ABSTRACT

Background
Homelessness affects many people in contemporary society with consequences for individuals and the wider community. Homeless people experience poorer levels of general physical and mental health than the general population and there is a substantial international evidence base which documents multiple morbidity. Despite this, they often have problems in obtaining suitable health care.

Aim
To critically examine the international literature pertaining to the health care of homeless people and discuss the effectiveness of treatment interventions.

Design of study
Review and synthesis of current evidence.

Method
Medline (1966–2003), EMBASE (1980–2003), PsycINFO (1985–2003), CINAHL (1982–2003), Web of Science (1981–2003) and the Cochrane Library (Evidence Based Health) databases were reviewed using key terms relating to homelessness, intervention studies, drug misuse, alcohol misuse and mental health. The review was not limited to publications in English. It included searching the internet using key terms, and grey literature was also accessed through discussion with experts.

Results
Internationally, there are differing models and services aimed at providing health care for homeless people. Effective interventions for drug dependence include adequate oral opiate maintenance therapy, hepatitis A, B and tetanus immunisation, safer injecting advice and access to needle exchange programmes. There is emerging evidence for the effectiveness of supervised injecting rooms for homeless injecting drug users and for the peer distribution of take home naloxone in reducing drug-related deaths. There is some evidence that assertive outreach programmes for those with mental ill health, supportive programmes to aid those with motivation to address alcohol dependence and informal programmes to promote sexual health can lead to lasting health gain.

Conclusions
As multiple morbidity is common among homeless people, accessible and available primary health care is a pre-requisite for effective health interventions. This requires addressing barriers to provision and multi-agency working so that homeless people can access the full range of health and social care services. There are examples of best practice in the treatment and retention of homeless people in health and social care and such models can inform future provision.

Keywords
alcoholism; health care delivery; homeless persons; mental health; primary care; substance related disorders.

INTRODUCTION

Homelessness is a complex concept, embracing many types of insecure housing status.1 ‘Rooflessness’ is one form of homelessness, covering rough sleepers, newly arrived immigrants and victims of fire, floods or violence. Homelessness also refers to ‘houseless,’ people such as those living in emergency and temporary accommodation including hostels and those released from psychiatric hospitals, custodial establishments or foster homes with nowhere to go. People living in insecure or inadequate and overcrowded or substandard accommodation such as those staying with friends or relatives on a temporary basis, tenants under notice to quit, those whose security is threatened by violence and squatters are also homeless. However, such households are often ‘concealed,’ as people may involuntarily share accommodation if they cannot secure or afford separate housing.2,3

While some experience homelessness once, more commonly people experience repeat (or periodic) homelessness.4–6 Relationship breakdown, physical or sexual abuse, lack of qualifications, unemployment, alcohol or drug misuse, mental health problems, contact with the criminal justice system, debt, lack of a social support network,7 institutionalisation as children, or death of a parent during childhood8 are all risk

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factors for homelessness. Institutional factors for homelessness include fragmentation of services and lack of community programmes for difficult-to-serve people. The number of households accepted by councils in England as unintentionally homeless and in priority need in the quarter ending September 2004 was 32 220. The lack of national level data in many European countries, together with differences in definition and approach to data collection and measurement, makes it impossible to arrive at a single statistic for homelessness in Europe.

This review synthesises the effectiveness of health interventions targeting homeless people in the developed world, focusing on homeless populations in high income countries. Reviewing health interventions among homeless populations living in extreme poverty in low income countries is beyond the scope of this synthesis.

METHOD
This paper reviews the current evidence base relating to the health care of homeless populations. The search strategy has been described elsewhere. Briefly, Medline (1966–2003), EMBASE (1980–2003), PsycINFO (1985–2003), CINAHL (1982–2003), Web of Science (1981–2003) and the Cochrane Library (Evidence Based Health) databases were reviewed using key terms relating to homelessness, ‘and’ intervention studies, ‘and’ [drug misuse ‘or’ alcohol misuse ‘or’ mental health]. The review was not limited to publications in English. It included searching the internet using key terms, and grey literature was also accessed through discussion with experts.

Reviewing such a topic was a significant challenge as homelessness is a broad subject area. Additionally there is an acknowledged paucity of trials evaluating the effectiveness of health interventions for homeless people. Therefore it was not possible to undertake a meta-analysis of the data. Rather, we synthesised qualitatively consistently recurring themes with greater weight attached to findings from primary research of higher quality. Space constraints precluded the inclusion of asylum seekers, although they often access health services for homeless people and discussions pertaining to provision of social or housing services.

RESULTS

Morbidity
Homeless people, particularly rough sleepers, have a higher rate of serious morbidity compared to the general population. Many homeless people present to health services with multiple morbidity due to exposure to risk factors, complications of illicit drug or alcohol overdose, or from delay in presentation to services. Additionally homeless people, especially men, have high rates of imprisonment and offending. The most common health needs of homeless people relate to drug dependence, alcohol dependence or mental ill-health, and dual diagnosis is frequent. Polydrug use is common, especially heroin and cocaine. A recent cross-sectional survey of 389 homeless people in London showed that 372 had used an illicit substance within the last month. The two most popular illicit drugs used were heroin and crack cocaine. Four out of five respondents reported starting taking at least one new drug since becoming homeless. Thirty-nine per cent of those who had been homeless for 2 years or less had used heroin in the last month, whereas 49% who had been homeless for 10 years or more had used heroin in the last month. Pathological gambling is more common among substance abusing homeless people than the general population, but comparable to the prevalence rate among drug-dependent populations.

Physical ill-health is also more common in homeless people. The range of health problems experienced by homeless populations is described in Box 1.

Smoking is more common among homeless populations and prevalence may be as high as 80%. Smoking, overcrowding, poor nutritional status or HIV infection predispose homeless people to respiratory disease (Box 1). The prevalence of latent tuberculosis (TB) has been reported to be between 9–79% with the prevalence of active TB to be between 1.6–6.8%. Treatment of TB entails tuberculin test screening as chest x-ray and sputum testing is not necessarily feasible. When a diagnosis is made contact tracing should take place and this is more effective through homeless shelters rather than using named person contacts. Treatment has higher completion rates if directly observed through housing programmes rather than in acute hospital settings.

Mortality
Premature mortality is higher among homeless populations. A 10-year follow up of a homeless cohort in Denmark described age and sex standardised mortality ratios of 2.8 for men; 5.6 for women; 6.0 for cause of death as suicide; 2.6 for death from natural causes; 14.6 for death from unintentional injuries; and 62.9 for unknown cause of death. Risk factors for premature death were death of the father and misuse of alcohol.
Drug dependence syndrome — most commonly heroin or cocaine

Alcohol dependence syndrome

Mental ill-health: schizophrenia, depression and other affective disorders, psychosis, anxiety states, personality disorder, earlier onset of drug misuse and severity of alcohol use

Physical trauma

- Injury
- Foot trauma — due to walking for long times in inappropriate shoes, standing or sitting for long periods leading to venous stasis, oedema and infection, frost bite, skin anaesthesia due to alcoholic peripheral neuropathy, lack of hygiene due to over wearing of unwashed clothing, or overgrown toe nails
- Dental caries due to self neglect

Adverse effects of illicit drugs

- Heroin-related death secondary to respiratory coma\textsuperscript{92,93}
- Cocaine — case reports of toxic inhalation leading to pulmonary inflammation and oedema (‘crack lung’\textsuperscript{94,95}) agitations and paranoia due to acute toxicity and thromboembolic events.\textsuperscript{96,97}

Adverse effects of alcohol overuse\textsuperscript{91}

- Cardiological — cardiomyopathy
- Neurological — peripheral neuropathy, erectile dysfunction, Wernicke’s encephalopathy, Korsakoff’s psychosis, amnesic syndrome, cerebellar degeneration, alcohol withdrawal seizures
- Gastrointestinal and hepatobiliary — hepatitis, liver cirrhosis, pancreatitis, gastritis, peptic ulceration, oesophageal varices, carcinoma of the oesophagus and oropharynx, cardiomyopathy
- Metabolic — vitamin deficiency (particularly thiamine), obesity
- Psychosocial ill-health — including depression and suicide, sexual dysfunction, alcoholic hallucinosis, marital, family or employment breakdown

Complications of injecting illicit drugs

- Blood-borne virus infections (see below)
- Skin commensals or pathogens causing septicaemia, encephalitis, endocarditis, cellulitis and abscesses or deep vein thrombosis (a combination of poor hygiene and repeated skin puncture)
- Tetanus — possibly secondary to injecting contaminated drugs\textsuperscript{98–100}

Infections

- Blood-borne virus — hepatitis B,C or HIV
- Hepatitis A\textsuperscript{101,102}
- Skin infections — cutaneous diphtheria\textsuperscript{103} impetigo, viral warts
- Secondary to louse infestations — typhus (caused by \textit{Rickettsia prowazekii}), trench fever (caused by \textit{Bartonella Quintana}) or relapsing fever (caused by \textit{Borrelia recurrentis})\textsuperscript{29,104,105}
- Fungal — most commonly tinea

Inflammatory skin conditions

- Erythromelalgia
- Pediculosis
- Seborrhoeic dermatitis
- Acne rosacea
- Eczematoid eruptions
- Xerosis
- Pruritus

Skin infestations

- Body louse
- Scabies

Respiratory illness

- Pneumonia — common pathogens \textit{Streptococcus pneumoniae}, \textit{Haemophilus influenza b}, aspiration of anaerobes or \textit{Pneumocystis carinii} (the latter occurring almost exclusively in immunocompromised patients).
- Influenza
- Minor upper respiratory infections
- Tuberculosis (often latent)
of alcohol and sedatives. Premature mortality is confirmed by German research, which considered postmortem and autopsy findings of 388 homeless people. The average age of death was 44.5 years with unnatural causes accounting for a high percentage (62.6% deaths due to intoxications). Infection was the most common natural cause of death.

**Primary care provision**

As indicated above, homeless people face a risk of marginalisation due to their age, sex, ethnic background or sexual orientation. To address these barriers, different frameworks for providing health care to homeless populations have been described. The first is the mainstream general practice that takes on an extended role (also known as 'general practice with a special interest') in primary care provision for homeless people. The second is that of the 'specialised' general practice that registers only homeless people. It is uncertain as to how many homeless people obtain care in each type of practice setting and this could be a topic for future research. Specialised general practices are usually only found in large cities and are therefore not a viable option to the problems of rural homelessness. In the UK, they have become more common, with legislation permitting trusts to employ GPs through salaried options to provide primary care in a multidisciplinary team environment. Arguably the merits of this model are that it integrates care of the homeless into mainstream general practice. Specialised general practice, however, can arguably provide more intensive and focused care for more complex cases where integration into mainstream primary care could be problematic. Therefore it is an effective setting for providing initial treatment and early rehabilitation.

There is face validity to a pathway whereby once their acute condition has stabilised and they are familiar with the primary care setting, such patients can be encouraged to register with mainstream primary care. However, such a pathway has yet to be formally evaluated. Mainstream primary care is also the only viable option to meet the primary healthcare needs of the rural homeless. Other models seek to provide primary health care to homeless populations in secondary care hospitals. Models vary from a single centralised unit to all hospital departments offering care. Social worker support appears to be a crucial factor in the success of such programmes. However, one study of 36 people in Germany showed that primary care programmes for homeless people led to a reduction in hospital admissions.

**Primary prevention interventions**

The current literature is heavily weighted towards preventing infectious diseases in injecting drug user homeless sub-populations. Primary prevention interventions to reduce the prevalence of infectious disease are shown in Box 2. An accelerated hepatitis B immunisation schedule (0, 7, 21 days), with a booster at 12 months, results in superior completion rates compared to traditional schedules with similar seroconversion rates. Homeless people should also be offered both hepatitis A, tetanus, influenza, pneumococcus and diphtheria vaccination. Homeless drug users should be encouraged to use needle exchange schemes to reduce the prevalence of blood-borne viruses. Quantifying the precise size of the effect of needle exchange programmes is difficult as the intervention is often delivered alongside others such as counselling and testing, outreach, bleach distribution and education. However, schemes limiting exchange to one clean needle for every one returned are associated with higher rates of HIV than those with no limitation. A major reason for the sustained high prevalence of hepatitis C in injectors is the sharing of injecting equipment such as spoons and filters. Health promotion should therefore encourage users to not share any injecting equipment. In the UK and other European countries this has been facilitated by providing a legal framework for distributing sterile injecting paraphernalia (alongside needle and syringe distribution) to drug users to minimise health risks, however in some countries (notably US) this contravenes federal legislation. French research demonstrated that having both needle vending machines and needle exchange programmes results in wider coverage to drug users. Reducing injecting-related risk behaviour is a health promotion priority among the homeless. This makes users aware of the risk factors for fatal heroin-related death, namely injecting alone, polydrug use, particularly the use of benzodiazepines or alcohol with heroin, and loss of tolerance after abstinence. Future programmes for peer administration of naloxone may be introduced as early evidence shows this is effective in reducing mortality from heroin-related death.
Management of drug dependence

There appears to be limited UK-based research evaluating the impact of behavioural and empowerment health promotion approaches to drug users. From the US literature common findings are assertive community treatments retain users in services but do not yield high abstinence rates, and therapeutic communities for those with dual diagnoses result in greater drug use reductions than community interventions (although both modalities reduce drug use). A US conducted randomised controlled trial found that compared to ‘usual care’, homeless crack cocaine abusers participating in an enhanced day treatment programme plus abstinent contingent work therapy and housing had statistically significant fewer positive cocaine toxicologies at 2 and 6 months, fewer days homeless in the past 2 months and more days employed in the past 30 days from baseline to 12 months. The authors summarised that homeless cocaine users can be retained and treated effectively.

Safe opiate medication substitute prescribing is now a cornerstone of the management of heroin dependence and the UK has best practice guidelines for professionals working with drug users, which are applicable to homeless drug users. This includes doctors only prescribing with the support of a drugs worker who will offer an assessment and devise a treatment plan prior to substitute opioid medication is started. There is only an established evidence base for either buprenorphine or methadone maintenance medication, which has demonstrated reduced crime and reduced drug use. Some homeless drug users present to primary care having recently moved to the area and request immediate continuation of their prescription prior to assessment. Prescriptions should only be issued on confirmation with the previous prescriber to minimise the risk of duplicate prescribing.

Prescribing injectable heroin is receiving renewed attention, for example in Switzerland where it is available to homeless people through prescribing among prison populations. However in the UK, it is recommended for drug users who have failed oral methadone treatment. This policy position is supported by the results of a recent Cochrane review which concluded that due to the non-comparability of the experimental studies included in the review there was insufficient evidence to recommend heroin prescription as a first line treatment.

Medically supervised injecting centres

International research has demonstrated that medically supervised injecting centres reduce the incidence of drug-related death; halt the increase in reported hepatitis B or C infections; reduce injecting related-risk behaviour; increase the likelihood of starting treatment for drug dependence; reduce the prevalence of discarded syringes in public places; do not increase the number of theft and robbery incidents in the area; and increase acceptance of the centres by both businesses and residents. Research from Frankfurt showed that a drug user who overdoses on the street is 10 times more likely to stay in hospital for 1 night compared to a drug user who overdoses in a safer injecting centre. This confirms the economic evaluation of deaths averted by this being comparable to other widely accepted public health measures. The benefit to homeless drug users is clear from the Sydney evaluation, in which the most common reason drug users gave for not using the centre was that they injected in their own home. Some therefore contend that homeless drug users are a priority group for medically supervised injecting centres.

Sexual health promotion

A narrative review of the literature pertaining to sexually transmitted diseases among drug users and street youth concluded that such populations were sexually active with a high rate of partner turnover, and frequently exchanged sex for money or drugs. There is a high prevalence of sexually transmitted diseases (STDs) (including HIV) among such populations. The review called for targeted special outreach STD control programmes for these populations as homeless drug users generally do not access mainstream control programmes.

There is limited evidence to inform best practice for targeted sexual health promotion interventions among homeless people. Common findings are that interventions which seek to effect attitudinal and behavioural change through interactive methods such as role-play, video games and group work lead to a lasting reduction in both risk from drugs and sexual activity. One randomised clinical trial study while evaluating the impact of a sexual health promotion intervention at reducing sexual health risk also sought to evaluate the possibility of the intervention itself initiating risky sexual activity in previously sexually inactive homeless people. It demonstrated that the intervention did not lead to an initiation of risk-taking behaviour. Further research is required to evaluate interventions targeting differing sub-populations of homeless people. Little research has been undertaken into homeless women’s perception and use of contraception. One US study demonstrated side effects, fear of potential health risks, partner’s dislike of contraception and cost as deterrents.

Management of alcohol dependence

Observational research shows homeless alcohol-dependent people to more likely have had an alcoholic parent, had more children and a lower level of
education and job qualification than housed alcohol-dependent people.37 Observational research highlighted high use of general medical or social care services by homeless alcoholics, but poor use of specific alcohol dependence services.76,77 Research among homeless women described more addiction symptoms, fewer positive effects from using alcohol, and not having an alcohol-using partner as being associated with a positive attitude to stopping alcohol. In terms of drug use, a positive attitude about stopping drugs was predicted by more drug problems, greater drug use in past 6 months, more active coping, more education, less emotional distress, not having a drug-using partner and fewer addiction symptoms.85

Observational research among homeless alcohol-dependent recovering mothers in the US identified that completion of aftercare programmes was predicted by length of residential drug treatment, length of sobriety, strong support networks and concerns about housing and parenting. Emotional instability and the severity of problems correlated with participation in the peer support group.86 Randomised controlled trial research evaluating supportive intervention programmes showed within group improvements in employment and housing stability, and decline in drinking in those followed up for up to 1 year. Recovery from alcohol dependence appears to be strongly associated with personal motivation and a supportive intervention programme. Personal motivation for recovery, rather than programme related factors, were most influential in determining outcomes.87

Such findings are similar for those service delivery intervention models for homeless co-dependent (alcohol and/or illicit substances). All improved significantly over time in terms of reduced alcohol and cocaine use, increased employment, and increased stable housing. Successful outcomes were predicted by personal lifestyle factors which included lower recent and lifetime substance use, fewer prior treatment episodes, more stable housing at baseline, fewer incarcerations, and less social isolation.88

**Management of mental ill-health**

Chronicity of homelessness is associated with the causes of mental ill-health described in Box 1.22,23,41 Homelessness and mental ill-health is more commonly associated with men, aged 20–59 years, being unmarried separated or divorced, and unemployment.86 ‘Dual diagnosis’ of mental ill-health and substance dependence occurs in approximately 20% of homeless people with mental ill-health.44,45 For some elderly homeless people, mental illness was the entry into homelessness.32 Less than one-third of homeless people with mental illness actually receive treatment.16

Assertive community treatment programmes with active case management to integrate social services with psychiatric care can shift the locus of care from crisis-oriented services.29 Compared to generic mental health community services they result in fewer psychiatric inpatient days, fewer emergency department visits, more days in community housing, more outpatient visits and significantly greater improvements in symptoms, life satisfaction and perceived health status.39,40 Given that death from overdose is common among homeless people, caution and safe prescribing should be exercised in prescribing antidepressants that are cardio or respiratory toxic.

**DISCUSSION**

In conclusion, multiple morbidity and premature mortality are more common among homeless populations. Drug dependence, alcohol dependence and mental ill health are the most frequently expressed health needs of homeless people. Internationally, there are differing models and services aimed at providing health care for homeless people. Effective interventions for drug dependence include adequate oral opiate maintenance therapy, hepatitis A, B and tetanus immunisation, safer injecting advice and access to needle exchange programmes. There is emerging evidence for the effectiveness of supervised injecting rooms for homeless injecting drug users and for the peer distribution of take home naloxone in reducing drug-related deaths. There is some evidence that assertive outreach programmes for those with mental ill health, supportive programmes to aid those with the motivation to address alcohol dependence, and informal interactive programmes to promote sexual health can lead to lasting health gain. One core theme appeared to be that the type of community intervention is less important than the fact that an intervention is offered. Residential interventions however, appear to lead to greater reductions in drug use than community interventions.

The strength of this synthesis is that it has synthesised the international evidence base pertaining to health interventions for homeless populations residing in developed countries. We have summarised the recurring themes. Our synthesis has several limitations. As homelessness is such a broad topic area it was necessary to focus the review. This precluded consideration of asylum seeking and refugee populations and those residing in extreme poverty in the developing world.

Our synthesis has several implications for future research activity. While there is some face validity to agreed good practice models of primary care provision to meet the health needs of homeless people, this area merits further formal evaluation. Also a future clinical and research challenge for health promotion activity is how to practically involve homeless people as peer trainers and mentors. Previous research has argued
that peer involvement of homeless people in health promotion activities will maximise the success of the intervention, yet such practice is not widespread.\textsuperscript{14} With respect to UK homeless populations, there is still a paucity of evaluation of health interventions that are UK based. Much of the current research has been conducted in the US. While there are clear themes that are transferable to the UK setting from some of this research, there is a pressing need for further research that takes account of homelessness in the UK context.

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**REFERENCES**

17. Wright N, Smeeth L, Heath J. Moving beyond single and dual diagnosis in general practice: many patients have multiple morbidities, and their needs have to be addressed. BJM 2003; 326(7380):512–514.

292

British Journal of General Practice, April 2006


64. Medically Supervised Injecting Centre Evaluation Committee.


67. Van Den Hoek A. STD control in drug users and street youth.


70. Van Den Hoek A. STD control in drug users and street youth.


82. Thomsen RL, Balasko KD, Benjaminse S, Petersen P. Homeless persons residing in shelters in the county of Funen I. Psychosocial characteristics and need of treatment. Ugeskr Laeg 2000; 162(9): 1205–1210.


