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Drug Use and Harms among Rural and Metropolitan Injecting Drug Users: Findings from the Rural Injectors Project

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DRUG USE AND HARMS AMONG RURAL AND METROPOLITAN INJECTING DRUG USERS: FINDINGS FROM THE RURAL INJECTORS PROJECT

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ABBREVIATIONS

AHS	Area Health Service
ATSI	Aboriginal or Torres Strait Islander
BBVI	Blood-borne viral infection
GP	General practitioner
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
IDRS	Illicit Drug Reporting System
IDU	Injecting drug users
IDUQOL	Injection Drug User Quality of Life scale
NDARC	National Drug and Alcohol Research Centre
NSP	Needle and syringe program
NSW	New South Wales
MMT	Methadone maintenance program
QOL	Quality of life
SD	Standard deviation

EXECUTIVE SUMMARY

There are numerous harms associated with injecting drug use to both individuals and community, including blood-borne viral infections and overdose. Although there is a plethora of research examining these phenomena among injecting drug users, the research has been focused on metropolitan dwelling injecting drug users (IDU), with very few studies including rural IDU. Therefore the current study aimed to examine: patterns of drug use, injecting harms and blood-borne virus infection (BBVI) risk; needle and syringe procurement; drug service utilisation; and BBVI testing among rural and outer metropolitan IDU. Given the range of psychosocial factors that may compound harms in rural areas, suicide attempts, hepatitis C-related discrimination and quality of life were also examined.

A cross-sectional survey, using an interviewer administered structured questionnaire, was conducted in 11 different areas across NSW. Participants were recruited through needle and syringe programs (NSP), snowballing techniques and advertisement.

Two hundred and sixty IDU were interviewed: 164 rural and 96 metropolitan. Age, gender, education and employment were similar for rural and metropolitan participants. Both samples reported use of a range of drugs, but rural participants were less likely than metropolitan participants to report daily heroin use (2% vs. 10%), but more likely to report having injected morphine (50% vs. 21%) in the last six months. Similar proportions reported using a needle/syringe after another person. Rural participants were less likely to report use of NSPs (36% vs. 80%), and reported a significantly longer period of time between BBVI testing. Fewer than half the sample reported having experienced a barrier to treatment, but there was no difference between the two groups.

More than a third of the sample had previously attempted suicide, but this was not associated with region. Those who had attempted suicide tended to be younger than those who had not. Recent (preceding 12 months) hepatitis C-related discrimination was reported by 24% of the sample, with no difference between regions. Discriminatory incidents most commonly occurred in healthcare settings. Participants had a mean global quality of life 59.4 (SD 22.3). Rural participants had a lower global quality of life score than metropolitan participants (56.1 vs. 64.5).

Samples of rural IDU are similar to metropolitan samples, although they report some differences in patterns of drug use. Quality of life, however, was lower for rural IDU. Service provision, including access to new injecting equipment, BBVI testing and drug treatment was found to cause considerable problems for rural IDU. These issues warrant further consideration.

1. BACKGROUND

Injecting drug users (IDU) are at increased risk of a number of harms associated with illicit drug use. These include increased risk of: blood-borne viral infections (BBVI), such as HIV, hepatitis C, hepatitis B (Crofts & Aitken, 1997; Dore et al., 2003; Heron & Campbell-Lloyd, 2000) and other injection-related infections (Binswanger et al., 2000; Aitken & Higgs, 2002; Aboltins et al., 2005); fatal and non-fatal drug overdose (Warner-Smith et al., 2001; Kaye & Darke, 2004); drug dependence and poly-drug use (Darke & Hall, 1995); and mental health problems (van Beek et al., 2001; Baker et al., 2005). To understand the prevalence of, and risk associated with, these harms, there has been a plethora of research into injecting drug use, in part fuelled by apparent escalations in harms (e.g. Hall et al., 1999a; MacDonald et al., 2000; Law et al., 2001); and the disproportional amount of harm caused by problematic drug use, especially heroin use, to both the individual and society (Hall et al., 1999b). However, much of this research has centred on IDU living in capital cities or the larger regional cities within close proximity to the capitals. Although this is in part due to a larger proportion of injecting drug users residing in metropolitan rather than rural areas (Hall et al., 2000), there remains a dearth of knowledge on rural IDU and related harms, especially in NSW, the most populous state and the state comprising the greatest proportion of dependent heroin users (Hall et al., 2000).

1.1. Illicit drug use in rural areas

The National Drug Strategy Household Survey found that during the decade 1988-1998 illicit drug use, as measured by lifetime and recent use, had increased in rural and regional areas, and duration of drug use was higher in metropolitan than in rural and regional areas (Williams, 2001). However, such surveys may under-represent injecting drug users, as they are less likely to dwell in conventional households, more likely to be itinerant, homeless or incarcerated and, given the stigmatised nature of injecting drug use, may be unwilling to identify as an injector (Hall et al., 2000). This latter point may be confounded in rural areas. Moreover, Australia recently underwent dramatic drug market changes, prompted by a sudden and unexpected decline in heroin availability (Day et al., 2003b; Weatherburn et al., 2003), which led to consequent changes in patterns of drug use in major drug market locales (Topp et al., 2003; Degenhardt et al., in press).

Although market changes have thus far been shown to have less demonstrable impact on smaller drug market locales (Smithson et al., 2004; Degenhardt et al., 2005), such changes may have impacted on any similarities or differences previously observed and increased disparity between regions. Different patterns of drug use could also represent different harms and different needs in terms of service provision.

1.2. Injecting-related harms

In addition to different patterns of drug use, rural IDU may be disadvantaged and at greater risk of injecting-related harms due to a range of inter-related factors including limited service provision, increased stigmatisation and discrimination, and social and geographic isolation. Access to new injecting equipment has been identified as important factors influencing BBVI risk (e.g. Ross et al., 1994; Maher et al., 1998; Southgate et al., 2003), although, more importantly, fear of being identified as an injector, especially by police, is a reported barrier to needle and syringe program (NSP) use in regional areas (Spooner et al., 1996; Miller, 2001; Day et al., 2003c). IDU also experience stigmatisation and (Hunt & Derricott, 2001; Day et al., 2003a), possibly compounding this problem, especially in rural or regional areas where anonymity may be difficult to maintain.

Studies from the United Kingdom have found associations been needle and syringe program proximity and needle and syringe sharing and NSP utilisation. A Welsh study found that rural IDUs living within five miles of a NSP program reported high attendance, whereas those living further away were not attending (Keene et al., 1993). The study also found that those who attended the NSP were significantly less likely to share needles and syringes (Keene et al., 1993). Similarly, a study of metropolitan IDU in Glasgow found that sharing injecting equipment was significantly associated with living more than one mile from an NSP (Hutchinson et al., 2000).

1.2.1. BBVI prevalence

Concerns regarding NSP access and risk behaviours, outlined above, have been borne out in the limited research on IDU in rural and regional Australia. A Victorian study comparing rural and metropolitan IDU found a lower HCV (41% vs. 68%, respectively) prevalence, but higher incidence (17.4 vs. 8.8 per 100 person years, respectively) among

rural and metropolitan IDU (Aitken et al., 1999). Although the difference in incidence failed to reach statistical significance (possibly due to insufficient power), the pattern is indicative of more rapid HCV spread in the rural community. Likewise, a North Queensland study found that 68% of the sample of IDU recruited in Cairns, Queensland, reported using injecting equipment after another person in the preceding month (Spooner et al., 1996), a significant BBVI risk factor. This figure compares to 31% reporting this behaviour in the national NSP survey during a similar period, predominantly carried out in capital cities or large metropolitan areas (MacDonald et al., 1997). There are, however, no similar data available for NSW, the state containing the largest number of heroin users (Hall et al., 2000) and where patterns of injecting drug use may differ (Stafford et al., 2005). However, one study of Northern NSW found the incidence of illicit drug use (excluding cannabis) among the pregnant women in the region to be ten times higher than in metropolitan areas (Richardson et al., 2001).

1.2.2. Overdose

Data from the late 1990s indicated that overdose deaths were increasing rapidly across Australia and that this increase was apparent in regional, as well as metropolitan NSW (Darke & Ross, 2000) and Victoria (Gerostamoulos et al., 2001). Similarities in the demographics and the circumstances of death have also been noted in these two jurisdictions (Darke & Ross, 2000; Gerostamoulos et al., 2001). These data suggest that at the population level there is little difference between rural and metropolitan IDU in terms of overdose.

1.3. Psychosocial factors

1.3.1. Suicide

Suicide has been found to be high among heroin users: according to Darke and Ross (2002) heroin users were 14 times more likely than their peers to die from suicide. They also found that lifetime prevalence of attempted suicide was between 17-47% for those entering or in treatment; this compares to less than five percent for community samples (Darke & Ross, 2002). Recently, the Australian Treatment Outcome Study (ATOS), a study of treatment seeking heroin users, reported the lifetime prevalence of attempted

suicide to be 34% with 13% having attempted suicide in the preceding 12 months (Darke et al., 2004).

Suicide has also been found to be higher among young males living in rural areas. For example, Wilkinson and Gunnell (2000) found that for the period 1988-1997, in areas where the population is less than 20,000, the suicide rates among males aged 15-24 years was consistently 50% higher than those dwelling in more populated areas. Similar findings have been reported, showing clear differences in the prevalence of suicide among young rural males (Morrell et al., 1999; Dudley et al., 1997; Dudley et al., 1998). However, the prevalence of suicide has been shown to be higher among women aged 25-34 years living in a metropolitan area (Wilkinson & Gunnell, 2000). A higher suicide rate among metropolitan dwelling females compared to females living in rural areas, and a higher rate among rural males compared to metropolitan males, has also been reported (2000). However, Morrell et al found no statistical difference in suicide between rural and metropolitan Australian born males and a protective effect for rural women (Morrell et al., 1999). Whether or not such geographical differences also occur among rural injecting drug users (who may or may not be predominantly heroin users) is unclear.

1.3.2. Hepatitis C-related discrimination

Hepatitis C-related discrimination has been found to be widespread in Australia (Anti-Discrimination Board of New South Wales, 2001). A study of people living with hepatitis C found that 40% of participants had experienced hepatitis C-related discrimination in the two years preceding interview (Day et al., 2004). Hepatitis C-related discrimination is an important issue because it has been found to have a negative impact on emotional and physical health of those affected (Hopwood & Treloar, 2003). Also, because most Australian studies have found that it occurs within healthcare settings (Crofts et al., 1997; Anti-Discrimination Board of New South Wales, 2001; Treloar et al., 2002; Day et al., 2003a; Hopwood & Treloar, 2003), the quality of care individuals receive, and possibly their future engagement with health services, may be affected.

The NSW Anti-Discrimination Board's enquiry into hepatitis C-related discrimination identified rural and regional areas as places of concern due primarily to issues of confidentially in small communities (Anti-Discrimination Board of New South Wales,

2001). These issues may be compounded for IDU, who may already experience discrimination. Research into factors related to hepatitis C-related discrimination has shown that discrimination is more common among current IDU, even when compared to past IDUs (Day et al., 2004; Hopwood & Treloar, 2003). Indeed, evidence from heroin users in Sydney suggests that much hepatitis C-related discrimination is conflated with drug user discrimination (Day et al., 2003a).

1.3.3. Quality of life

There is currently little data on IDUs' quality of life (QOL). Given the possible differences between rural and metropolitan IDU in terms of social isolation, stigmatisation and service provision, described above, QOL may differ between the two groups. However, QOL measures have been typically developed in terms of the general population or are specifically related to health, and such instruments may not be sensitive enough to detect changes in the QOL of IDU or differences between different groups of IDU. One notable exception is the Injection Drug User Quality of Life (IDUQOL) scale developed in Canada specifically for use with IDU (Brogly et al., 2003). The IDUQOL uses a subjective approach and, unlike most standardised QOL measures, allows for the individual to select the aspects that construct their QOL and to weight the importance of each aspect (Brogly et al., 2003). Importantly, the instrument allows for assessment of prioritisation of life areas. The instrument has previously been shown to have good psychometric properties (Brogly et al., 2003) and to work well in an Australian context (Kimber & Day, 2003).

1.4. Study aims

Given the paucity of knowledge concerning injecting drug use and associated risk in rural communities in NSW, the current study was undertaken to investigate these issues. Specifically, the study aimed to:

1) examine patterns of drug use and injecting harms including blood-borne virus risk;
2) examine needle and syringe procurement;
3) examine BBVI testing among IDU residing in rural areas in NSW; and
4) compare them with a group of metropolitan IDUs.

The study also aimed to investigate a number of psychosocial factors among a sample of IDU living and using drugs in rural areas and outside the major drug markets. Specifically, it examined:

1) the prevalence of attempted suicide;
2) hepatitis C-related discrimination; and
3) quality of life using the IDUQOL.

2. METHODS

2.1. Subjects and recruitment

Seven Area Health Services (AHS) in NSW (5 rural and 2 metropolitan), incorporating 11 discrete towns/areas, were invited to participate in the research (Table 2.1). In NSW, AHS are classified as either metropolitan or rural. Participants were therefore classified as either rural or metropolitan according to the AHS where they resided.

Table 2.1: Area Health Services and locales where the survey was conducted

Area Health Service (AHS)*	Locality
Rural	
Greater Murray AHS	Albury, Wagga Wagga
Macquarie AHS	Dubbo, Wellington
Mid-Western AHS	Bathurst, Orange
Northern Rivers AHS	Coffs Harbour
Southern AHS	Goulburn
Metropolitan	
Nepean AHS	Penrith
Northern Sydney AHS	Ryde, Manly

*Prior to NSW Health's 2005 amalgamation of services

In all areas recruitment was facilitated through the NSP coordinators. Recruitment occurred through a variety of means, including: direct approach at NSP; fliers distributed through the NSPs, pharmacies and drug treatment services; and notices in syringe vending machines and in 'fitpacks' (packs of 1ml needle/syringes distributed through NSPs and pharmacies). Service outreach and snowballing (word-of-mouth) was also used wherever possible, depending on the service and clients.

2.2. Instrument

The questionnaire was specifically designed and pilot tested to elicit a range of information on demographics, drug use history, patterns of drug use, blood-borne virus risk behaviour, treatment seeking and service access. Questions were largely derived

from existing monitoring surveys (see MacDonald et al., 1997; Darke et al., 2002) and previous research (Day et al., 2002).

A series of questions on psychosocial factors were also included. Questions on HCV-related discrimination and self-harm were also derived from the literature and previous research conducted in these areas (Day et al., 2003a; Darke et al., 2004). Five additional general open-ended questions about service access to NSPs and drug treatment, policing, overdose and drug use were also asked. The questionnaire was piloted in one site and found to be acceptable with only minor amendments required, thus all data were included in the analysis.

The IDUQOL was used to assess QOL. A validation study of the instrument indicates that it has good psychometric properties (Brogly et al., 2000). The IDUQOL is interviewer administered and consists of titled picture cards depicting 17 life areas and a response form. The life areas are: health, housing, partnership, family, money, resources, education, sex, friends, drugs, drug treatment, feeling good, being useful, independence and free choice, leisure activities, cure for AIDS, and spirituality.

2.3. Procedure

In each area interviewing was conducted over two to three days and was carried out by trained interviewers employed by the National Drug and Alcohol Research Centre. Only in one location were interviews also carried out by the AHS service employees, due to expanded recruitment in the area and limited service utilisation and thus a greater need for outreach style recruitment.

2.3.1. Injecting Drug Users Quality of Life (IDUQOL) scale

The IDUQOL begins by asking participants to rate their overall quality of life on a scale of 0 to 10, where 0 is the worst they can imagine and 10 is the best they can imagine. They are then asked to describe the five areas in their life that currently most determine their quality of life. The participant is then shown the life area cards and asked to select the cards depicting their five most important areas and asked to describe what each of these means to them (life area selection). Participants are then asked to apply a weighting

to each of these areas by distributing 25 chips across the five cards, according to their relative importance, where more chips indicate a life area is more important (life area weighting). Participants are then asked to rate these life areas according to how well each life area is progressing on a scale of 0 to 100, where 0 is the worst they can imagine and 100 is the best they can imagine (life area rating). In the final part of the IDUQOL, participants are asked once again to rate their overall QOL on a scale of 0-10.

2.4. Ethics

All participants were volunteers, provided informed consent and were reimbursed $30 for travel and time expenses. The reimbursement of participants is considered both necessary and ethical in illicit drug use research (Marsh & Loxley, 1992; McKeganey, 2001) and has not been found to coerce participants (Fry & Dwyer, 2001) or adversely affect drug use or data quality (Festinger et al., 2005). The research was approved by the Human Research Ethics Committees of the University of NSW and the seven AHSs involved in the study.

2.5. Data analysis

Continuous variables were assessed using *t*-tests. Medians are reported where data were highly skewed and the Mann-Whitney U statistic employed. The chi square (χ^2) statistic was used for univariate analysis of categorical data. Multiple linear regression, using backward elimination, was used to assess independent relationships between global IDUQOL scores and independent variables found significant on univariate analysis. All data were analysed using SPSS version 11.01.

3. RESULTS

3.1. Sample characteristics

Two hundred and sixty participants were recruited into the study: 164 from the rural areas and 96 from the urban areas. The sample were a mean age of 33 years (SD 8.95; range 17-60) and the majority of the sample were male (57%). Fifty-six percent of the sample had completed year 10 and 83% were unemployed or on a pension at the time of interview. The majority of the sample were born in Australia (91%) and 22% identified as being either Aboriginal or Torres Strait Islander. There were no differences between the two groups on any of these variables (Table 3.1). Similarly, there was no statistically discernible difference between rural and metropolitan participants in terms of incarceration history, engagement in sex work or drug treatment history (Table 3.1).

Table 3.1: Sample characteristics of rural and metropolitan IDU

	Rural	Metropolitan	Total
Mean age (SD)	32.5 (8.59)	33.2 (9.57)	33 (8.95)
% Male	60	51	57
% completed year 10	42	48	56
% unemployed/pension	80	88	83
% born in Australia	93	88	91
% ATSI	25	18	22
% ever incarcerated	52	61	55
% ever been paid for sex	23	26	24
% ever been in drug treatment	84	83	84

Participants had been living in the same area for a median of 15 years (range <1-56). Metropolitan participants were significantly more likely to have been living in the area for longer than rural participants (22 vs. 10.5 years, U statistic 5236.5, $p<0.001$).

3.2. Drug use history and patterns of use

Mean age of first drug injection was 18 years for both groups. The majority of the metropolitan sample had first injected within the Sydney metropolitan area (83%), but the rural sample reported initiating injecting in a broader range of geographical locations, including rural NSW (42%), the greater Sydney metropolitan area (35%) and an interstate capital city (10%).

There was no clear pattern of drug use across the two samples and both rural and metropolitan IDU reported using a range of drugs. Although almost all the sample had injected heroin, and approximately two thirds had injected it in the six months preceding interview, few participants had used heroin daily, although this behaviour was more common among the metropolitan sample (Table 3.2). However, morphine use was higher among rural compared to metropolitan participants, with half the rural participants reporting injecting morphine in the six months preceding interview (Table 3.2).

According to participant reports, amphetamines appear to be the drug most commonly used by both samples, and patterns of drug use were generally similar across the two groups, with 81% of the rural and 73% of the metropolitan participants reporting amphetamine injection in the six months preceding interview. Rural IDU were slightly more likely to use amphetamine more frequently than metropolitan IDU (14 vs. 5 days in the preceding 6 months; Table 3.2); although, as with other drugs, use was sporadic, and only 6% and 5% of rural and metropolitan IDU respectively had used daily in the last six months (Table 3.2). Cocaine use was low among both groups (Table 3.2), although almost three-quarters of the metropolitan participants had injected it in the six months preceding interview, compared to a little over half the rural participants.

Benzodiazepines use was also common, especially among rural participants. Although approximately a third of both samples had injected benzodiazepines, metropolitan IDU were more likely to reporting having injected them in the preceding six months (Table 3.2).

Table 3.2: Patterns of drug use

Drug	Rural	Metropolitan	p
Heroin			
% ever used	92	95	
% ever injected	90	95	
% injected last 6 mths	60	62	
Median* no. days used in last 6 mths	1	3	
% used daily	2	10	.006
Morphine			
% ever used	80	66	.009
% ever injected	77	52	<.001
% injected last 6 mths	50	21	<.001
Median* no. days used in last 6 mths	1	0	<.001
% used daily	4	4	
Amphetamine			
% ever used	98	96	
% ever injected	97	94	
% injected last 6 mths	81	73	
Median* no. days used in last 6 mths	14	5	.049
% used daily	6	5	
Cocaine			
% ever used	66	82	.005
% ever injected	54	74	.002
% injected last 6 mths	11	16	
Median* no. days used in last 6 mths	0	0	
% used daily	0	0	
Benzodiazepines			
% ever used	85	72	.016
% ever injected	33	35	
% injected last 6 mths	9	21	.008
Median* no. days used in last 6 mths	4	2.5	
% used daily	9	16	

*Range: 0-180

3.3. Overdose

Just under half (n=117) the sample reported ever experiencing a heroin overdose, with no difference between the rural and metropolitan samples (43% vs. 51%, respectively). Only 14 participants reported having overdosed in the preceding 12 months. Participants reported overdosing in a variety of locations, most commonly in a public location (30%), at home (28%), friend's or family home (18%), car (11%), motel or similar (5%) or other location (7%). The latter category consisted of a range of locations including shooting rooms (n=3). There were no significant differences between the two samples (Table 3.3).

Table 3.3: Location of last heroin overdose

	Rural (%)	Metropolitan (%)
Home	18 (28%)	14 (29%)
Friend's home	15 (23%)	5 (10%)
Public locations (street, park, public toilet, train)	16 (25%)	18 (38%)
Car	7 (11%)	6 (13%)
Motel or similar	4 (6%)	2 (4%)

3.4. Injecting and blood-borne virus risk

The majority of participants had last injected at home (64%) or a friend's place (23%). Metropolitan participants were more likely than rural participants to report last injecting at home (75% vs. 57%; $\chi^2 = 7.86$, p=0.005), whereas rural participants were more likely than metropolitan participants to report last injecting at a friend's home (28% vs. 13%; $\chi^2 = 7.84$, p=0.005). Other locations included cars (6% vs. 2%, rural and metropolitan respectively) and public places (6% vs. 3%, rural and metropolitan respectively), but these did not differ statistically between the two groups.

The proportion of participants reporting the use of a needle or syringe after another person was similar for both groups, with 17% of the rural sample and 18% of the metropolitan sample reporting having done so in the preceding month. Likewise, the proportion reporting sharing other injecting equipment in the preceding month was similar (45% and 42% of rural and metropolitan respectively).

Of the 42 participants who reported sharing a needle or syringe, 68% (65% rural and 69% metropolitan) had done so with their sex partner and 21% (23% rural and 19% metropolitan) had used a syringe after a close friend. There was no difference between the two groups. Participants' (48%) or a friend's (38%) home was the most common place where sharing occurred; this was similar for both groups (44% rural and 53% metropolitan respectively, and 40% rural and 33% metropolitan respectively). Similar proportions of both samples (38% and 41% rural and metropolitan respectively) also reported reuse of their own needle or syringe, with more than a third (39%) of the total sample doing so.

3.5. Equipment procurement

Rural participants reported procuring injecting equipment from more sources than metropolitan participants (Table 3.4). In the metropolitan area, over three quarters (80%) reported that NSPs were the place where they usually procured needles and syringes, whereas 36% of the rural sample reported NSPs as the usual source of injecting equipment (χ^2=44.63, 1*df*, p<.001). In contrast, significantly more rural participants (18%) reported usually using pharmacies compared to metropolitan participants (5%; χ^2=8.64, 1*df*, p<.01). Vending machines were used by both rural (11%) and metropolitan (6%) participants. Significantly more rural participants (11%) than metropolitan participants (1%) relied on another user for their injecting equipment (χ^2=8.32, 1*df*, p<.01). 'Other' sources included dealers and bulk postal orders.

Table 3.4: Places where new needles and syringes were most commonly accessed

	Rural (%)	Metropolitan (%)	p
NSP (primary outlet)	36	80	<.001
Pharmacy	18	5	.003
Another user	11	1	.004
Vending machine	11	6	ns
Hospital	8	2	ns
Secondary outlet*	13	1	.002
Other	4	6	ns

*includes community health care centres and outreach vans

3.6. Blood-borne virus testing

According to self-report, almost all those interviewed had been tested for a BBVI (95% HIV and HCV, 87% HBV), the proportions of which were similar across both groups. Those who reported being tested for HIV had last been tested a median of 26 weeks prior to interview (1-572 weeks), but the median time since testing was twice that for rural IDU (40, range 1-572 weeks) compared to metropolitan (20, range 1-312 weeks; U statistic 4922; $p<0.001$). Only two participants believed themselves to be HIV positive, both of whom were from rural areas. The median time since HCV testing was 32 weeks (1-624), although rural participants reported a longer median time since testing (52, range 1-624 weeks) than metropolitan participants (24, range 1-364 weeks; U statistic 5130; $p=0.001$).

Almost half (47%) the sample reported having been vaccinated against HBV and this was similar for both groups (46% rural vs. 48% metropolitan). Although more rural (17%) than metropolitan (7%) participants reported being unaware of a HBV vaccination, the difference was not statistically significant.

3.7. Risk networks

Rural and metropolitan participants reported similar numbers of sexual partners and similar numbers of injecting partners (Figure 1). Similar proportions also reported having been paid for sex (23% vs. 26%, respectively).

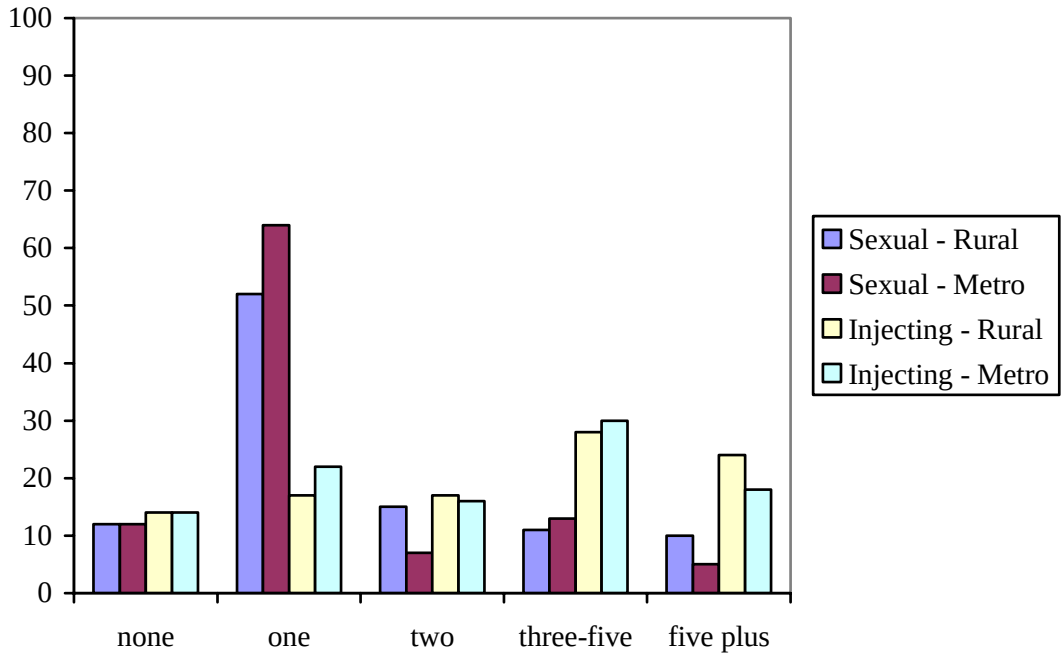

Figure 3.1: Number of injecting and sexual partners reported by rural and metropolitan respondents in the preceding 12 months

3.8. Treatment seeking and barriers to treatment

The majority of participants (84%) had previously received treatment for their drug use and just over half (52%) were receiving treatment at the time of interview. Forty-two percent, or 81% of those in treatment at the time of interview, were receiving pharmacotherapy for heroin dependence. Similar proportions of rural and metropolitan participants had previously received treatment or were currently in treatment (Table 3.5). Previous treatment was also reported by similar proportions of males and females, but females were more likely than males to report currently being in treatment (70% vs. 55%, $\chi^2 = 5.18$, $df = 1$, $p=0.02$; Table 3.5). Older participants tended to report both previous treatment ($\chi^2 = 14.50$, $df = 1$, $p=0.001$) and current treatment ($\chi^2 = 6.59$, $df = 1$, $p=0.037$; Table 3.5).

Table 3.5: Previous treatment, current treatment and barriers to treatment by region, gender and age group

Variable	%Previous treatment	%Current treatment	%Reported treatment barrier
Region			
Rural	84	63	49
Metro	83	59	39
Gender			
Males	85	55	48
Females	82	70*	42
Age			
≤24 years	68	46	34
25-35	90	60	49
>36	88**	70*	48

*p<0.05; **p<0.01

Having previously received treatment was not associated with region, gender or age (Table 3.5). One hundred and nine (42%) of the total sample reported experiencing a barrier to treatment, but there were no differences between those who reported barriers to treatment in terms of region, gender or age (Table 3.5). Heroin was the drug for which participants most commonly reported a barrier to treatment (68% of those reporting a barrier), followed by amphetamines (11%), benzodiazepines (6%) and cannabis (3%; Figure 3.2).

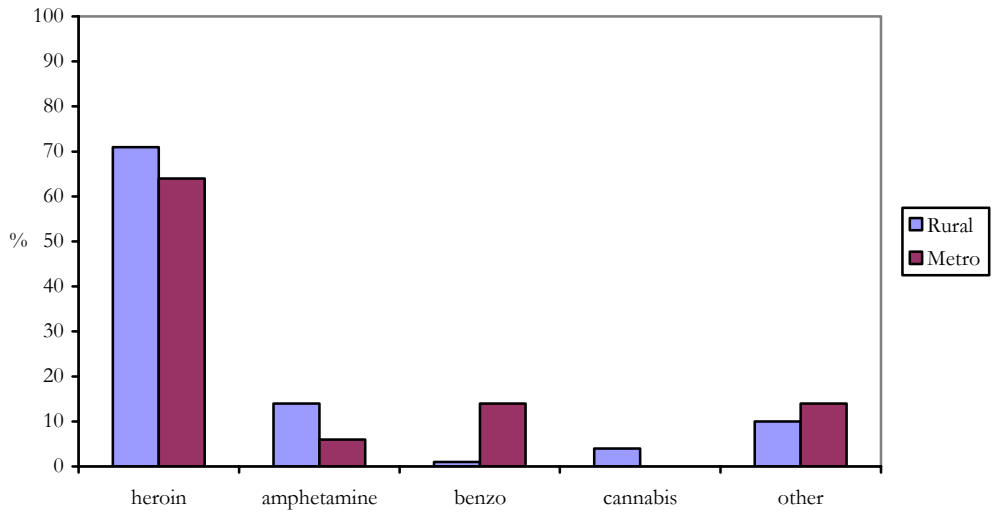

Figure 3.2: Most commonly reported drug for which rural and metropolitan participants reported a barrier to treatment

Pharmacotherapy was the treatment most commonly for which a barrier was reported (27%), followed by counselling and rehabilitation (both 15%), a general practitioner (13%) and inpatient detoxification (11%; Figure 3.3). Waiting lists were the most commonly reported perceived barrier (Figure 3.4).

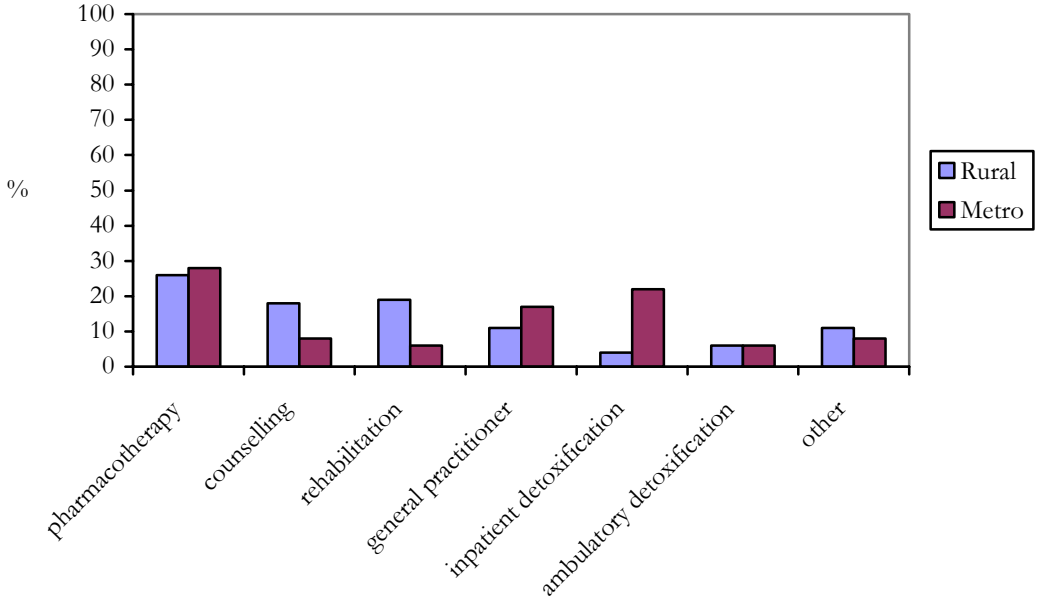

Figure 3.3: Treatment mode to which rural and metropolitan participants perceived a barrier

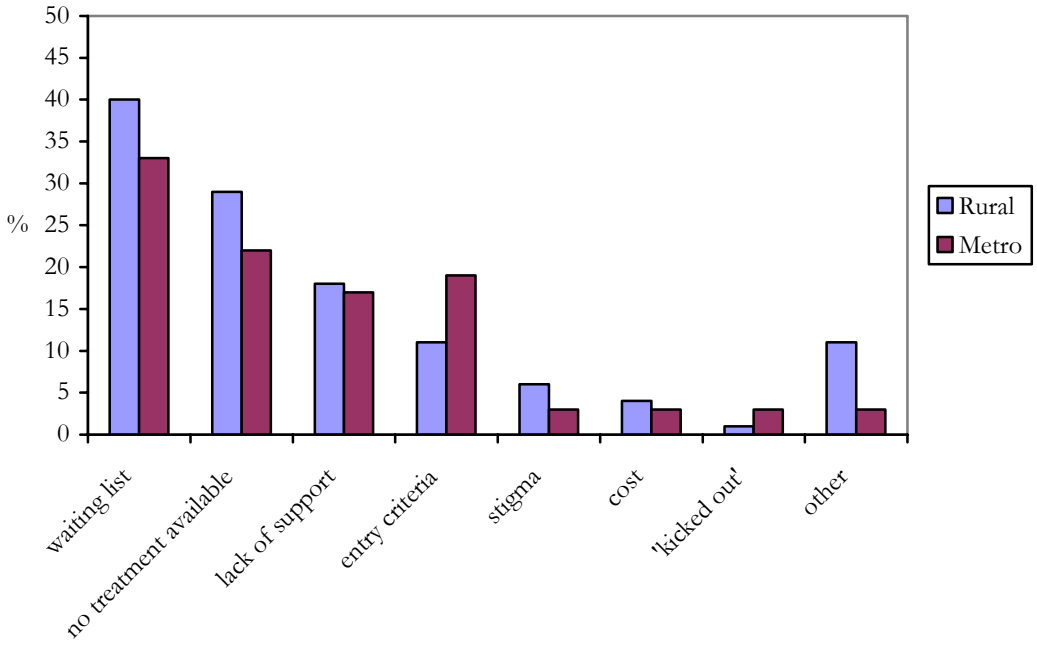

Figure 3.4: Perceived barriers to treatment

3.9. Suicide attempts

Ninety-three (36%) reported having previously attempted suicide, the median number of times was two (range 1-100) and the last attempt had occurred a median of 36 months (range 1-676) prior to interview. Ten percent of the sample attempted suicide in the preceding 12 months.

Having ever attempted suicide or having done so in the preceding 12 months was not associated with gender or area (i.e. rural or metropolitan). However, there was an association between age and time since last suicide attempt. The median number of months since the last suicide attempt was 13.5 for those aged 24 years or less, 45 months for those aged 25-34 and 60 for those 35 years or older. Similarly, those who had attempted suicide in the preceding 12 months tended to be younger than those who had not (28 vs. 33 years; t_{257}=2.76, p<0.01).

3.10. Hepatitis C-related discrimination

Of the 156 participants who reported being HCV positive, only 38 (24%) reported experiencing HCV-related discrimination in the preceding 12 months. Similar proportions of those living in rural areas (28%) reported discrimination as those living in a metropolitan area (22%). There was also no significant difference between males (27%) and females (23%), and across the different age groups (<25 years = 25%; 25-34 years = 27%; ≥35 years = 24%).

For those who reported HCV-related discrimination, the majority believed their discrimination to be due in part (34%) or full (61%) to their drug user status; only two of the 38 participants (5.3%) believed the discrimination was due entirely to their HCV status. Fifty incidents of discrimination were reported, perpetrated by a variety of people or settings, most commonly healthcare workers (Figure 3.5).

Having experienced HCV-related discrimination in the preceding 12 months was not associated with either region (rural 28%, metropolitan 22%) or gender (males 27%, females 23%). The mean age was the same (35 years) for those who reported discrimination and those who did not.

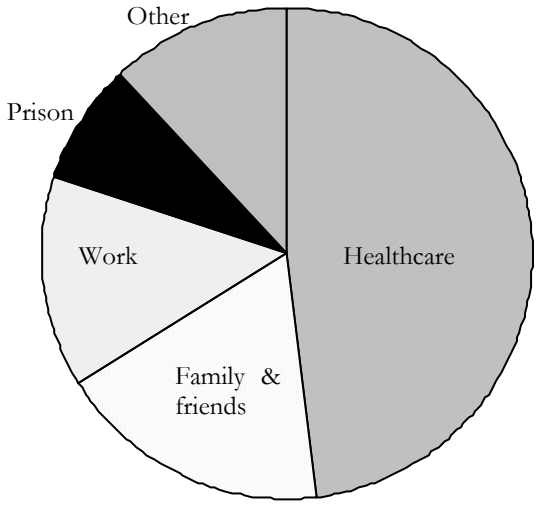

Figure 3.5: Discrimination setting

3.11. Quality of life

The IDUQOL was completed by 246 participants. The mean initial QOL rating (how would you rate your quality of life on scale of 0-10) was 5.7 (SD 2.1), and the final QOL rating was 5.9 (SD 2.1). The mean difference was 0.24, which was significant (t_{245} = 2.52, p=0.013), indicating a small, but statistically significant, increase in participants' perception of their quality of life at completion of interview.

The most commonly selected life areas were family, health, money, housing and partnerships (Table 3.6). Rural participants were less likely to choose housing compared to those from the metropolitan areas (42% vs. 69%, χ^2 = 7.07, *df* =1, p>0.01), but were more likely to select "independence" (23% vs. 12.5%, χ^2 = 4.45, *df* =1, p>0.05). Females were more likely to select "family" (86% vs. 65%, χ^2 = 14.71, *df* =1, p>0.001), while males were more likely to select "friends" (40% vs. 25%, χ^2 = 6.02, *df* =1, p=0.014). Females were also slightly more likely than males to select "drug treatment" (26% vs. 15%, χ^2 = 4.52, *df* =1, p>0.05). There were no differences between the three age groups (<24, 25-35 and ≥36 years).

There was little variation in the rating of different selected life areas between rural and metropolitan participants (Table 3.6). Rural participants gave a lower mean rating to money (33.1 vs. 47.0, t_{121} = 2.80, p =0.006) and to partnerships (53.8 vs. 71.1, t_{117} = 3.03, p =0.003; Table 3.6).

Table 3.6: Life areas determining participants' current quality of life

Life area	Total sample selecting this life area (%)	Rural selecting life area (%)	Metropolitan selecting life area (%)	Mean Weighting (SD)[a]	Mean rating of life area – total (SD)[b]	Mean rating – rural (SD)[b]	Mean rating – metro (SD)[b]
n	**246**	**150**	**96**				
Family	182 (74)	109 (73)	73 (76)	7.1 (3.1)	68.1 (27.3)	68.1 (25.6)	68.2 (30.0)
Health	131 (53)	74 (49)	57 (59)	4.9 (1.9)	64.9 (25.2)	63.5 (24.4)	66.5 (26.4)
Money	125 (51)	76 (51)	49 (51)	4.9 (3.5)	38.7 (27.7)	33.1 (24.9)	47.0 (29.7)*
Housing	120 (49)	63 (42)	57 (59)*	4.9 (2.1)	54.9 (32.2)	52.6 (30.1)	57.6 (34.6)
Partnership	117 (48)	65 (43)	52 (54)	5.7 (2.2)	61.5 (32.1)	53.8 (33.1)	71.1 (28.2)*
Feeling good	90 (37)	60 (40)	30 (31)	4.6 (1.8)	47.6 (27.0)	46.5(26.3)	49.5 (28.6)
Friends	82 (33)	55 (37)	27 (28)	4.0 (1.9)	66.1 (27.4)	64.1 (29.2)	70.2 (23.3)
Drugs	62 (25)	39 (26)	23 (24)	3.9 (2.6)	60.4 (27.6)	57.6 (26.3)	55.0 (29.7)
Being useful	52 (21)	37 (25)	15 (16)	4.2 (1.8)	54.3 (30.3)	50.8 (30.8)	63 (28.3)
Spirituality	49 (20)	29 (19)	20 (21)	4.8 (1.5)	53.0 (30.5)	46.8 (29.3)	61.3 (30.8)
Drug treatment	49 (20)	29 (19)	20 (21)	4.8 (2.4)	61.9 (27.0)	60.3 (28.3)	64.3 (25.5)
Independence	47 (19)	35 (23)	12 (13)**	4.0 (2.1)	63.5 (29.1)	61.8 (29.0)	68.1 (29.9)
Education	33 (13)	23 (15)	10 (10)	4.6 (2.5)	55.5 (34.9)	48.7 (34.5)	71.0 (31.9)
Sex	28 (11)	18 (12)	10 (10)	3.4 (1.7)	61.3 (33.9)	57.8 (33.4)	68.0 (35.6)
Leisure activities	27 (11)	17 (11)	10 (10)	3.5 (1.5)	52.0 (29.0)	47.5 (28.7)	59.3 (29.5)
Resources	25 (10)	15 (10)	10 (11)	3.5 (2.0)	48.0 (29.4)	45.7 (29.3)	51.5 (30.7)
Cure for AIDS	8 (3)	6 (4)	2 (2)	4.6 (2.7)	51.1 (46.2)	49.8 (55.0)	7.1 (5.0)

[a] Weighting out of a possible 25; [b] Rating out of a possible 100

*p<0.01; **p<0.05

The global IDUQOL score was 59.4 (SD 22.3). Differences between global IDUQOL scores demographics, drug use and harms are presented in Table 3.7. Rural compared to metropolitan participants reported a lower global IDUQOL score (56.1 vs. 64.5, t_{244} = 2.93, p =0.004), as did those who reported having attempted suicide in the preceding 12 months compared to those who had not (48.5 vs. 60.6, t_{244} = 2.61, p =0.010). There was no significant difference in global IDUQOL between males (58.2, SD 22.8) and females (62.0, SD 21.7) or in terms of age group (<25 = 59.1, SD 25.1; 25-34 = 56.7, SD 22.0; ≥35 = 61.9, SD 20.8).

Oddly, those who believed themselves to be HCV positive had a slightly higher global IDUQOL score than those who did not (61.65 vs. 55.3, t_{244} = 2.10, p =0.037; Table 3.7). Given the unusual and unexpected nature of this relationship, the relationship was investigated further by assessing the relationship between the selection, weighting and rating of "health" as a life area and being HCV positive. HCV positive participants were more likely to select "health" as a life area (56% vs. 43%, χ^2 = 4.90, *df* = 1, p=0.027), but both weighting (4.8 vs. 5.1, respectively) and rating (62.5 vs. 67.4, respectively) of health were similar to those who were HCV negative or unaware of their status.

Multiple linear regression was conducted to determine independent variables associated with global IDUQOL scores. Variables entered into the model were those significant on univariate analysis (Table 3.7), which included rural status, ever reporting suicide and HCV status. Age was also added to the model, given its strong relationship to HCV status (MacDonald et al., 2000; Hocking et al., 2001). Rural status (β = 0.16, p = 0.015) and attempted suicide (β = -0.16, p = 0.013) were retained in the final model ($F_{2, 223}$ = 6.20, p = 0.002), although the model explained only a very small proportion of the variance (adjusted R^2 = 0.044).

3.12. Open ended responses

3.12.1. Drug treatment

A range of issues were raised by participants. One of the most salient points which resonated across AHSs was the need for more treatment services. Participants claimed the range of services was limited with long waiting lists. Privacy was also noted as an issue in terms of treatment access. Where services were available, there was a perception that these services needed to be more broadly advertised (i.e. those in need were not necessarily aware of the services).

Many participants reported drug use to be highly stigmatised, particularly in rural areas, where many participants complained of their community's views of drug users and pharmacotherapy clients: "People still treat you like a leper". Participants also complained about the attitude of health service providers (including drug health services and pharmacies where methadone is dispensed), particularly a lack of respect by methadone prescribers. In addition (and possibly as a result of this), participants often felt isolated and secretive about their drug use and this impacted on service access: "I have considered detox, but not many people know I use, so it would be very exposing".

Table 3.7: Global IDUQOL scores by demographics, drug use and harms

Variable	n	Mean IDUQOL (SD)
Region		
Rural	150	56.1 (22.0)
Metro	96	64.5 (22.0)*
Gender		
Males	138	58.2 (22.8)
Females	108	61.0 (21.7)
Age		
≤24 years	58	59.1 (25.1)
25-35	87	56.7 (22.0)
>36	101	61.9 (20.8)
ATSI		
ATSI	53	63.6 (21.2)
Other	192	58.1 (22.4)
Born in Australia		
Yes	224	59.3 (22.1)
No	22	60.1 (24.3)
Education		
<year 10	109	62.3 (20.2)
≥year 10	137	57.1 (23.7)
Employment		
Employed or otherwise[#]	42	60.7 (24.0)
Unemployed/pension	204	59.1 (22.0)
Previous incarceration		
Yes	136	61.3 (20.9)
No	109	57.0 (23.9)
Currently in drug treatment		
Yes	123	59.9 (23.6)
No	82	58.3 (20.7)
Injected daily last month		
Yes	84	58.8 (22.9)
No	158	59.3 (22.1)
Heroin overdose in previous 12 months		
Yes	14	50.3 (29.3)
No	232	60.0 (21.8)
Shared needle/syringe in previous month		
Yes	38	57.9 (23.6)
No	193	59.8 (22.4)
HCV positive		
Yes	147	61.6 (21.4)
No	81	55.3 (22.8)**
Attempted suicide in previous 12 months		
Yes	25	48.5 (24.9)
No	221	60.6 (21.7)*

[#]Includes full-time, part-time, casual, students, home duties etc

*p<0.01; **p<0.05

3.12.2. Needle and syringe programs

Many rural participants commented on the expense of buying new needles/syringes from vending machines and reported the $2 cost to be a major disincentive and access barrier. There were also complaints about the location of vending machines being in obvious spots in town centres, outside the main drug using areas of the community. These problems were compounded by poor public transport, especially as many people did not have access to private transport.

Some participants reported being apprehensive about accessing the NSP because they were on methadone maintenance treatment, thereby often relying on others to procure equipment for them. Rural participants also reported embarrassment about accessing NSPs, with a number of participants stating this created added tension around equipment procurement. Participants reported arguing with their peers regarding whose turn it was to collect sterile injecting equipment.

There were many complaints about finding used injecting equipment lying around the town: "Not all needles are returned, some people just dump them because it's too far away." The location of disposal bins was also a problem, as complaints about non-discreet locations were prevalent. One rural participant stated, "No one wants to be seen dropping off needles", which highlights problems with disposal and the stigma that accompanies drug use.

4. DISCUSSION

4.1. Main findings

This study found a number of important similarities between rural and metropolitan IDU in terms of overall sample characteristics. The only notable demographic difference between the two samples was that the metropolitan sample reported living in their current location longer than the rural sample. Rural IDU reported initiating injecting in a broader range of locations, with more than half the participants recruited in rural areas having initiated injecting in metropolitan areas. There were also notable differences in patterns of drug use, with amphetamine being more commonly reported in the current study.

Reports of hepatitis C-related discrimination and attempted suicide were similar between the rural and metropolitan participants and the prevalence was similar to that reported for other IDU (Day et al., 2003a; Darke et al., 2004). Rural participants, however, tended to score lower on the IDUQOL than metropolitan IDU.

4.2. Patterns of drug use

Participants from both samples reported diverse patterns of drug use. Amphetamine was the drug most commonly injected by both groups, though only five and six percent reported daily use. This is in contrast to the national NSP survey (National Centre in HIV Epidemiology and Clinical Research, 2004) and the Illicit Drug Reporting System (IDRS) (Roxburgh et al., 2004), where in 2003 the majority of participants reported heroin as the last drug injected. Although a number of regional sites are included in the national NSP survey, the majority of participants tend to be from the larger metropolitan areas, whereas the IDRS specifically recruits from large metropolitan drug markets.

Rural IDU tended to report less frequent drug use overall, especially of heroin, but higher levels of morphine use. The use of morphine is consistent with recent increases in morphine prescriptions nationally and increases in illicit morphine injecting by regular IDU in metropolitan settings (Degenhardt et al., submitted). The changes may also be due to recent reductions in heroin availability, which lead to significant changes in drug

use (Degenhardt et al., 2005). It is likely that rural markets, which are probably supplied via the larger markets, may have been more vulnerable.

4.3. Service access

There were clear differences in terms of needle and syringe procurement, with fewer rural IDU obtaining injecting equipment from NSPs compared to metropolitan IDU. Reasons for this difference can be inferred from the responses participants gave to the open ended questions. For many rural IDU, the location of the NSPs were unsatisfactory and made access prohibitive, and numerous participants cited a lack of transport as a key barrier, but issues related to stigmatisation were also evident. Although pharmacies provide a valuable safety net for needle and syringe procurement, they typically cannot provide the information, education and support that fixed site NSPs offer. It is of particular interest to note that a number of rural participants expressed concern over a lack of treatment knowledge and options. Greater access to NSPs and improved links between services could help to redress this divide. Nevertheless, providing health services in rural areas, particularly for highly stigmatised behaviours such as injecting drug use, is challenging due to limited service space, retention of experienced staff and low population density.

4.4. Risk behaviours

The prevalence of needle and syringe sharing, a significant BBVI risk factor, was similar to that reported in the national NSP study and did not differ between the two samples. This is interesting, as proximity to NSP – clearly a problem for some IDU in rural areas as evidenced by open ended responses – has previously been found to be an independent predictor of sharing (Keene et al., 1993; Hutchinson et al., 2000). Needle and syringe sharing is a highly stigmatised behaviour even among IDU and this may have resulted in social desirability bias and under-reporting, though any such bias would be expected in both samples. Another possible explanation is peer organised distribution in rural areas as a result of the difficulties in accessing government run services. Rural participants reported distributing sterile injecting equipment and collecting used injecting equipment amongst their IDU peers; this role was typically engaged in by older users concerned about the injecting practices of their younger peers.

Due to a number of reasons, largely ethical considerations, BBVI testing was not possible in the current study. The vast majority of the sample had been tested for BBVI, although the data suggest that optimal testing frequency (six monthly for HCV) is not occurring among regular IDU in these areas. Rural IDU were significantly more likely to report a longer period of time since the last test than metropolitan IDU. There are a number of possibilities for this disparity, including lack of access to testing, particularly anonymous (i.e. being unknown to the service provider) testing and non-judgemental testing (Aitken et al., 2002). Distance to appropriate services may also be a barrier as was stated for both NSP and treatment access. These possibilities remain speculative, as additional information was not evident in the open ended responses.

Regular testing is important in terms of reducing disease transmission and providing general risk assessment, health promotion and early treatment. The lower levels of testing among rural IDU may explain the difference between the two groups in terms of HCV self-reported prevalence, although the disparity is consistent with Victorian research. It is also of interest that less than half the sample reported having ever been vaccinated against HBV. Although self-report is a less than ideal measure of vaccination coverage, the figures are consistent with serological studies (Anderson et al., 1994; MacDonald et al., 2004). IDU remain a key target group for HBV vaccination (Heron & Campbell-Lloyd, 2000) and more effort is required to increase vaccination knowledge and coverage.

4.5. Psychosocial factors

The prevalence of attempted suicide was similar to that found in other research (Darke et al., 2004) and there was no apparent difference between rural and metropolitan participants. There were also no apparent gender relationships, but younger age was associated with having attempted suicide in the preceding 12 months. This relationship is similar to broader Australian patterns of suicide and attempted suicide, where youth suicide has been found to be increasing (Lynskey et al., 2000) and has been associated with substance use (Lynskey et al., 2000; Beautrais, 2000).

Hepatitis C-related discrimination in the preceding 12 months was reported by almost a quarter of those who believed themselves to be HCV positive. This is similar to a sample

of heroin users recruited in Sydney (Day et al., 2003a). Similarly, in the majority of cases, participants also believed that the discrimination was related to their drug use rather than HCV status. Reports of discrimination occurring most commonly in the healthcare setting is also consistent with other research (e.g. Anti-Discrimination Board of New South Wales, 2001; Day et al., 2003a; Hopwood & Treloar, 2003). As has been discussed elsewhere (Day et al., 2003a; Day et al., 2004), this is problematic as it may to lead to a reduction in healthcare access among IDU, including access to BBVI testing and other primary health activities and treatment referrals (both drug treatment and hepatitis C treatment). Although there was no difference between the rural and metropolitan samples, the discrimination reported may also reflect a lack of experience (and willingness) among healthcare providers to deal with IDU (Day et al., 2003a), given that all samples were recruited outside the major drug markets and therefore in areas where service providers are likely to have had less exposure to IDU.

4.5.1. Quality of life

The global IDUQOL score was 59.4. This score is similar to that of a sample of Canadian IDU recruited in major cities and drug markets reported by Brogely et al., (2003) who scored a mean of 53.9. Rural participants scored lower on the IDUQOL compared to metropolitan participants and this relationship persisted in multivariate analysis. The reasons for this are not entirely clear, but rural participants also reported significantly lower ratings for two of the five most commonly selected life areas: partnership and money. Thus the variation between the two groups may in part be explained by disparity in these two life areas.

Attempted suicide was the only other factor related to a lower IDUQOL score. The relationship between having previously attempted suicide and QOL is perhaps not surprising as suicidal behaviour is a feature of depression and highly correlated with stressful life events.

Although being HCV negative was associated with a lower quality of life, this relationship did not persist after controlling for other factors including age. HCV status has previously been found to be strongly related to length of injecting career (e.g. MacDonald et al., 2000), with younger users, especially those with chaotic patterns of

drug use, at greater risk of infection (van Beek et al., 1998). The univariate relationship may therefore reflect the stage at which an individual is at in their injecting career. That is, those in the earlier stages may be less (subjectively) in control of both their drug use and related problems than those in the later stage of their injecting careers. This is in contrast to previous research which found those unaware of their HCV status had a higher health related QOL than those aware of their status, irrespective of symptoms and sequelae (Rodger et al., 1999). The IDUQOL, however, is a global measure of quality of life. This lack of relationship may reflect the lack of centrality of HCV in IDUs' lives (for a discussion of IDUs' perception of the inevitability of HCV see Davis et al., 2004), especially given the often asymptomatic nature and protracted natural history of HCV and its prevalence among IDU (MacDonald et al., 2000).

The impact of HCV on quality of life would also depend on the meaning a positive status holds for the individual concerned. Furthermore, the impact of HCV on quality of life might be mediated by psychosocial factors (e.g. support from others). The impact of HCV on quality of life may change over time as an individual adjusts to their health status leading to changes in subjective appraisal (Leplege & Hunt, 1997). They may change health-related behaviours – for example, decrease alcohol consumption or improve their diet – and they may also change their focus to those things most important to them such as family. In this way, HCV as a predictor of quality of life may be influenced by the importance of, and functioning in, other life areas.

The instrument was well received by participants, as has been found elsewhere (Brogly et al., 2003; Kimber & Day, 2003). Determining which life areas were most important to them, and evaluating their functioning in each area, possibly allowed participants to prioritise areas for action and helped them bring things into perspective. This process appeared to be helpful regardless of whether a participant's global score was low or high. Even though the global quality of life changed little pre- to post-life area evaluation, participants seemed to gain a sense of clarity over their situation and perhaps became less overwhelmed by their overall feelings/evaluation of their life situation. This may well have given them some direction with regard to improving their quality of life. Participants also seemed to enjoy the opportunity of explaining their personal meanings for the different life areas and why things were important to them. The IDUQOL is very much a client focussed activity: it allows the participant to determine for themselves what

is and is not relevant to their life and functioning. This sense of being listened to and re-orienting oneself to an internal value system (validation) may have some therapeutic value and warrants further investigation.

4.6. Limitations

This study has a number of limitations. The study relied on a convenience sample of IDUs from rural and outer metropolitan areas, who may not be representative of these broader populations. IDUs are a hidden population (particularly in rural areas) and it is not possible to obtain a random sample. However, a range of recruitment strategies were utilised, and sample characteristics were similar between the two groups and also to other samples of IDU. One important limitation of the study is the lack of serology and therefore the study's inability to accurately determine the prevalence of infection among the sample. However, the relatively high proportion of people reporting to be HCV positive is consistent with findings from the national NSP survey and studies of IDU conducted in rural Victoria. Furthermore, serology is less important in the case of HCV discrimination, as one needs to be aware of their status to interpret a discriminatory event. Other research has also suggested that it is knowledge of one's HCV status, more so than the infection itself, (in the absence of more advanced liver disease or other sequelae) that impacts on psychosocial factors (Rodger et al., 1999).

Only limited information on HCV-related discrimination and mental health were collected. The majority of HCV-related discrimination incidents were related to drug use rather than HCV *per se,* and it may therefore have been better to ask all participants about discrimination in general and then specifically about HCV discrimination. Furthermore, incidents of discrimination could not be validated, although the *perception* that a discriminatory incident has taken place is likely to have a similarly deleterious impact on the individual as *real* (or validated) discrimination.

Although the IDUQOL was found to work well with the current sample, given the low HIV prevalence but high HCV prevalence among Australian IDU (National Centre in HIV Epidemiology and Clinical Research, 2004), the inclusion of a hepatitis C card rather than the AIDS card may be more relevant and shed further light on the relationship between HCV and global quality of life. There are also no population norms

on which to compare the sample. However, mean aggregate global quality of life for populations living in developed countries is 75 (SD 2.5) (Cummins, 2003), therefore substantially higher than that found for IDU in this sample using the IDUQOL. Although this comparison is clearly problematic (given the lack of validation between the instruments used) the disparity is perhaps not surprising, given dependence, mental health problems, lower levels of employment and education.

IDU research is beset by challenges irrespective of location, but as set out by Spooner and colleagues (1997) it is particularly challenging in rural areas. Recruitment for the current study was facilitated by NSP workers and services and, despite snowballing attempts, the study is biased towards those using those services. In some cases NSP workers had restricted access to their client groups due to inadequate resources to conduct outreach and high staff turnover. Conducting research without the assistance of service providers in the area would be difficult; working with the NSP provided a mutual opportunity. Well funded, intensive research is needed in rural areas.

4.7. Conclusions

The current study has found a number of similarities between rural and metropolitan IDU. Notable differences between the two groups included more frequent amphetamine injecting among metropolitan IDU. Daily heroin injection was low in both groups, although slightly more common among metropolitan IDU, whereas morphine use was more common among the rural sample. Rural participants also reported accessing needles and syringes from a wider variety of locations compared to metropolitan participants, including less reliance on primary NSP services. Although there was not quantitative difference between the two samples in terms of barriers to treatment, the open-ended interviews revealed service provision – including access to new injecting equipment, BBVI testing and drug treatment – caused considerable problems for rural IDU. These issues deserve closer consideration.

The two samples were also similar in terms of psychosocial factors, although rural IDU tended to have lower quality of life scores than metropolitan IDU. This may be influenced by a number of factors including problems related to service provision and stigmatisation of drug use.

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