Mental health problems of homeless children and families: longitudinal study

Panos Vostanis, Eleanor Grattan, Stuart Cumella

Abstract

Objective: To establish the mental health needs of homeless children and families before and after rehousing.

Design: Cross sectional, longitudinal study.

Setting: City of Birmingham.

Subjects: 58 rehoused families with 103 children aged 2-16 years and 21 comparison families of low socioeconomic status in stable housing, with 54 children.

Main outcome measures: Children's mental health problems and level of communication; mothers' mental health problems and social support one year after rehousing.

Results: Mental health problems remained significantly higher in rehoused mothers and their children than in the comparison group (mothers 26% *v* 5%, $P = 0.04$; children 39% *v* 11%, $P = 0.0003$). Homeless mothers continued to have significantly less social support at follow up. Mothers with a history of abuse and poor social integration were more likely to have children with persistent mental health problems.

Conclusions: Homeless families have a high level of complex needs that cannot be met by conventional health services and arrangements. Local strategies for rapid rehousing into permanent accommodation, effective social support and health care for parents and children, and protection from violence and intimidation should be developed and implemented.

Introduction

Following research on the health problems of single adult homeless people, there has been interest in the characteristics and needs of homeless children and their families, who constitute a different and rapidly growing population.¹ At any one time, at least 60 000 families, with between 140 000 and 170 000 children, are defined as homeless by local authorities in England.²⁻³ In addition, the number of single homeless teenagers living on the streets is increasing, as is the number of homeless families living with friends and relatives or in squats.

The causes of homelessness in this group are diverse: many are victims of domestic violence,⁴ and the group also includes refugee families, mainly in the London area.⁵ Homeless children are significantly more likely than the general population, or comparison children in stable housing, to have delayed development,⁶ learning difficulties,⁷ and higher rates of mental health problems (behavioural problems such as sleep disturbance, eating problems, aggression, and overactivity, and emotional problems such as depression, anxiety, and self harm).⁶⁻¹⁰ Such problems are not specific to homeless families. They occur in other families living in adversity and have been found to be related to adverse life events that precipitate homelessness—for example, family breakdown, abuse,

exposure to domestic violence, and poor social networks.¹⁰

Because many homeless families have changed address frequently or urgently, they are less likely than the rest of the population to be registered with a general practitioner. This reduces their access to primary and secondary medical care, as well as to immunisations and other preventive health procedures. Homeless families therefore tend to rely on accident and emergency departments for medical treatment, and they have high rates of hospital admission.¹¹ To date, there has been no research on the long term impact of homelessness on the mental health of children and their families. This cross sectional longitudinal study was designed to establish the extent of mental health problems among homeless children and their parents one year after rehousing by the local authority.

Subjects and methods

Subjects

Subjects were selected from a sample described in an earlier cross sectional study on homeless families.¹⁰ This included 113 homeless families who had applied for rehousing to the City of Birmingham's housing department and who had been admitted to the seven homeless centres managed by the department over one year. These were initially interviewed within two weeks of becoming homeless and being admitted to the hostel. A comparison group of 29 housed, low income families had been selected from two schools where homeless children attended at the time, by random selection from the school list. All families were of socioeconomic class V.¹² A relatively small comparison sample was selected because of the expected "homogeneity" (low variance of family and social variables) in a stable community population. Parents were asked to give informed consent, after approval by two local research ethics committees.

Our study was conducted one year after the initial assessment of both groups. Homeless families had already given consent to be contacted at follow up, and their new address was sought from the housing department. Although only seven families (6%) refused to be interviewed again at this stage, a substantial proportion (40 families, 35%) had already moved from their follow up address and were untraceable, and 8 (7%) had left the centre before being rehoused by the local authority. At one year, we interviewed 58 families (51% of initial sample) with 103 children aged 2-16 years who were in housing and constituted the study group, and 21 comparison families (72% of initial sample) with 56 children aged 2-16 years. Families lost to follow up did not differ from those interviewed at one year in regard to family composition, demographic factors, or reasons for becoming homeless. Children younger than 2 years were not included because there is no reliable way of establishing

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behavioural and emotional problems for such a young age group. Because of the small number of fathers involved at intake¹⁰ and follow up (table 1), data analysis was confined to mothers. All comparison families interviewed at follow up had remained in the same residence over the 12 month period.

Assessment

Five research instruments were used to assess mental health problems.

Semi-structured interview with the mother—this consisted of questions concerning house moves, family life, peer and family relationships, and behavioural problems among the children. Mothers were interviewed at the hostel by a research psychologist (EG).

Child behaviour checklist—this questionnaire has been widely used in research to measure externalising (behavioural) and internalising (emotional) problems, and social competence (activities, peer relationships, and school performance) in children.¹³ It has been standardised in large community and clinical populations. Adapted scores (T scores) indicate whether the child is within the “clinical range” (problem of sufficient severity to be referred for treatment to a child mental health service: T score ≥ 63) or within the “social maladjustment” range (T score ≤ 37). A parent completed a separate questionnaire for each child in the survey. In the case of children aged 2-3 years, the version used excluded social competence questions.¹⁴

General health questionnaire—this is an established and standardised screening questionnaire for use in surveys of adult mental health problems in the general population.¹⁵ A 28-item version was used in this study, which generates scores for somatic symptoms, anxiety, social dysfunction, and depression. Cut off scores have been established to identify possible mental health disorders (caseness). A questionnaire was completed by each mother.

Interview schedule for social interaction—this is a measure of people’s social network.^{16 17} It includes scales that measure the availability and perceived adequacy of attachment relationships, the availability and perceived adequacy of social integration, and the number of attachment relationships with whom the respondent has recently been having rows or unpleasant interaction with.¹⁷

Communication domain of the Vineland adaptive behaviour scales—this measures the development of communication in children.¹⁸ Scores are adapted according to norms from the general population; an age equivalent score is provided and indicates the chronological age at which the child is functioning.

Statistical analysis

Within the homeless group, mental health scores at the first and follow up assessment were compared by Wilcoxon matched pairs, signed ranks test. Between-group analyses (homeless and comparison families) were done with χ^2 test, *t* test, and Mann-Whitney non-parametric U test, depending on the nature and distribution of the data.

Results

Family characteristics and housing

Family characteristics are presented in table 1. Because hostels for homeless Asian and Afro-Caribbean families were run by the voluntary sector and were not included in the initial study, ethnic minority groups were underrepresented in the rehoused group in comparison with both the housed group ($\chi^2=7.7$, *df*=2, *P*=0.02) and the local general population (inner Birmingham wards have up to 12.5% Afro-Caribbean and 43% Asian children). At the time of the first assessment,¹⁰ the most common reason for becoming homeless was to escape from violence, either by a partner or ex-partner (29, 50%) or by neighbours (20, 35%). Other families had become homeless after eviction from their previous housing because of mortgage or rent arrears (3, 5%); 6 (11%) had left voluntarily or for other reasons.

The average length of stay in the homeless centre for the families who were reinterviewed was 10 weeks (range 2-58 weeks). The housing department’s target is to rehouse within 28 days. Thirty five families (60%) moved to the first property offered. At follow up, 17 families (30%) had moved at least once in the year and 9 (16%) had been homeless again at some time. Of those who had moved since being rehoused, 29 (50%) gave violence or harassment from an ex-partner or neighbours as the reason for their move. Seventeen families (30%) were unhappy with the property they had been allocated, and 20 (35%) were not happy with the area. At follow up, 52 families (90%) lived in rented property, two (3%) in owned property, three (5%) in a homeless centre, and one family (2%) was lodging with friends. Eighteen comparison families (81%) lived in rented property and four (22%) in owned property (χ^2 for difference = 6.5, *df* = 3, *P* = 0.09).

Mental health problems

Mothers

Homeless mothers had high rates of previous abuse (25 (43%) v 1 (5%) control mother, $\chi^2 = 10.6$, *P* = 0.001). On the basis of general health questionnaire scores, the rate of homeless mothers who reported mental health problems of clinical significance had decreased from 52% at initial interview to 26% at one year follow up, and total scores significantly decreased for the homeless group (*P* = 0.002, Wilcoxon test). However, at follow up the scores remained significantly higher than

Table 1 Characteristics of homeless families (one year after rehousing) and of low income families in stable housing

Characteristic	Rehoused (n=58)	Comparison (n=21)	Difference
No (%) single mothers	40 (69)	7 (33)	$\chi^2=21.2$, P<0.001
No (%) two parent families	18 (31)	14 (66)	
Median (range) No of children	2 (1-5)	3 (1-7)	$t=1.1$, NS
Mean (range) age of mother (years)	31 (20-44)	32.4 (26-46)	$t=1.1$, NS
Mean (range) age of children (years)	8.5 (3-16)	9.4 (3-16)	$t=1.7$, NS
No (%) boys	54 (52)	28 (52)	$\chi^2=0.005$, NS
Mother's ethnic group:			
White	48 (83)	14 (67)	$\chi^2=7.7$, P=0.02
Afro-Caribbean	6 (10)	2 (10)	
Asian	4 (7)	5 (24)	
Mother's occupation:			
Unemployed	47 (81)	14 (67)	$\chi^2=6.5$, NS
Full time work	1 (2)	2 (10)	
Part time work	7 (12)	5 (24)	
Full time education	3 (5)	0	

those of comparison mothers (table 2) or the general population (up to 20% for women of this age group).¹⁹

Children

Seven children had been in care before becoming homeless and two since rehousing. Twelve children had been placed on the at risk child protection register before they became homeless, and six since being rehoused; 10 children had a history of physical or sexual abuse. No comparison children were reported to have had similar adversities.

Though homeless children improved on the Vineland communication scores, this did not reach statistical significance ($P=0.07$, Wilcoxon test), and they remained significantly more delayed than children in the comparison group (table 2). Homeless children's age equivalent of communication remained significantly lower than their chronological age (age equivalent 7.8 years *v* chronological age 8.5 years; $P=0.0001$), unlike controls (age equivalent 9.1 years *v* chronological age 9.4 years; $P=0.16$). Homeless children's scores on the child behaviour checklist showed no significant change (58.2 at baseline *v* 59.2 at follow up; $P=0.53$), and they remained significantly more likely to be within the clinical range than the comparison group.

Discussion

Most research on homeless people has focused on populations of single adults. This study highlights the high level of mental health needs among homeless children and their mothers. Homeless families constitute a relatively heterogeneous population with complex health, social, and educational problems, which often precipitate the episode of homelessness. These are related to underlying psychosocial factors, and are likely to persist, even after rehousing.

The risk of mental health problems in children was not accounted for by socioeconomic deprivation, as they differed significantly from the comparison group on several measures. However, differences could be explained by confounding factors such as family and social stability (for example, there were fewer single parents in the comparison group). In contrast, residential, social, and family instability remained for a substantial proportion of homeless families, who thus re-entered a similar cycle of disruption. Residential instability was reflected in the percentage of families lost to follow up, as the local authority (housing, education, or social services) had no official record of them once they had moved from the first residence offered by the city council. Even after rehousing, children remained vulnerable to several risk factors, such as family breakdown, domestic violence, maternal mental health disorders, learning and developmental difficulties and delays, and loss of peer relationships.

These families do not fit into traditional public health and welfare systems.²⁰ There are no designated healthcare services for homeless families, and there is often little interagency coordination, with managers and policy makers often responding to different definitions of need and statutory obligations.²¹ Some services have attempted to coordinate the care of homeless families and to provide support (and occasionally direct treatment) in a relatively structured

Table 2 Mental health problems in mothers and children at one year follow up. Values are numbers (percentages) unless specified otherwise

	Rehoused group (n=58)	Comparison group (n=21)	Difference*
Mothers			
General health questionnaire:			
Caseness†	15 (26)	1 (5)	$\chi^2=4.3$, $P=0.04$
Mean (SD) total score	29.9 (16.5)	18.1 (9.6)	$z=2.9$, $P=0.004$
Interview schedule for social interaction:			
Availability of attachment relationships	4.7 (2.2)	7.1 (1.1)	$z=4.3$, $P<0.0001$
Perceived adequacy of attachment relationships	7.1 (3.7)	10.6 (1.1)	$z=3.6$, $P=0.0003$
Availability of social integration	7.0 (3.2)	10.7 (4.6)	$z=3.3$, $P=0.0008$
Perceived adequacy of social integration	10.4 (4.8)	13.9 (2.1)	$z=2.8$, $P=0.005$
Children			
Child behaviour checklist:			
Caseness	40 (39)	6 (11)	$\chi^2=12.9$, $P=0.0003$
Social maladjustment‡	71 (69)	33 (61)	$\chi^2=3.7$, $P=0.05$
Mean (SD) score	59.2 (8.7)	49.2 (9.1)	$z=5.8$, $P<0.0001$
Mean (SD) internalising	55.1 (12.1)	49.4 (9.3)	$z=2.8$, $P=0.005$
Mean (SD) externalising	59.1 (10.5)	50.4 (9.9)	$z=4.7$, $P<0.0001$
Vineland adaptive behaviour scales—communication domain:			
Mean (SD) standard score	88.2 (15.2)	95.2 (9.8)	$z=2.3$, $P=0.02$
Mean (SD) age equivalent	7.8 (3.2)	9.1 (2.9)	$z=2.7$, $P=0.006$

*Results from χ^2 test or Mann-Whitney U test.

†Possible mental health disorder, or rate of psychiatric morbidity.

‡Social functioning below expected population norms.

way. Such projects include the provision of advocacy services, space for children to play and parents to meet, health visiting, input from general practitioners, social work, and input from community psychiatric nurses and community midwives.^{3 22} The voluntary sector has also developed services covering hostels for homeless families. Although three major reports on the health and educational needs of homeless children and their families have been published in Britain,^{3 6 23} few of their key recommendations have been implemented; if they have, this has been done in isolation, without setting up local or national standards.

Housing, education, health, and police services in each district need to establish a coordinating group to review the needs of homeless families, with the aim of developing and implementing a local strategy to facilitate rapid rehousing into permanent accommodation, effective social support and health care for parents and children, and protection from violence and intimidation. Central government and local housing authorities need a clear policy commitment to provide rapid and permanent rehousing for homeless families, to

Key messages

- Homeless children and their mothers have a high level of mental health problems
- Homeless families experience many risk factors, such as domestic violence, abuse, and family and social disruption
- In two fifths of children and a quarter of mothers, mental health problems persisted after rehousing
- In contrast with a comparison group of families of low socioeconomic status, a substantial proportion of homeless families remained residentially and socially unstable

minimise the risk of personal and family breakdown. New service models will require evaluation.

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Rate of recurrent collapse after vaccination with whole cell pertussis vaccine: follow up study

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Whole cell vaccines against pertussis can induce a hypotonic-hyporesponsive episode or shock-like syndrome (collapse) in children,¹ but this may also occur with diphtheria and tetanus vaccines, acellular pertussis vaccine, and without vaccination.² Two prospective studies estimated that the rate of collapse after vaccination was considerable (13 out of 35 284 and 9 out of 15 752).^{3 4} The only follow up study, which assessed a small series, was inconclusive about sequelae.⁵

Comparing the rates of collapse between countries poses problems because of differences in vaccination schedules and vaccines and in the way adverse reactions are monitored and symptoms reported. Moreover, case definitions are inconsistent.

Although the rate of recurrent collapse after whole cell pertussis vaccine has not been studied, for over 30 years repeat doses of vaccine have been contraindicated in children who experience a collapse reaction. Before 1993, in both the Netherlands and the United States children who had had a collapse reaction after vaccination with whole cell pertussis were not given a repeat dose. This contraindication still applies in the Netherlands, although most children are given further doses. We measured the numbers of cases of collapse in children after vaccination with whole cell pertussis vaccine in the Netherlands in 1994 and followed up all cases who were reported after their first dose.

Subjects, methods, and results

In the Netherlands over 99% of childhood vaccines are administered routinely by specialised staff within a child health clinic. All vaccinations are registered in provincial databases, so that data are accessible to medical staff if a child changes address. In 1962 an enhanced passive surveillance system for monitoring adverse events following vaccinations, with a 24 hour telephone service, was instigated. Some degree of underreporting is inevitable, but it seems to be limited and not biased against collapse (our laboratory's year report, 1994). Collapse is defined as sudden loss of muscle tone, pallor, and unresponsiveness. Sometimes symptoms are incomplete or atypical. When only one of the symptoms is present, the event is logged as an unspecified minor illness and not collapse.

In 1994, 712 adverse events were reported to the surveillance system, 587 after combined vaccination against diphtheria, tetanus, pertussis, and poliomyelitis (DTP-IPV vaccine) and *Haemophilus influenzae* type B (Hib-PRP-T vaccine). (The adverse events from *H influenzae* type B vaccine are infrequent and mild and not dealt with here.) After verification of symptoms we diagnosed 134 collapses (table).

In 1996 we followed up the 105 children with collapse reported after their first vaccinations. Detailed