) homelessness all reported. Participants were most likely to report currently residing in private rental properties (42 %) or public/community housing (28 %), with a smaller proportion (10 %) reporting home ownership/purchase (Table 2). Half (51 %) of the sample reported residence in one location in the preceding 12 months, and 21 % had resided in two, while one in eight (12 %) had lived in five or more places in the preceding 12 months. Sixty percent of stably housed participants reported residence in a single

TABLE 1 Demographic, drug use, and risk characteristics of 2,396 public sector NSP clients and relationship to current housing stability

Variable	Total sample (N=2,396)	Current stable housing ^a (N=1,762)	Current unstable housing ^b (N=392)	Univariate relationship		Multivariate relationship	
				OR (95 % CI)	p value	AOR (95 % CI)	p value
Mean age (years) (SD; range)	37.3 (9.5; 15–73)	37.7 (9.5; 15–73)	35.8 (9.2; 15–62)	.98 (.97–.99)	<.001	.99 (.97–1.00)	.046
Gender (%)							
Male (reference group)	67	66	76	1 (–)	–	1 (–)	–
Female	32	34	24	.62 (.48–.80)	<.001	.70 (.52–.95)	.022
Transgender	<1	<1	<1	Excluded	–	–	–
Australian-born (%)	89	88	91	1.40 (.96–2.05)	.081	–	–
English speaking background (%)	96	96	97	1.15 (.62–2.16)	.654	–	–
Indigenous descent (%)	12	10	16	1.66 (1.21–2.27)	.001	1.48 (1.01–2.15)	.044
History of imprisonment (%)	52	50	64	1.74 (1.39–2.19)	<.001	1.71 (1.30–2.26)	<.001
Imprisoned in last 12 months (%)	11	10	20	2.21 (1.60–3.05)	<.001	–	–
Inject in prison last 12 months (%) ^c	33	33	37	1.22 (0.64–2.29)	.548	–	–
Recent sex work (%)	6	6	7	1.39 (.90–2.14)	.134	–	–
Sexual identity (%)							
Heterosexual (reference)	88	88	86	1 (–)	–	–	–
Bisexual	9	8	12	1.50 (1.04–2.16)	.029	–	–
Homosexual	4	4	2	.60 (.28–1.26)	.175	–	–
Mean years injecting (SD; range)	17.4 (9.7; <1–60)	17.5 (9.7; <1–60)	16.9 (9.4; <1–43)	.99 (.98–1.01)	.328	–	–
Frequency injecting last month (%)							
Less than weekly (reference)	29	29	27	1 (–)	–	–	–
Weekly or more often	24	25	21	.94 (.68–1.28)	.676	–	–
Daily or more often	47	46	52	1.22 (.94–1.58)	.145	–	–
Reused syringes last month (%)	24	23	27	1.23 (.94–1.61)	.136	–	–
Receptive sharing syringes last month (%)	14	13	16	1.24 (.89–1.73)	.203	–	–
Receptive sharing other equipment last month (%) ^d	29	26	41	2.04 (1.58–2.63)	<.001	1.63 (1.24–2.15)	<.001
Any public injecting last month (%)	46	41	64	2.66 (2.07–3.42)	<.001	2.20 (1.68–2.90)	<.001
Injected by other person last month (%)	13	12	19	1.78 (1.30–2.46)	<.001	–	–

Obtained syringes in preceding month (%)						
NSP	91	93	88		.60 (.42–.86)	.006
Pharmacy	20	20	25		1.42 (1.09–1.85)	.009
Personal sources (e.g., friend, dealer)	11	10	16		1.81 (1.32–2.48)	<.001
Vending machine	8	8	10		1.35 (.92–1.97)	.128
Drug injected most recently (%)						
Heroin	34	33	35		1 (–)	–
Methamphetamine	27	27	26		.92 (.70–1.22)	.575
Morphine/other opioids	16	16	18		1.04 (.75–1.43)	.833
Methadone/buprenorphine/suboxone	14	14	13		.87 (.61–1.24)	.433
Other	10	10	8		.74 (.48–1.13)	.167
Drug treatment history (%)						
Methadone	58	58	58		1.0 (.80–1.25)	.973
Buprenorphine	38	38	40		1.09 (.87–1.37)	.437
Buprenorphine/naloxone	26	25	30		1.25 (.98–1.60)	.075
Other treatment (e.g., detox/rehab/ counseling)	60	60	61		1.04 (.83–1.31)	.726
History of any drug treatment	82	81	83		1.18 (.88–1.57)	.280
Serological testing: antibody positive (%)						
HIV	1	1	<1		1.52)	.121
HCV	53	52	55		1.10 (.88–1.38)	.400
Self-reported history of BBV testing (%)						
HIV	87	87	88		.92 (.66–1.28)	.623
HCV	91	89	92		.68 (.47–.99)	.042
History of HCV antiviral therapy (%) ^e	11	13	6		.45 (.26–.81)	.007

^a“Current stable housing” includes private rental, home owner or purchaser, public/community housing, or drug/alcohol detox or treatment
^b“Current unstable housing” includes sleeping rough/squat/long grass; shifting between relatives, friends, and/or acquaintances’ places; crisis accommodation (refuge); boarding house or hostel; caravan park; or backpackers/hotel/motel
^cAmong participants who reported imprisonment in the preceding 12 months
^dNote that significant univariate differences were found between participants who reported current stable and unstable housing for every individual ancillary injecting item (water, spoons, filter, and drug solution)
^eAmong participants who reported a history of HCV testing

TABLE 2 Lifetime and current indicators of housing instability among 2,396 Australian NSP clients

Current residential arrangements (%) (median months lived here; range) ^a	
Private rental (including shared rental)	42 (12; <1–999)
Home owner or purchaser	10 (60; <1–999)
Public/community housing	28 (36; <1–999)
Sleeping rough/squat/long grass	5 (4.5; <1–999)
Shifting between relatives, friends, and/or acquaintances' places	6 (3; <1–999)
Crisis accommodation/refuge	2 (1; <1–120)
Drug and alcohol detox or treatment facility	<1 (2; <1–5)
Boarding house or hostel	5 (5; <1–999)
Caravan park	<1 (6; <1–48)
Backpackers' hostel/hotel/motel	1 (2.5; <1–12)
Other (primarily parents' or partners' houses)	2 (36; <1–999)
Number of different places lived last 12 months (%)	
One	51
Two	21
Three	11
Four	5
Five or more	12
Lifetime history of primary homelessness (%)	66
Lifetime history of secondary homelessness (%)	77
Lifetime history shifting between relatives/friends/acquaintances (%)	73
Lifetime history of residing in crisis accommodation (%)	52
Longest continuous period of 'having nowhere of my own to stay' (%)	
Never had nowhere to stay	24
Less than 1 week	9
Between 1 and 4 weeks	15
One to 6 months	18
Six to 12 months	14
More than 12 months	20
Age 'first time had nowhere of my own to stay' (N=1,591) ^b	
Median (years); range	18 (1–59)
%	
<10 years	2
11–15 years	30
16–20 years	33
21–30 years	22
31–40 years	9
41–50 years	4
51–60 years	<1
Age 'last time had nowhere of my own to stay' (N=1,566) ^b	
Median (years); range	30 (7–59)
%	
<10 years	<1
11–15 years	2
16–20 years	13
21–30 years	40
31–40 years	28
41–50 years	14
51–60 years	2
61–70 years	0
71–80 years	<1
Mean duration (years) (SD; range) history of homelessness (N=1,523) ^c	9.87 (9.32; <1–44)

^a'999' months was used in cases where participants provided qualitative responses designed to indicate extended periods, such as 'ages', 'off and on for 20 years', 'all my life', 'lifetime', 'forever'

^bAmong participants who reported a history of having nowhere of their own to stay

^cCalculated by subtracting age of 'first time had nowhere of my own to stay' from age of 'last time had nowhere of my own to stay'

location during that period; whereas 58 % of those currently experiencing primary homelessness, 27 % of those experiencing secondary homelessness, and 28 % of those experiencing tertiary homelessness had resided in five or more places in the preceding 12 months. Ten percent of participants currently experiencing primary homelessness reported having lived in just one place in the preceding 12 months, indicating that they had been sleeping rough at least this long. Stably housed participants reported having resided in the same place for a median of 24 months, whereas median durations of residence were substantially shorter for participants currently experiencing primary (5 months), secondary (3 months), or tertiary (3.5 months) homelessness.

Lifetime Prevalence of Homelessness

Sixty-six percent of participants reported at least one period of primary homelessness during their lifetime (Table 2); and 77 % reported at least one period of secondary homelessness (73 % had shifted between relatives/friends/acquaintances' places, while 52 % had resided in crisis accommodation). Among participants who reported at least one period of 'having nowhere of my own to stay', the mean interval between age at first and most recent homelessness was 9.87 years (SD 9.32; range <1–44), with 25 % having experienced episodes of homelessness over a period of 16 years or longer. Among those who reported at least one period of having no residence of their own, median age of first homelessness was 18 years (range 1–59 years). Thirty-two percent of this group reported first experiencing homelessness before age 15, and a further 33 % before age 21. Median age of most recent (including current) homelessness was 30 years (range 7–59 years).

Forty-two percent of participants who reported at least one period of having nowhere of their own to stay had experienced such a period for between 1 and 12 months, and a further 27 % had had no residence of their own for longer than 12 months. Among the 440 participants who reported a period of homelessness lasting more than 12 months, 36 % currently resided in public housing and 26 % in a private rental property; while 33 % continued to experience some form of homelessness, including 13 % currently sleeping rough.

Correlates of Current Housing Instability

A number of variables had significant univariate associations with current housing instability (Table 1, columns 5–6). Compared to stably housed participants, unstably housed participants were younger, more likely to be male, and more likely to identify as bisexual. They were more likely to identify as Indigenous and to report both lifetime and recent incarceration histories. They were also more likely to report receptive sharing of ancillary injecting equipment (water, spoon, filter, and/or drug solution), public injecting and having been injected by another person in the preceding month; and were more likely to have obtained syringes from pharmacies and personal sources such as friends or dealers during that period. Conversely, unstably housed participants were less likely to have obtained syringes from an NSP in the preceding month; and to report having undertaken HCV antiviral therapy.

Many of these associations were not significant after controlling for other factors (Table 1, columns 7–8). Multivariate logistic regressions demonstrated that the strongest independent associations with unstable housing were recent public injecting (AOR 2.20; CI 1.68–2.90); and a history of incarceration (AOR 1.71; CI 1.30–2.26). Compared to stably housed participants, unstably housed participants were also significantly more likely to report receptive sharing of ancillary injecting

equipment (AOR 1.63; CI 1.24–2.15), Indigenous identity (AOR 1.48; CI 1.01–2.15), and having obtained syringes from personal sources in the preceding month (AOR 1.44; CI 1.01–2.06). Conversely, unstably housed participants were significantly less likely to be women (AOR 0.7; CI .52–.95); and were younger (AOR .99; CI .97–1.00) than their stably housed counterparts.

DISCUSSION

Housing instability is clearly a form of disadvantage suffered by a significant proportion of PWID in Australia. A substantial minority (19 %) of ANSPS participants reported current unstable housing, half had changed residence at least twice in the preceding 12 months, and three quarters reported a lifetime history of homelessness. Although we acknowledge that it is impossible to be certain our results would generalize to all PWID in Australia, the demographic, drug use, and risk behavior characteristics of this sample were highly consistent with those of previous ANSPS samples,⁵⁴ and draw attention to earlier research which demonstrated ANSPS samples to be as representative a sample of PWID as it is practical to obtain.⁶² In light of this previous research, we suggest that similarly high prevalence of historical and current housing instability as that documented in the present results is likely to characterize both NSP clients who do not participate in the ANSPS, and the broader population of PWID in this country.

Methodological challenges are inherent in comparisons of prevalence estimates of homelessness across studies which use different definitions of homelessness, draw from different subpopulations of drug users and observe participants over varying time periods.^{50,65} Generally, however, the prevalence of housing instability among our sample appears lower than that documented in samples of North American PWID, which range from 16 % over an 8-year period⁶⁵ through to 47 % over a 10-year period⁵⁰ and up to 85 % lifetime history,⁵⁵ while documented rates of current and recent rates housing instability include 60,⁵³ 62⁵¹, and 68 %⁵⁷ in Vancouver, and an average of 54 % across five US cities including Los Angeles and Seattle.⁴⁸ Likewise, estimates from studies in the UK also suggest higher prevalence of current and recent homelessness than we found among our sample, ranging from 44 % of 282 PWID in South Wales,⁴³ to 59 % of a community sample of 1,058 PWID recruited across seven sites in England.⁵⁶ Nevertheless, and as the international literature would predict,⁵⁰ housing is clearly a significant problem among PWID relative to the broader Australian population. Home ownership/purchase was reported by just one in ten ANSPS participants, with private rentals (42 %) and public/community housing (28 %) together accounting for the current accommodation arrangements of the majority. In comparison, general population figures indicate that in 2005–2006, around 70 % of Australian households lived in their own home (owned or mortgaged); 22 % of households were in private rentals; and around 5 % of households resided in public housing.⁶⁶

Consistent with the notion of ‘homeless careers’, in which homelessness is seen as a dynamic and possibly long-term process rather than a static category,⁶⁷ homelessness was clearly a chronic and cyclical condition for a substantial proportion of our sample. The 1,523 participants who provided sufficient data to enable the computation had cycled in and out of homelessness over a mean period of close to 10 years; and 25 % had experienced episodes of homelessness over a period of 16 years or longer. Just 20 % of those who reported at least one period of homelessness reported that all such episodes occurred within the space of a single

year. Conceiving of homelessness as a dynamic trajectory or ‘career process’ emphasizes the need for interventions tailored to different phases of the homeless experience—prevention, early intervention, crisis intervention, and long-term support. That one-third of those who had experienced homelessness first did so before the age of 15—many presumably having lived the experience alongside their parents—highlights the importance of prevention, given that the experience of homelessness as a child increases the risk of future homelessness and repeated use of homelessness services.⁶⁸ The notion of homeless careers also draws attention to potential exit points from, as well as pathways to, chronic homelessness.⁶⁹

Multivariate analyses indicated that unstably housed participants differed significantly from those in stable accommodation in a number of ways. More likely to be male and with an average age in their mid-30s, their basic demographic profile fits that of the population seeking support from Australia’s specialist homelessness agencies, among whom problematic substance use is the most common reason for presentation.³ The fact that unstably housed participants were more likely than their stably housed counterparts to identify as Indigenous is also consistent with broader patterns of homelessness in Australia. Indigenous Australians experience homelessness at a rate four times higher than non-Indigenous Australians (191 versus 49 per 10,000 population in the 2006 Census); and despite constituting around 2.5 % of the general population, account for 9 % of the total homeless population.⁷⁰ Homeless Indigenous Australians are more likely to sleep rough than their non-Indigenous counterparts, perhaps accounting for their over-representation among people assisted by specialist homelessness agencies in 2008–2009 (17 %). The reasons for seeking assistance from such services and the type of assistance provided are nevertheless similar among homeless Indigenous and non-Indigenous Australians.⁷⁰

Aboriginal Australians are thought to be over-represented among PWID in Australia,⁷¹ as is also likely to be the case among Indigenous peoples in at least some regions of other resource-rich countries such as Canada.^{72,73} As in Australia, Aboriginal people are also over-represented among homeless populations in Canada.⁷⁴ Strong relationships between drug use, homelessness, and risky injecting practices are evident among Canada’s Indigenous peoples and are thought to account, at least in part, for the elevated HIV prevalence and incidence observed among Aboriginal PWID in this setting.^{53,72,75,76} Similarly, ANSPS data collected between 1998 and 2008 and stratified by Indigenous Australian origin documented significantly higher rates of both anti-HCV and key injecting risk behaviors among these participants relative to their non-Indigenous counterparts.⁷⁷ Although housing information was not available for this (previous) analysis, the consistency between the present results and those derived from other settings which demonstrate strong associations between housing and risk among Indigenous peoples suggests that the elevated HCV prevalence and injecting risk behaviors previously documented among Aboriginal ANSPS participants⁷⁷ is likely to be at least partially accounted for by housing inequities experienced by Indigenous and non-Indigenous ANSPS participants. Scholars in Indigenous Health in both Canada⁷⁸ and Australia⁷⁹ suggest that the poor outcomes across a broad range of health and social indicators experienced by Aboriginal people in the two countries is rooted in their shared history of colonization. Certainly, there are many commonalities between the experiences of and outcomes for Indigenous Australians and Canadian first nation peoples. Nevertheless, there are significant social and contextual differences, such as the absence of treaties, limited and weak native title legislation, and the lack of a Bill

or Charter of Rights, that caution against assuming that findings from Canadian studies can be directly transposed to the Australian context.⁸⁰ These differences highlight the importance of the present study as the first Australian findings to extend the Vancouver-based research on homelessness among PWID.

In line with the consistent relationships demonstrated between unstable housing and imprisonment,⁸¹ unstably housed participants were more likely to report a history of incarceration than their stably housed counterparts. By virtue of their histories of trauma and victimization, disrupted educations, unemployment, mental and intellectual disabilities, poverty, and problematic substance use, prisoners and ex-prisoners are among the most disadvantaged members of society.⁸² The absence of policy and practice options which would enable provision of suitable housing to newly released prisoners only compounds this entrenched disadvantage, significantly adding to the challenges in finding employment and (re-)establishing social networks; and impedes attempts to break the cycle of offending and re-incarceration. Perversely, prison can constitute a form of secure, affordable housing for many prisoners who lacked such housing prior to incarceration; indeed, a significant proportion of prisoners/ex-prisoners have lived in a marginal space characterized by the presence of State institutions (child protection, public housing, refuges and crisis housing, the criminal justice system) from an early age.⁸³ Suitable accommodation in appropriate locations (for example, removed from established drug markets and in areas well served by health, social, and welfare agencies) is consistently indicated as a fundamental requirement for ex-prisoners' successful transition to life outside prison, yet large minorities of newly released ex-prisoners cannot access such housing. For example, half of 339 prisoners released from correctional facilities in Australia's two most populous jurisdictions changed accommodation two or more times during the 3-month post-release period; and this housing transience increased the odds of re-incarceration by 1.45.⁴⁶ Research in this area consistently demonstrates the need for specialized housing and post-release accommodation support, yet many ex-prisoners come from and return to already severely disadvantaged locations where few services are available. Arguments for changes to government-funded housing benefits that would allow prisoners to retain their public housing while incarcerated, are clearly supported by the strong associations between ex-prisoners' accommodation arrangements and the likelihood of social (re)integration.⁸³

The majority of previous cross-sectional investigations have documented strong associations between housing and prevalent BBV infection among PWID.^{49–51,55,56} Consistent with Coady et al.,⁴⁸ however, we failed to demonstrate differential rates of HIV or HCV between stably and unstably housed ANSPS participants. This lack of association may be accounted for by the challenges inherent in attempting to relate current or recent risks to prevalent outcomes. Relationships between current housing and recent injecting risk behaviors were more consistent, and fit with an extensive literature demonstrating associations between housing and a range of injection risk behaviors,^{48,53,65,84,85} although it is notable that specific relationships have varied across studies. In our study, unstably housed participants were significantly more likely than their stably housed counterparts to report both recent public injecting and recent receptive sharing of injecting equipment other than syringes. Andia et al.⁸⁴ likewise demonstrated that among Puerto Rican PWID homelessness was not associated with sharing syringes, but was associated with sharing other injecting equipment. Our results are consistent with previous research demonstrating that homeless PWID are more likely to inject in public spaces⁴³; and that public injecting is associated with frequent and hasty injecting and the sharing

of injecting equipment.^{38,43,86,87} Homelessness among PWID leads to their spending more time in environments where risk behavior is elevated⁸⁷ and, consequently, BBV acquisition is more likely.^{43,57} It follows that stable and affordable housing should decrease injecting risk behaviors among PWID, which may in turn reduce the risks of BBV transmission.

Although provision of stable housing can only ever be one component of the broad social policies required to impact homelessness among PWID,⁶⁹ safe, secure housing nevertheless has the potential to increase the well-being and social capacity of this group.⁸⁸ In terms of physical well-being, access to housing can facilitate general health benefits, including better nutrition and improved hygiene. Stable housing located in areas removed from established drug markets also minimizes the potential for drug-related harm, particularly the harm arising from injecting; and allows an individual to distance themselves from their using peers in the 'street' environment. The stability provided by secure and appropriately located housing also provides the opportunity for dependent substance users to look beyond their immediate survival to the consideration of longer-term issues, such as treatment, employment, education, health, and relationships, enhancing the individual's capacity to access basic life opportunities.⁸⁸

This study has several limitations. The response rate among this sample was 39 %, within the range of all years of ANSPS conduct⁶³; in terms of age, gender, and patterns of drug use, the overall profile of participants is typical of the broader population of Australian NSP clients.⁶² It is possible that participants under-report illegal or socially sensitive risk behaviors or stigmatized status such as homeless,⁸⁹ although the reliability of self-report data from PWID is acceptable,⁹⁰ and ANSPS self-completion reduces social desirability bias.⁹¹ The associations demonstrated between housing stability and a range of demographic and risk characteristics are correlational only; the cross-sectional nature of our data precludes definitive statements on the temporal or causal nature of any such relationships.

In conclusion, our results clearly demonstrate that housing instability, both current and historical, is characteristic of substantial proportions of PWID in Australia; and that up to two thirds of this group report a history of at least one episode of sleeping rough. The notion of 'homeless careers', in which homelessness is seen as a dynamic trajectory, is well illustrated by the chronic and cyclical nature of repeated episodes of various forms of homelessness reported by our participants; and the factors which distinguished stably and unstably housed NSP clients were consistent with those reported previously—male gender, incarceration, Indigenous origin, and risky injecting practices. The extensive existing literature documenting the entrenched disadvantage and poor physical and mental health of substance-dependent homeless people; the sizeable representation among this population of other marginalized groups including ex-prisoners; and the economic burden engendered by their patterns of service utilization necessitate consideration of and funding for increased supply of secure, affordable public housing in locations removed from established drug markets and serviced by health, social, and welfare support agencies. Development of such policies and programs would provide a solid foundation from which the Australian Government might achieve its target of halving homelessness by 2020.⁵⁸

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