

BMJ Open Access to medicines by child refugees in the East Midlands region of England: a cross-sectional study

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ABSTRACT

Objectives: To explore access to primary healthcare and drug therapy by refugee children in the East Midlands region of England.

Design: Interviews with refugees with children and a control group of British parents with children.

Setting: East Midlands region of England.

Participants: 50 refugees with children and a control group of 50 parents with children.

Main outcome measures: Number of medicines used by children in the last month and the past 6 months. Health of parents and children. Registration with a general practitioner (GP).

Results: All families in both groups were registered with a GP. There was no difference in the number of children in the two groups experiencing illnesses. In the last month, 30 refugee children received 60 medicines and 31 control children 63 medicines. In the past 6 months, 48 refugee children received 108 medicines and 43 control children 96 medicines. There was no difference between the two groups of children in relation to the likelihood of receiving any medicines in either the last month ($P=0.839$) or the past 6 months ($p=0.81$). Children in the refugee group were more likely to receive prescribed medicines for the last month ($p=0.008$) and the past 6 months ($p<0.001$). They were also less likely to receive over the counter (OTC) medicines in the past 6 months ($p=0.009$).

Conclusions: The refugee children in this study in the East Midlands had access to primary healthcare, medicines and a family doctor. They were more likely to receive prescribed medicines and less likely to receive OTC medicines, especially paracetamol.

INTRODUCTION

The right to access healthcare is included in the Universal Declaration of Human Rights by the United Nations.¹ Children have the right to access healthcare and receive medicines that are scientifically evaluated for efficacy and safety.^{2 3} Research has mainly focused on clinical trials that have evaluated efficacy. Access is an area that has been inadequately explored.⁴ Problems with access to healthcare and medicines are well recognised

Strengths and limitations of this study

- Study in refugee children—a vulnerable group.
- The number of medicines used by children as a marker of access to primary healthcare.
- The refugee families all had contact with a charity dealing with refugees.

in low and lower middle income countries. The lack of free universal healthcare in many countries results in people being unable to afford consultations with health professionals, unnecessary investigations and medical treatment.^{1 5} Only one in four children with diarrhoea in India receive treatment with oral rehydration salts.^{1 6} Recent research in North America has revealed that in the USA and Canada, children of different ethnic groups or without insurance may be less likely to receive medicines.^{7–10}

Refugee children are a highly vulnerable group of children who are less likely to receive full access to medicines and healthcare.¹¹ Adult refugees are likely to experience significant problems in accessing healthcare and medical treatment.^{11–13} In the UK, all refugees are entitled to access primary healthcare, which includes registering with a general practitioner (GP).¹⁴ However, concern has been raised that both refugees and health professionals are confused about what is available and refugees may not register with a GP because they are unaware that they have that right.^{14 15}

There have been relatively few studies looking at access to healthcare for refugee children in the UK and to date there have been no studies in the UK on whether these children receive satisfactory drug therapy. We have used the term 'refugees' to include both those who have been awarded refugee status and those seeking asylum. The aim was to explore access to healthcare and drug therapy in this vulnerable group of children.

METHODS

Initial contact with both asylum seekers and refugees was made by Refugee Action (Nottingham branch). All refugees attending a Refugee Action appointment were asked if they had children and if they would be interested in participating in the research. Those parents, who Refugee Action staff identified as possibly being interested in participating in the research, were approached by the research investigators (SA and JC). Parents who then agreed to take part in the study were interviewed within a private room in the offices provided by Refugee Action in Nottingham. Written informed consent was obtained. If the participants did not speak/understand English/Arabic, then an interpreting service was used. Additional interviews were performed at a refugee drop in centre and a Muslim community centre in Derby, by one of the researchers (SA). Again refugees were asked if they had children and if they would be interested in participating in the research. The interview involved collecting the following data, using a questionnaire (see online supplementary appendix 1).

- Demographic data regarding age and number of children.
- Data regarding health of the family, children, registration with the GP and immunisation status of the children.
- Whether any of the children had been ill in the last month and if they had received any medicines, if so, from whom.
- Similar questions regarding illness and number of medicines for the past 6 months.

The interviews were performed between November 2010 and November 2011.

A control group of parents were obtained in a local shopping centre. The investigators wore University t-shirts and ID badges and were provided with a quiet area with seating within the shopping centre. Adults in the shopping centre were approached by the investigators and asked two questions: (1) Did they have children? (2) Were they British? If they answered yes to both questions and written informed consent was given, the interview was performed within the quiet seated area. Interviews with the control group of parents were performed between November 2011 and January 2012. Interviews took 10–20 min and the same questions were asked as for the refugee group.

Statistical analysis was performed by using the Mann-Whitney test for demographic data. The χ^2 test was used to compare the proportion of children with illness, and the proportion of children receiving medicines (both prescribed and over the counter (OTC)). It was not possible to perform a power calculation to determine the sample size as there was insufficient information available regarding the number of medicines used by children in the UK. It was therefore decided to aim for 50 parents in each group. This was a pragmatic decision based on discussions with Refugee Action. The research was performed as a pilot study in order to test the feasibility of

parents recalling such information and in order to obtain pharmacoepidemiological data that would be useful for power calculations for subsequent national studies.

RESULTS

Sixty-six parents of children who were refugees/asylum seekers were invited to participate. Sixteen declined (reasons not given for declining), that is, 50 agreed to participate. Thirty-eight of the 50 parents who agreed to participate were men. Most refugees were from Iraq (20), Pakistan (6), Afghanistan (4) and Nigeria (4). There were one to two refugees from each of the following countries—Ethiopia, Somalia, Zimbabwe (all two); Gambia, Iran, Tunisia, East Africa, Kenya, Sudan, Zambia, Vietnam (all one). Two refugees did not state their country of origin. The median age of the parents was 36 years (range 24–58 years) and all were born outside the UK. They had lived in the UK for a median of 6.25 years. Eighteen had been awarded refugee status. One parent had been refused refugee status and was lodging an appeal. The remaining 31 were seeking asylum but their cases had not been heard as yet. Eighteen parents reported that they had a chronic illness (four chronic back pain, four depression, two diabetes, two disabilities and six other illnesses). Eighteen parents were employed, 5 did not state their occupation and 27 were unemployed (table 1).

The control group consisted of 50 parents of whom 44 were women. Twenty-one parents declined to participate in the study. Their ages ranged from 19 to 46 years with a median age of 34.5 years. Most of the parents were fit and well but five reported health problems (three asthma and two depression/stress). Twenty-six of the control parents were employed. As expected, the control group of parents had lived in the current locality for a longer period (17.5 vs 4.75 median years). Refugee parents were more likely to have health problems.

Access to healthcare and medicines

All families were registered with a GP. There was no significant difference in the number of days since the last visit to the GP (14 vs 15 days, refugees vs control). All but one of the refugee parents and all but five of the control group families had visited the GP in the past 6 months.

Table 1 Sociodemographics of parents

	Refugee	Control	p Value
Median age (years)	36	34.5	0.12
Male	38	6	<0.001
Ill health	18	5	0.002
Employed	18	26	0.24
Number of years in current accommodation	2.3	7.4	<0.001
Number of years in current locality	4.8	17.5	<0.001

There was a significant difference ($p=0.008$) in that nine of the refugee parents stated that they had experienced difficulties visiting the GP in relation to affording the travel costs and language problems. None of the control group parents stated they had any difficulties.

Children's health

There were 117 children in the refugee group and 99 in the control group. The median number of children per family was two in both groups ($p=0.22$). The median ages of the children were 5 and 4 years, respectively (refugees vs control). The IQRs for ages of the children were 2.25–8 and 1.9–8 years, respectively, in the two groups and there was no significant difference in the ages ($p=0.13$). All but one child in the refugee group were immunised. Four children in the refugee group had chronic medical problems (congenital heart disease, asthma, cancer and poor growth). Seven children in the control group had chronic medical problems (asthma (4), epilepsy, attention deficit hyperactivity disorder (ADHD) and arthritis).

There were 29 refugee families and 30 control families with an ill child in the last month. In the last month 30 refugee children received 60 medicines and 31 control children received 63 medicines (table 2). Paracetamol was the most frequently used medicine in both groups. The majority of the medicines for refugee children were prescribed (41 out of 60). In contrast, the majority of medicines for control children were OTC medicines (37 out of 63).

In the past 6 months, all 50 refugee families and 45 control families had an ill child. In the past 6 months, 48 refugee children received 108 medicines and 43 control children received 96 medicines (table 3). Paracetamol was the most frequently used medicine in both groups. The majority of the medicines for refugee children were prescribed (83 out of 108). In contrast,

the majority of the medicines for control children were OTC medicines (52 out of 96).

There was no difference between the two groups of children in relation to the likelihood of receiving any medicines in either the last month ($p=0.839$) or the past 6 months ($p=0.81$). Children in the refugee group were more likely to receive prescribed medicines for both the last month ($p=0.008$) and the past 6 months ($p<0.001$). They were also less likely to receive OTC medicines in the past 6 months ($p=0.009$). Analgesics/antipyretics were the most frequently used medicines in the last month and the past 6 months (tables 2 and 3).

DISCUSSION

Based on the answers given by the parents, child refugees were similar to the control group of children in relation to the presence of chronic medical problems and immunisation status. The main aim of this study was to compare the number of medicines used by refugee children in comparison with control children. It was reassuring to see that the total number of medicines used by both groups of children in the past month and the past 6 months was similar. Alongside the fact that all families were registered with a GP suggests that refugee parents in this study were managing to access primary healthcare and ensure that their children receive adequate treatment. This is despite the difficulties in travel costs and language noted by refugee parents. Refugee children were, however, less likely to receive OTC medicines and more likely to receive prescribed medicines than control children.

A study in Dutch adolescents demonstrated that a higher socioeconomic status was associated with an increase in OTC drug use.¹⁶ Similar findings were reported in German children and adolescents.¹⁷ A study in the UK identified that the cost of OTCs affected only the most deprived sections of the population.¹⁸ Refugees

Table 2 Medicines used in the last month

Medicines	Refugee			Control		
	Prescribed	OTC	Total	Prescribed	OTC	Total
Paracetamol	20	2	22	10	14	24
Ibuprofen	2	0	2	2	6	8
Antibiotics	7	0	7	6	0	6
Inhalers	3	0	3	5	0	5
Cough suppressants	1	2	3	3	1	4
Topical	0	0	0	0	1	1
Vitamins	1	2	3	0	10	10
Teething medicines	0	0	0	0	3	3
Lactulose	2	0	2	0	0	0
Honey	0	8	8	0	0	0
Herbal	0	4	4	0	1	1
Others	3	1	4	0	1	1
Unknown	2	0	2	0	0	0
Total	41	19	60	26	37	63

OTC, over the counter.

Table 3 Medicines used in the past 6 months

Medicines	Refugee			Control		
	Prescribed	OTC	Total	Prescribed	OTC	Total
Paracetamol	39	4	43	19	23	42
Ibuprofen	2	0	2	2	10	12
Antibiotics	10	0	10	10	0	10
Inhalers	4	0	4	5	0	5
Cough suppressants	6	2	8	4	2	6
Topical	8	0	8	2	1	3
Vitamins	2	2	4	0	10	10
Teething medicines	0	1	1	0	4	4
Lactulose	2	0	2	0	0	0
Oral rehydration	1	0	1	2	1	3
Honey	0	8	8	0	0	0
Herbal	0	5	5	0	1	1
Others	2	3	5	0	0	0
Unknown	4	0	4	0	0	0
Iron	3	0	3	0	0	0
Total	83	25	108	44	52	96

OTC, over the counter.

face considerable financial difficulties in that asylum seekers are not allowed to work and receive significantly less financial assistance than others on welfare benefits.¹⁹ Analgesics/antipyretics are the most frequently purchased OTC medicines by parents for children in the UK.¹⁸ The two most common reasons for buying OTC medicines by British parents included: (1) not wishing to bother a GP for minor illness and (2) to have a medicine in case of future need.¹⁸ It is likely that the lower OTC use in refugee children is related to the financial cost of OTC medicines.

Parental recall of medicines administered to children over a 12-month period has been used by researchers in the UK and Australia.^{20 21} We used two time periods—1 and 6 months in our pilot study. Parental recall for the last month is likely to be more accurate than for the 6 months. We were uncertain however whether a period of 1 month would generate enough data in relation to the number of medicines given. Based on our pilot study, we would recommend asking about a time period of 1 month only. We have showed that research in relation to access to medicine in refugee children is feasible by working in conjunction with Refugee Action. We have held discussions with other health professionals in the UK in order to plan larger studies. The data generated by our study will be used for the power calculations for these larger studies.

Adult refugees were more likely to have health problems than the control parents in this study. This is in keeping with previous studies as refugees often come from countries affected by armed conflict and are likely to have experienced bereavement, displacement or torture.¹⁹ It is important to recognise that there are many differences in refugees worldwide and that the health problems of refugees from the Middle East in the UK are likely to be different to those of South-East Asian refugees in Canada.²²

There have been very few studies looking at access to healthcare by refugee children.^{23 24} Additionally, there have been no previous studies specifically looking at the pharmacoepidemiology of medicines received by refugee children. Our small study shows that it is possible to use both the number of medicines used by children over the last month or the past 6 months as a marker of access to healthcare. It is important to recognise the limitations of our study. First, most of the refugees interviewed had been in contact with Refugee Action. These were refugees who had made contact with a charity and were therefore fully informed of their rights, especially with regard to healthcare. Unfortunately, due to government cutbacks, the Nottingham office of Refugee Action has now closed down and the nearest Refugee Action office is in Leicester, which is 40 km away. From April 2014 Refugee Action no longer has a grant agreement with the Home Office to provide advice and support (formally One Stop Shop) to individuals and families going through the asylum system. This work is now provided through another agency: Migrant Help. Migrant Help services are split into Asylum Support Applications UK and Asylum Advice UK and are provided across the UK mainly through a national telephone service with some limited outreach (for the East Midlands in Derby, Nottingham and Leicester 1 day/week, respectively). Refugee Action continue to provide a national Assisted Voluntary Returns project; Choices. A project for vulnerable destitute women in Leicester; Fresh Start and a volunteer run project for vulnerable people; Prevention of Asylum Homelessness which helps people to appeal refusals of support under s4 of the Immigration and Asylum Act 1999.

It is also likely that if we had looked at a different group of children, for example, refugee children

presenting to the emergency department, our findings may have been different. A small study in Ireland of 25 refugees found that 20% of refugees were not registered with a GP.¹⁵ Additionally, we did not look at the access to healthcare and medicines of refugee children held in immigration detention centres. Others have highlighted that these children experience significant health problems.²⁵ It was not possible to match controls and refugee parents by socioeconomic status. This is impossible in the UK as asylum seekers receive less financial support than others on welfare benefit.¹⁹ Another limitation was the gender imbalance between refugees and controls.

It is important to recognise that the number of people seeking refugee status in the UK is actually quite low (less than 20 000 in 2011).²⁶ In May 2014, the Immigration Act received Royal Assent. One of the aims of the Act was to restrict access to public services and people entering the UK illegally.²⁷ It is uncertain whether this includes people who have been refused asylum. It is likely that in the future refugee children in the UK will experience more difficulties in accessing both healthcare and medicines.

Contributors IC conceived the original idea and study design. This was modified following discussion with SA, CM, HS, RH and KG. SA and JC performed the interviews and collected all the data. KG helped facilitate the collection of the data. Data were analysed by IC, RH, SA, JC, HS and KG. All authors contributed to the writing of the paper and approved the final manuscript.

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REFERENCES

- Choonara I. Why children do not receive treatment. *Arch Dis Child* 2014;99:605–6.
- Bonati M, Choonara I, Hoppu K, *et al*. Closing the gap in drug therapy. *Lancet* 1999;353:1625.
- Choonara I. Regulation of drugs for children in Europe. *BMJ* 2007;335:1221–2.
- Berkovitch M, Choonara I, Jacqz-Aigrain E, *et al*. Improving research and access to children's medicines worldwide. *Paediatr Perinat Drug Ther* 2008;8:138–9.
- Njuguna F, Mostert S, Slot A, *et al*. Abandonment of childhood cancer treatment in Western Kenya. *Arch Dis Child* 2014;99:609–14.
- UNICEF. *The state of the world's children. Children with disabilities*. New York, 2013.
- Pletcher MJ, Kertesz SG, Kohn MA, *et al*. Trends in opioids prescribing by race/ethnicity for patients seeking care in US emergency departments. *JAMA* 2008;299:70–8.
- Yen K, Kim M, Stremski ES, *et al*. Effect of ethnicity and race on the use of pain medications in children with long bone fractures in the emergency department. *Ann Emerg Med* 2003;42:41–7.
- Chen AY, Chang RKR. Factors associated with prescription drug expenditures among children: an analysis of the medical expenditure panel survey. *Pediatrics* 2002;109:728–32.
- Reime B, Tu AW, Lee SK; Canadian Neonatal Network. Treatment differences between Aboriginal and white infants admitted to Canadian neonatal intensive care units. *Paediatr Perinat Epidemiol* 2007;21:532–40.
- Royal College of Paediatrics and Child Health. *Inequalities in child health*, 1998.
- Arnold FW. Seeking medical justice. *BMJ* 2008;336:683–4.
- Reeves M, de Wildt G, Murshali H, *et al*. Access to health care for people seeking asylum in the UK. *Br J Gen Pract* 2006;56:306–8.
- Joels C. Impact of national policy on the health of people seeking asylum. *Nurs Stand* 2008;22:35–40.
- Delamothe T. Migrant healthcare: public health versus politics. *BMJ* 2012;344:e924.
- Tobi H, Meijer WM, Tunistra J, *et al*. Socio-economic differences in prescription and OTC drug use in Dutch adolescents. *Pharm World Sci* 2003;25:203–6.
- Du Y, Knopf H. Self-medication among children and adolescents in Germany: results of the National Health Survey for Children and Adolescents (KiGGS). *Br Clin Pharmacol* 2009;68:599–608.
- McIntyre J, Conroy S, Collier J, *et al*. Use of over-the-counter medicines in children. *Int J Pharm Pract* 2003;11:209–15.
- Taylor K. Asylum seekers, refugees, and the politics of access to health care: a UK perspective. *Br J Gen Pract* 2009;59:765–72.
- Headley J, Northstone K. Medication administered to children from 0 to 7.5 years in the Avon Longitudinal Study of Parents and Children (ALSPAC). *Eur J Clin Pharmacol* 2007;63:189–95.
- Trajanovska M, Mniac E, Cranswick N, *et al*. Use of over the-counter medicines for young children in Australia. *J Paediatr Child Health* 2010;46:5–9.
- Fung K, Wong Y-LR. Factors influencing attitudes towards seeking professional help among East and Southeast Asian immigrant and refugee women. *Int J Soc Psychiatry* 2007;53:216–31.
- Davidson N, Skull S, Burgner D, *et al*. An issue of access: delivering equitable health care for newly arrived refugee children in Australia. *J Paediatr Child Health* 2004;40:569–75.
- Prendiville T, Williamson M, Cahill P, *et al*. Access of asylum seeker children to acute paediatric services. *Ir Med J* 2007;100:362–3.
- Lorek A, Ehntholt K, Nesbitt A, *et al*. The mental and physical health difficulties of children held within a British immigration detention center: a pilot study. *Child Abuse Neglect* 2009;33:573–85.
- Blinder S. Briefing: migration to the UK: asylum, published 13 February 2013. <http://www.migrationobservatory.ox.ac.uk> (accessed 12 Mar 2013).
- <http://www.gov.uk> Plans to encourage the recovery of migrant NHS healthcare costs (accessed 25 Nov 2014).