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Estimating infectious disease in UK asylum seekers and refugees: a systematic review of prevalence studies

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ABSTRACT

Background The prevalence of infectious diseases such as tuberculosis (TB), HIV and hepatitis B in the UK asylum seeker and refugee population is currently uncertain.

Methods Systematic review of published and unpublished studies.

Results Five studies met the inclusion criteria. Three studies reported the prevalence of TB with rates ranging from 1.33 to 10.42 per 1000. The three studies reporting hepatitis B estimated rates from 57 to 118 per 1000. One study reported a prevalence rate for HIV of 38.19 per 1000.

Conclusion A small number of studies have been identified reporting prevalence rates for TB, hepatitis B and HIV that vary widely where comparisons are available. These differences may reflect true variation in risk between study populations, but are likely to be affected by sampling difficulties encountered when researching these population groups. Efforts are required to improve these difficulties which are currently limiting the validity of prevalence findings and generalizability to comparable asylum seeker and refugee populations.

Keywords asylum seekers, refugees, immigration, tuberculosis, hepatitis B, HIV

Introduction

Asylum seekers and refugees form a sizeable population in the UK. An asylum seeker is a person who has left their country of origin, has applied for asylum in the UK and is awaiting a decision on their application. A refugee is someone whose application for asylum has been accepted by the Home Office. Since August 2005, refugees are no longer granted indefinite leave to remain—they will only be granted limited leave, initially for 5 years.[1] A failed asylum seeker is someone whose asylum application has been refused and who has exhausted all rights of appeal. Throughout this review, the term 'asylum seeker' will include people currently seeking asylum and failed asylum seekers.

During 2002–2006, the UK received 262 400 asylum seekers and refugees, the second highest number received by an industrialized country in that period.[2] During 2006, the top 10 countries from which asylum seekers and refugees arriving in the UK originated were Eritrea (14.3% of the total), Iran (14.0%), Afghanistan (13.9%), Somalia (11.3%), Zimbabwe (11.0%), China (10.3%), Pakistan (9.5%), Iraq (6.8%), Nigeria (4.9%) and Sudan (4.0%).[2] During the period 2002–2006, Somalia, China, Afghanistan, Iraq and Zimbabwe remained among the top 10 countries from which asylum seekers and refugees coming to the UK originated.[3–5] The number of failed asylum seekers currently in the UK is difficult to quantify accurately. However, the number of unsuccessful asylum applicants awaiting removal from the UK as at May 2004 was estimated to be between 155 000 and 283 500.[6]

The prevalence of HIV, tuberculosis (TB) and hepatitis B is often high in the poorer countries from which many asylum seekers and refugees originate. Seventy two percentage of new cases of TB reported in England, Wales and Northern Ireland during 2005 were born abroad and the rate of TB was 25 times higher in the foreign born population than in people born in the UK.[7] Approximately 70% of the persons newly diagnosed with HIV in England, Wales and Northern Ireland, for whom country of birth information was available for 2004, were born outside the UK.[8] There is also evidence that HIV rates are higher

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among populations from Africa[9] who comprised 41% of all asylum applications to the UK in 2005.[10] The World Health Organization reports that 8–10% of the general population in much of the developing world will become chronically infected with hepatitis B.[11] In any year, 96% of new chronic hepatitis B infections in England and Wales are likely to occur in people born in countries with an intermediate or high prevalence of chronic hepatitis B infection.[8]

Once in the UK, asylum seekers and refugees face specific social problems which can exacerbate their health needs.[12–15] They tend to live in poor environments with overcrowded living conditions which can increase the risk of re-activation, exacerbation or transmission of communicable diseases. Although they are entitled to free NHS care, those seeking asylum and refugees also face specific barriers to accessing healthcare due to language difficulties and lack of familiarity with the UK health system. They may be dispersed to areas which have little experience of asylum seeker or refugee populations and which may not be equipped to meet their health needs.

In order to inform an appropriate public health response to the health needs of this patient group, it is necessary to know the prevalence of key infectious diseases. We have therefore conducted a systematic review of observational studies to identify research findings reporting the prevalence of TB, HIV and hepatitis B in the UK asylum seeker and refugee population.

Methods

Identification of studies

We included observational studies of populations residing in the UK as a consequence of seeking asylum, whether waiting for their claim to be assessed or whether the claim had been granted or had failed, where the reported outcomes included infection with TB, HIV or hepatitis B. Studies published before 1985 or relating to economic migrants who were not asylum seekers and refugees were excluded. To identify studies appropriate to the UK setting, we excluded studies in languages other than English.

The search history (Table 1) was developed in Medline (Ovid v. 10.4.1) and adapted as required for each electronic database searched; Medline (1966 to December week 1, 2005), Embase (1980 to 2005 week 49), CINAHL (Cumulative Index to Nursing and Allied Health Literature, 1982 to December week 2, 2005), HIMC (Health Management Information Consortium, December 2005), CAB abstracts (1973 to December 2005), ASSIA (Applied Social Sciences Index and Abstracts, 1987 to December 2005), ISI proceedings (1990 to December 2005), Index to Theses (1716 to December 2005), The National Research Register (December 2005) and The Research Findings Register (December 2005).

Table 1 Search history

asylum$.mp. *[mp = title, original title, abstract, name of substance word, subject heading word]*
refugee$.mp.
immigra$.mp.
migrant$.mp.
1 or 2 or 3 or 4
(infecti$ adj disease$).mp.
communicable disease$.mp.
exp HIV/
exp HIV infections/
exp tuberculosis/
exp tuberculosis societies/
exp hepatitis/
exp hepatitis B/
exp hepatitis B virus/
6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14
5 and 15
limit 16 to (English language and yr = "1985–2005")

We also searched the online catalogue of the Oxford University Refugee Studies Centre and a manual search was undertaken of the journal-based database Ethnic Minorities Health.

Grey literature sources of potentially relevant reports included organizations working with asylum seeker and refugee populations, and experts in this area (Table 2). We searched the websites of relevant organizations and reviewed key policy documents to check for further references and to identify potential new material. We attempted to contact the

Table 2 Organizations contacted during grey literature search

The Department of Health Asylum Seekers Team
The Association of Public Health Observatories
Twelve Regional Public Health Observatories
The Refugee Council
The Kings Fund
The United Nations High Commission for Refugees
The Health Protection Agency
Health Protection Scotland
HARP (Health for Asylum Seekers and Refugees Portal)
MEDACT (a charity which lobbies for improved conditions for asylum seekers and refugees)
The Terence Higgins Trust
Hillingdon PCT (covers Heathrow Airport)
Shepway PCT (covers Port of Dover)

authors of all eligible studies and bibliography lists of included papers and key reports were reviewed.

For citations identified through searching of electronic databases, we used reference management software to exclude ineligible studies based on population, disease under observation or study design, using the title and abstract where possible. The full text of the remaining studies was obtained to determine eligibility. Two authors independently extracted data from eligible studies using a piloted data extraction sheet. We extracted data on the study participants, design, methods, results and study quality. We assessed study quality using published criteria.[16]

Results

We identified 3644 unduplicated electronic records, from which 41 potentially relevant reports were identified and the full texts examined. Three eligible studies were found.[17–19] An additional two unpublished studies[20] (Harling *et al.*, unpublished work) were identified from expert and organization contacts, giving five studies of the prevalence of TB, HIV or hepatitis B in asylum seeker or refugee populations in the UK (Fig. 1). We were able to contact three of the five authors.

The studies used a variety of different instruments and sampling methods. All the studies had been conducted since 1998. Two were cross-sectional studies,[18,20] two were retrospective cohorts[17] (Harling *et al.*, unpublished work) and one was a case control study.[19] Sample sizes ranged from 196 to 44 170 reflecting the varying study designs. Three studies reported the prevalence of TB[17,20] (Harling *et al.*, unpublished work), three reported Hepatitis B[18–20] and one reported HIV prevalence.[20] Two studies sampled populations from specific national groups.[18,19] One study[18] sampled Somali families living in Liverpool and did not specifically report asylum status but did calculate the relative risk of infection with hepatitis B associated with internment in a refugee camp. As the Somali community are the second largest asylum seeker group currently entering the UK,[10] we therefore included this study as the sample was highly likely to include a large proportion of asylum seekers and refugees. A further study[19] reported hepatitis B in Yugoslav patients attending a GUM clinic. Asylum status was not quantified for this group, though it was stated that a large increase in the size of the local Yugoslav population due to conflict in the former Yugoslavia had triggered the study. This population was therefore assumed to be an asylum seeker population. The remaining three studies[17,20] (Harling *et al.*, unpublished work) were conducted on populations from a variety of countries. Table 3 summarizes the key features and results of each of the studies.

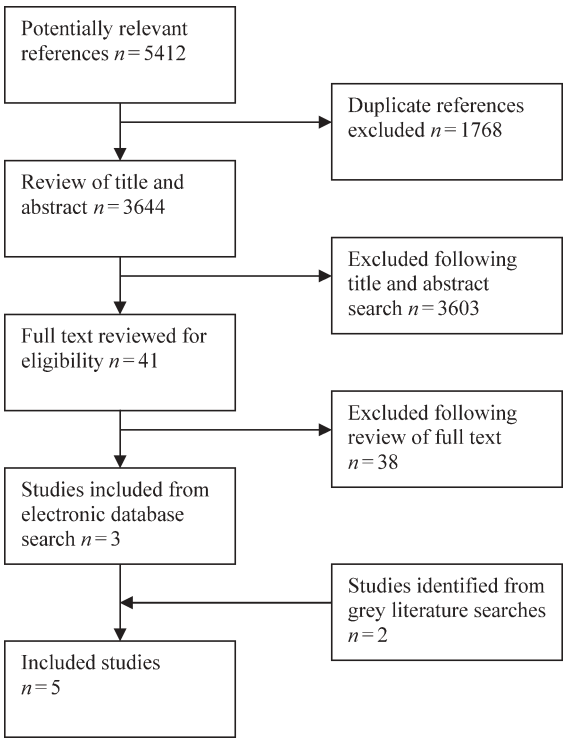

Fig. 1 Flowchart of study selection.

It was not possible to estimate a single prevalence figure for each disease due to the heterogeneity of the included studies. Studies varied in diseases reported, measurement used, population studied, study design and study quality. Studies are therefore reported descriptively with prevalence estimates synthesized narratively.

Of the three studies that reported TB prevalence, two were estimated in large samples taken at point of entry to the UK for people claiming asylum from a range of countries. These reported prevalence rates of 1.33 per 1000 (Harling *et al.*, unpublished work) and 2.41 per 1000.[17] The third study estimated TB prevalence in a PCT asylum seeker population of 288 and identified three active cases (10.42 per 1000).[20]

The study of the PCT asylum seeker population reported 11 cases of HIV from a population of 288 adults which equates to a prevalence rate of 38.19 per 1000.[20] No further prevalence rates for HIV in UK asylum seeker or refugee populations were identified from this review.

Three studies reported the prevalence of hepatitis B. One study estimated a prevalence of 57 per 1000 in the Somali community in Liverpool (with a relative risk of 1.31 among those who had been in a refugee camp).[18] The second study found that 11.8% of Yugoslavian patients attending a GUM clinic had positive hepatitis B serology (118 per 1000).[19]

Table 3 Key features and results of each study identified

Author	*Year*	*Study design*	*Population*	*Disease under observation*	*Sampling method*	*Instrument*	*Sample size*	*Prevalence*	*Study limitations*
Aweis *et al.*[18]	2001	Cross-sectional	Somali families living in Liverpool. 69% of subjects were born in Somalia and 27.2% were born in the UK; of those born abroad, 85% had been resident in the UK for less than 10 years	Hepatitis B	Snowball sampling – Somali organizations in Liverpool identified Somali households for invitation to the study	Face to face interview plus blood sampling	448 of whom 439 had adequate sera for HBsAg testing and 400 had sufficient sera for anti-HBc antibody testing	275/1000 prevalence of anti-HBc[a] antibody and 57/1000 prevalence of HbsAg[b] seropositivity; for those who have been interned in a refugee camp in Somalia relative risk of HBsAg is 1.31 (95% CI[c] 0.43–3.94 and RR of anti-HBc is 3.10 (95% CI 1.69–5.7)	Response rate not stated
Callister *et al.*[17]	2002	Retrospective cohort	Political asylum seekers arriving at Heathrow Airport 1995–1999	Pulmonary TB	All persons claming political asylum at Heathrow Airport 1 April 1995–31 May 1999 from TB endemic countries who received a screening test radiograph	Retrospective case notes review	44170	2.41/1000 (95% CI 196–293)	People arriving from non-endemic countries not included 'Political asylum seeker' not defined Those entering through official channels may have different characteristics from wider asylum seeker population
Harling *et al.* (Unpublished work)	2003	Retrospective cohort	Asylum seekers managed through an induction centre	TB	All asylum seekers managed through the Dover Induction Centre June 2002–June 2003 who were eligible for TB screening	Examination for symptoms of TB ± Heaf test ± Chest X-ray	8258	11 cases of active TB identified (1.33/1000)	Data only available for 4400 (53% of sample)

Continued

Table 3 *Continued*

Author	*Year*	*Study design*	*Population*	*Disease under observation*	*Sampling method*	*Instrument*	*Sample size*	*Prevalence*	*Study limitations*
Newell *et al.*[19]	1998	Case control	Patients from the former Yugoslavia attending a GUM clinic	Hepatitis B	All 'Yugoslavian' patients attending a London GUM clinic from April 1991 to March 1996	Case note review	196	Positive hepatitis B serology in 118/1000	HIV seropositive patients excluded from the analysis. Percentage of the sample screened for hepatitis not stated Serological markers for hepatitis B not specified
Williams[20]	2004	Cross-sectional	Asylum seekers living in the North Tees PCT area	TB, HIV and hepatitis B	All patients registering with the 'Arrival' general practice in Stockton-on-Tees April–December 2003	Initial nurse interview plus analysis of data extracted from appointments at surgery for 6 months from date of registration	349 of whom 288 were adults	HIV—11 adults out of 288 diagnosed with HIV (38.19/1000) Active TB—3 adults out of 288 had active TB (1043/1000) Hepatitis B carriage—4 adults out of 43 (93.02/1000) considered at risk	Diagnostic instruments not specified

[a]Hepatitis B core antibody.

[b]Hepatitis B surface antigen.

[c]Confidence intervals.

A further study reported hepatitis B carriage in 4 out of 43 asylum seekers and refugees from a variety of countries who attended a primary care health assessment, giving a prevalence of 93.02 per 1000.[20]

Discussion

Main findings of this study

This review identified five studies reporting the prevalence of TB, HIV or Hepatitis B in the UK asylum seeker and refugee population. The studies varied considerably in their sampling frame, study design, sample size, measurement of outcomes and follow-up.

This study found that the asylum status of patients is not routinely recorded by health services and this presents a major problem for sampling. First, there are variable definitions of the terms used by authors to define the asylum seeker and refugee population, and secondly, there are difficulties sampling this population from the total immigrant population. We found a number of papers relating to immigrant populations but not specifically to asylum seekers and refugees which are indicative of some of the problems inherent in sampling this group. One of the studies included in this review researched populations referred through the National Asylum Support Service (NASS).[20] Data are unavailable on how many asylum seekers and refugees are not eligible for NASS support or choose not to access this support. However, the Nationality, Immigration and Asylum Act 2002 restricts access to NASS support for people who apply for asylum in-country (i.e. once the person is already in the UK) as opposed to at the point of entry.[1] In 2005, 84% of asylum applications were lodged in-country.[10] Using NASS referrals as a sampling frame therefore results in a selection bias of including only participants drawn from the minority of asylum seekers and refugees who apply at point of entry. NASS also aims to cluster nationalities together for social support. In one study identified,[20] the practice of clustering nationalities led to a numeric dominance in the sample of people from Iran. Given that asylum seekers and refugees are a diverse group, it is unlikely that any group sampled through convenience will reflect the demographic profile of the wider UK asylum seeker and refugee population and this will limit the generalizability of findings. However, given reliable data, it may be appropriate to generalize such findings to other communities in the UK from the same country or from countries with similar endemic risk levels for that disease.

The prevalence rates for these diseases in the overall UK population are available from routine surveillance sources. The most recently available rates are; HIV 0.77 per 1000,[21] TB 0.15 per 1000[7] and hepatitis B 0.03 per 1000.[22] For all three diseases, the prevalence rates for the UK asylum seeker and refugee population are higher than those for the overall UK population.

What is already known on this topic

Asylum seekers and refugees form a sizeable population in the UK, and it is already known that the prevalence of HIV, TB and hepatitis B is often high in poor countries from which many UK asylum seekers and refugees originate. Once in the UK, asylum seekers and refugees face specific social problems that limit their access to healthcare. This, combined with the tendency to live close to other asylum seekers and refugees either for social or bureaucratic reasons, results in the creation of areas with a high proportion of residents having unmet health needs. To meet those needs, information on the prevalence of specific diseases is necessary but previously lacking.

What this study adds

This study has identified the prevalence rates of TB, HIV and hepatitis B in UK asylum seeker and refugee populations from five reports, and illustrated important methodological issues encountered when researching the UK asylum seeker and refugee population.

The wide range of sample sizes identified in studies in this review reflected the variety of sampling frames used. This variety was the major contributor to the heterogeneity that prevented an overall estimate of prevalence being reported. However, different sampling frames are appropriate in order to estimate health needs in different asylum seeker and refugee populations. The two studies that were able to access asylum seekers and refugees at point of entry into the UK had sample sizes of 44 170[17] and 8258 (Harling *et al.*, unpublished work), compared with 288 in the sample identified through a GP practice[20] which would be more representative of the size of population that UK primary care organizations may be trying to assess in order to provide local services. While acknowledging the limitations of some sampling frames (e.g. people referred through NASS), we recognize that a pragmatic approach sometimes needs to be adopted and convenience sampling may, in some circumstances, be the appropriate option.

The biases inherent in pragmatic sampling frames need to be recognized when assessing health need. For example, screening at the point of entry presents an opportunity to collect data as arrival in the UK is the only point at which immigration status is consistently recorded. Screening of all

new entrants from high prevalence countries for TB is currently part of UK government policy and provided the sampling frame for two of the studies included in this review[17] (Harling *et al.*, unpublished work). However, any system to screen for diseases at point of entry will only pick up the minority of asylum seekers and refugees who apply for asylum at the point of entry. Secondly, screening tests are also given only to entrants from countries having a TB prevalence above a threshold of 40/100 000 and will not pick up potential disease in populations from lower prevalence countries. Finally, many asylum seekers and refugees who do enter through official channels are subsequently lost to follow up or screening data may be incomplete due to lack of resources at the data collection point, as illustrated in one study in our review (Harling *et al.*, unpublished work). There is also evidence that new entrants develop TB after their arrival[23] limiting the potential for screening at the point of entry, and illustrating the need for ongoing engagement with healthcare services.

Screening new entrants for HIV is not part of UK health policy, although there have been calls for this to be introduced.[24] However, the issues discussed on the completeness of TB screening data would also apply to HIV screening. There is also evidence that people may be deterred from screening due to fear that a positive result could result in deportation.[25]

Limitations of this study

Methodological issues arose with all the studies included in this review (many identified by the authors themselves) which limit the generalizability of the results to the wider asylum seeker and refugee population. This review found that although there have been a number of robust studies carried out specifically in the asylum seeker and refugee population, research is often based on small samples sizes and/or drawn from convenience samples which may omit a substantial section of the population and may not be representative of the wider population. Variable definitions and difficulties engaging the study population compound the risk that results may be biased and neither generalizable nor comparable.

The study found that prevalence rates for TB, HIV and Hepatitis B are higher for the UK asylum seeker and refugee population than for the UK population overall. However, data for the whole population are reported and collected in a systematic manner and are likely to be more robust than the prevalence figures for the asylum seeker and refugee population found for this review. We would not therefore recommend that conclusions be drawn based on direct comparison until the data available for the asylum seeker and refugee population is more reliable.

Failed asylum seekers, i.e. persons whose asylum applications have been refused and who have exhausted all rights of appeal, are a group about whose health we have little information since they are largely 'invisible' to researchers. Since April 2004 failed asylum seekers are not entitled to free secondary healthcare (except in cases deemed life threatening).[26] This has led to inconsistency in the treatment of infectious diseases as some, including TB, are treated for free while treatment for others, including HIV/AIDS now incurs a charge. Restricting the access of failed asylum seekers to free healthcare has also been identified as a breach of human rights as guaranteed in international conventions.[27] None of the studies included in this review discussed failed asylum seekers or attempted to quantify their numbers. We acknowledge that this would be an extremely difficult task given the shadowy existence of this group and their possible reluctance to engage in research for fear of being deported. There is also evidence that even though failed asylum seekers are entitled to access primary healthcare services, they can face barriers to primary care as a result of misinterpretation by health professions of government regulations. The Refugee Council has found indications from it's caseload that a misunderstanding of the regulations regarding access to healthcare for failed asylum seekers is causing some GP surgeries to turn failed asylum seekers away.[28]

Conclusion

We identified limited evidence on the prevalence of TB, HIV and Hepatitis B in asylum seeker and refugee populations and in immigrant populations containing asylum seekers and refugees in the UK, with significant variation in prevalence rates between studies. Because of the methodological issues in researching this population, such as biased sampling and inconsistent use of definitions, the contribution of these studies to the assessment of health needs of the wider asylum seeker and refugee population is limited. Definitions of asylum seekers and refugees can be ambiguous which makes identifying a representative sample population difficult. This may compounded by the difficulty that some asylum seekers and refugees face in accessing healthcare.

We suggest that the methodological difficulties encountered when working with this population may have contributed to the small number of studies identified in this review. The largest studies identified sampled asylum seekers and

refugees attending TB screening programmes at the ports of entry to the UK. Despite the fact that only a minority of asylum seekers and refugees are identified at entry to the UK, the screening processes at these sites are well established though often under-resourced. Failure to maximize identification at ports represents a missed opportunity both for the collection of surveillance data and for referral for treatment where appropriate.

We would urge Primary Care Trusts, primary healthcare staff, local councils and the voluntary sector to work together to increase opportunities for asylum seekers and refugees to access health services. This could include joint projects to identify local asylum seeker and refugee populations and address barriers to accessing healthcare such as language difficulties. To aid the identification of these vulnerable groups, and to act as a baseline for change, there is a need for healthcare services to improve their routine data on migration status, country of origin and length of duration in the UK. Improved awareness among healthcare staff and their multidisciplinary colleagues of the health burden of asylum seekers and refugees will support increased promotion and uptake of services such as vaccination and screening.

As asylum seekers and refugees are not a geographically stable population, we advocate that mechanisms be established so that health information on asylum seekers and refugees that has already been collected remains with them wherever they may move in the UK. This would avoid duplication of workload when asylum seekers and refugees access primary health services and allow existing health needs to be addressed promptly. It is unclear how the anticipated NHS electronic care records will meet the needs of a population group whose eligibility for NHS care may change or be uncertain to those providing care. In these circumstances, hand held patient records may be more appropriate.

There is a need at both national and local levels for further research to be undertaken, backed by adequate resources, to establish reliable methods to identify asylum seekers and refugees and engage them in opportunities for health assessment. We need valid data to support the design, delivery and evaluation of appropriate health services. We recommend the consistent use of definitions of the asylum seeker and refugee population and better recording of asylum status within research studies. We would also advocate research into the most effective ways of sampling of immigrant populations to identify asylum seekers and refugees. We support the recommendation by the Health Protection Agency that research be undertaken to map the health needs of asylum seekers and refugees to those of the wider migrant population.[8] Although there are health issues which may be specific to asylum seekers and refugees such as barriers to accessing primary care, there are a number of potential areas of overlap between the health issues of asylum seekers and refugees and those of the wider migrant population, e.g. language barriers. In addition, some communicable diseases have high prevalence rates in European Union countries from which many new economic migrants to the UK come. For example, the rates of TB in Romania and Latvia are 146/100 000 and 68/100 000 compared with a UK prevalence rate of 12/100 000,[29] suggesting similar needs to asylum seekers and refugees with respect to accessing healthcare, and maintaining contact throughout a period of treatment.

Without further healthcare services development and research, the prevalence of communicable diseases in asylum seekers and refugees will continue to remain the subject of speculation rather than fact. This will result in continuing policy development that is not evidence-based and insufficient treatment for this vulnerable sub-section of society.

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