An analysis of the relationship between geography, demographic change, housing tenure and health outcomes in North Devon in the period 2001-2011

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ABSTRACT

This study was conducted in parallel with work commissioned to provide an evidence based analysis of housing need in North Devon to assist in identifying key housing priorities and challenges.

The initial study examined selected economic, social, housing and health secondary data sources and identified key challenges:-

- The substantial growth of the private rented sector which is increasingly housing those in greatest need.

-High tenancy turnover caused by the termination of assured shorthold tenancies

- Persistent problems of poor housing condition and non-decency associated with the private rented stock.

- An ageing population, rural deprivation and geography contribute to social isolation and an increasing incidence of unpaid care.

-Significant health inequalities between the more deprived and least deprived wards

This paper examines data published by Public Health England relating to local health and wellbeing outcomes based on selected Lifecourse indicators in the 4 Domains within the Public Health Outcomes Framework and self-reported data from the Health and Care and Housing datasets published by ONS Neighbourhood statistics based on 2001 and 2011 Census.

The indicators were selected on the basis of their perceived relationship to health outcomes arising from the effects of place or space.

The study examines whether there may be a relationship between reported health outcomes and evidenced housing deficits arising from demographic, social and economic changes in the period 2001-2011.

The results confirm the link between the areas of worst housing condition, deprivation and greatest health inequalities as illustrated by the Indoor Living Environment, health ranking and Index of Deprivation sub-domains and Public Health England Local Health Profiles.

Key words: Privately rented housing, geography, demographic change, health outcomes

INTRODUCTION

The conclusion of a North Devon housing needs analysis based on key demographic, social and economic secondary data for the period 2001-2011 provided an opportunity to consider secondary data relating to health outcomes over the same period and to assess whether there was evidence of any relationship between identified housing needs and health status.

It is known that a wide range of personal, social and environmental factors influence health status (Marmot 2010) but that it is difficult to isolate the impact of housing from other influences and confounders (Hunt 1997).

Housing was identified as an important social determinant of health in the Marmot strategic review of health inequalities (2010) and a number of housing related factors are now included in the Public Health Outcomes Framework for England 2013-16.

There is a large body of evidence of physical impacts on health arising from cold, damp and mould affected housing.

Cold homes have a serious impact on the health of people of all ages but the impact is most serious on older people because of the close relationship between cold temperatures and cardiovascular and respiratory diseases (Collins 1986).

Cold also impairs movement and sensation and a lowered body temperature affects mental functioning such that falls are more likely in the cold (Collins 1986).

Living in sub-standard housing can have a profound effect on a child's physical and mental development. The evidence is particularly strong on the effect of cold, damp and mould, through reducing resistance to respiratory infections and exposure to allergens causing or exacerbating childhood asthma (Platt et al (1989); Strachan & Elton (1986); Brunekreef et al (1989)[i] (Illi et al 2006).

Public Health England (INHALE) profiles for respiratory disease and asthma prepared for the North, East and West Devon Clinical Commissioning Group report that both COPD and asthma are under-diagnosed and under-recorded and that the prevalence of both conditions may be higher than reported.

A study by Peat et al in Australia concluded that there was a direct dose/response relationship between childhood asthma and exposure to House dust mite allergen (Der p I) and a Tyneside study of 179 children reporting an episode of wheezing at age 7 found that asthma in childhood was significantly underdiagnosed and undertreated and that there was a 10-fold decrease in school absenteeism in the children subsequently offered Bronchodilator treatment (Peat et al 1996;Speight et al 1983).

The installation of heating into damp, unheated bedrooms of children helped to alleviate respiratory symptoms and increased school attendance (Somerville at al 2000).

Poor housing conditions can also impact on mental health (Macintyre et al 2003; Page 2002; Vostanis et al 1998).

NatCen Social Research provided a review of research literature relating to the impact of fragile living arrangements on mental health and well-being in a report prepared for Shelter in 2013.

Housing may affect 'the feeling of home, social status and ontological security' (Shaw 2004; Dupuis 1998) and insecurity of tenure can have a direct effect on mental health (Dunn 2002; Blackman et al, 2001).

A study in New Zealand concluded that inadequately housed urban New Zealanders reported significantly improved mental health following rehousing into social housing (Kearns et al 1992).

Living in temporary accommodation is known to have detrimental effects on the well- being of families (Shelter 2005) but frequent moves associated with insecure housing arising from terminations of assured shorthold tenancies can also affect school achievement (Pribesh & Downey,1999; Simpson & Fowler, 1994; Wood et al, 1993)) educational attainment (Hagan et al.,1996) and may exacerbate behavioural problems (Adam & Chase-Lansdale 2002; Hendershott,1989).

Poor housing conditions have significant negative impacts on key areas of childhood academic achievement which are not explained by differences in ability (Rubin et al 1996).

Children living in overcrowded homes have poorer academic performance (Goux and Maurin 2005).

Educational attainment is the most important factor in predicting poverty in both the UK and the EU. In the UK those with low educational attainment are 5 times more likely to be in poverty as those with a high level of education (ONS Release 23/9/14).

Research focused on vulnerable adults living in bedsit accommodation found that negative experiences, significantly affecting the mental wellbeing of residents caused stress and anxiety and contributed to conditions such as depression and difficulty in overcoming drug and alcohol dependency and that the management of such dwellings is relevant to the tenant's experiences (Barrett et al 2011).

Higher levels of social capital and 'connectedness' is linked to lower mortality and the influence of social relationships on risk for mortality is comparable with well-established risk factors for mortality (Holt-Lunstad J. et al 2010).

Local Authorities have a key role in mitigating the Mental Health risks of living in Houses in Multiple Occupation (Barrett 2012).

Insecurity associated with high tenancy turnover was identified by Rugg and Rhodes (2008) in the rental subsidy sub-market.

As is the case nationally (Rugg and Pleace 2013) the ending of a shorthold tenancy is the predominant cause of homelessness cited by households in North Devon.

Notwithstanding the body of research linking housing deficits with poor mental health and wellbeing outcomes Hunter and Buckley in their publication 'Mapping Health Toolkit' October 2013, highlighted the 'paucity of surveys and resources that can be utilised to construct contemporary accounts of levels of social capital' and the difficulty in capturing wellbeing data at local level.

This paper aims to examine the physical and mental health outcomes at lower level geographies in the context of a rapid increase in the private rented sector, high tenancy turnover, an ageing population and the growth in single person households under the age of 65.

Indicators were selected on the basis of their perceived relationship to health outcomes arising from the effects of place or space with a particular focus on those indicators displaying a significant adverse variation from National or Regional benchmarks.

METHODS

This study utilises published secondary demographic, economic and housing data from a variety of national sources including ONS; Census; DCLG; Nomis; ASHE; DWP; English Housing Survey; and DECC together with local data sources including The North Devon Strategic Housing Market Assessment (2012) (updated with 2011 Census data) and North Devon House Condition Survey 2009.

Some data sets permitted analysis at the localised level (Middle Super Output Area and Ward) enabling comparison between 2001 and 2011 Census data.

Neighbourhood level local Health Reports at MSOA level enabled mapping of health data for 2011.

The self-reported health and care and Housing and Living Environment Census indicators generally permitted comparisons between 2001 and 2011 data.

Health profiles of indicators in the Public Health Outcomes Framework enabled analysis of some key indicators in the period 2006-2011.

Lower Super Output area Draft Community Baseline Profiles for 2014 provided additional granularity and trend analysis for a range of economic, demographic and hospital admissions data.

An absence of archived historical health profile data and methodology changes prevented trend analysis for some health indicators.

Differences in spatial and temporal scales between 'Health' and 'Housing' data sources generally hindered analysis at lower level geographies.

Limitations arising from suppressed data and lack of data at lower level geographies prevented analysis of key housing related outcomes for asthma, cold related injury and mental health and wellbeing.

There were no ethical constraints to the use of the data as all original data is published and publicly available.

FINDINGS AND DISCUSSION

Limiting long term illness or disability

As is the case nationally there has been a significant increase in the proportion of the population over the age of 60 in the period 2001-2011. The increase is particularly evident in the 60-64 and 65-74 groups where the increase has been 39% and 21% respectively in comparison with the national averages of 33% and 11%; and in the 85-89 and 90+ age groups with increases of 22% and 38% (national averages of 22% and 28%).(Census 2001 and 2011)

As may be expected from an ageing population, the number of people reporting a long term limiting illness or disability has also increased since 2001. The increases in the reported incidence of long term illness or disability are comparatively small and generally within a range of 0.5-2.0% but in 10 (of 14) MSOA's the percentage of the population reporting a limiting long term illness or disability is significantly worse than the England average.(Census 2001 and 2011)

Reported health status for limiting long term illness or disability or health as bad or very bad in 3 (of 4) of the most deprived MSOA's is significantly worse than the England average. (Census 2011)

Health and Care

A combination of an ageing population, higher levels of rural deprivation compared to the national average, and greater distance from health and social care services and amenities contribute to higher levels of unpaid social care in Devon.

Nationally nearly 21% of carers report that they are not in good health compared with only 11% of the non-carer population. (Devon Carers Health Needs Assessment 2008)

Nationally, the percentage of the population providing unpaid care of more than 1 hour and of more than 50 hours per week has increased significantly in the study period. (ONS census)

The data for North Devon indicates increases in line with the national picture at MSOA level but it is clear that this masks significant differences at lower level geographies.

At ward level, in 13 wards the numbers of people providing in excess of 1 hour a week unpaid care is significantly higher than the national average. In total numbers this represents 5097 people, or households, providing at least 1 hour of unpaid care per week.(ONS Census)

In 3 wards-Fremington, Longbridge and Instow the numbers of people or households providing more than 50 hours a week unpaid care is significantly above the national average, representing 326 persons/households in those 3 wards. (ONS Census)

It is of interest that the incidence of levels of unpaid care exceeding the national average was more common in rural wards and MSOA's. This may be a reflection of barriers in access to care services in some wards and is worthy of further investigation/analysis.

The proportion of pensioners living alone was higher in the most deprived urban wards of Barnstaple. (Census 2011)

Cold related ill-health

PHE's excess winter mortality report 2012-3013 indicated that excess winter deaths were at their highest since 2008-09 following a later cold period and a prolonged influenza season.

In North Devon the figure for 2011-12 was 53, which was not statistically significant in comparison with national or regional statistics but still represents a cause for concern as these deaths are considered to be preventable.

The 2011 Census indicates that although there are over 2000 dwellings in the District lacking central heating there has been 50% reduction in such dwellings since 2001.

Despite significant progress it remains that in 11 of 14 MSOA'S and in 22 of 27 wards, the percentage of dwellings lacking central heating is significantly higher than the average for England.

The geographical extent of heating deficiency is related to the poor quality of the housing stock in urban centres and a large rural hinterland which is predominantly off-gas and dependent for heating on expensive and inefficient solid fuel, oil or electric appliances.

In both urban and rural parts of the District many dwellings are of pre-1919 solid wall construction and display inherently poor standards of thermal efficiency, are invariably in a poorer state of repair, more likely to have category 1 hazards, and hence a greater incidence of non-decency.

These properties form the predominant property type in the North Devon private rented sector and accommodate a high and increasing proportion of the vulnerable households seeking accommodation in the sector.

9% of private rented sector dwellings lack central heating as compared with 5% of owner-occupied dwellings and 2% of social rented. (Census 2011)

North Devon Council's House condition survey of 2009 indicated that 35% of private rented sector dwellings were non-decent, 59% were in a SAP banding below D and as many as 28% were in F or G category.

The lowest mean SAP rating is for dwellings constructed pre-1919, particularly those which have been converted into flats. These dwellings are typically privately rented, often in multiple occupation and located in the most deprived urban centres.

The expansion of the private rented sector has been most evident in these areas and MSOA001 in Ilfracombe and MAOA008 in Barnstaple now comprise 36% and 27% privately rented dwellings respectively. The combined total of the rental stock including social housing in these 2 areas stands at 47% and 58% respectively.

There is a numerical disparity between 2011 Census data relating to new additions to the housing stock in the period 2001-2011 and that collated by CLG from the local authority returns which suggests that only half of the actual increase in dwellings has been captured by Planning.

This amounts to the equivalent of 380 dwellings per annum over the decade suggesting that conversion and subdivision of dwellings has been happening on a much larger scale than figures record.

This pattern is true for England as a whole and represents a health and safety risk associated with non-compliance with housing standards, particularly as these units of accommodation are likely to become private sector lets to the most vulnerable households on lowest incomes.

DECC 'Low income-high cost' fuel poverty data for 2012 indicates that the highest rates of 21.7% are in urban MSOA001 (Ilfracombe) and in MSOA013 (Market Town with rural hinterland).

These rates are more than twice the national average of 10.4%.

Fuel poverty rates for the deprived Barnstaple LSOA's are favourably influenced by the higher levels of social housing stock where SAP ratings are good and although income deprivation in these areas is high, energy costs are low.

Disease prevalence, morbidity and mortality

In line with the trend nationally, average life expectancy at birth in the District increased over the study period from 76.5 to 79.7 for males and from 81.6 to 83.4 for females.

Life expectancy at birth remains above the national average, for both males and females but the District averages mask significant variations at lower level geographies.

Between individual communities there are much greater inequalities. There is an 11 year gap between the ward with shortest life expectancy (Ilfracombe Central with a combined all persons figure of 71.3 years) and the Devon average.

Hospital episode statistics produced by Public Health England for the period 2006/7-2010/11 indicate that the 2 deprived 'urban' MSOA's with the highest proportion of privately rented dwellings all have emergency admission rates significantly higher than the national average for All Causes; Coronary Heart Disease and Stroke.

MSOA001 also has significantly higher emergency admission rates for Myocardial Infarction and COPD than the England average and significantly higher mortality rates than average for All causes; All circulatory disease; Coronary Heart Disease; Stroke and Respiratory diseases.

Some of these conditions are ambulatory care sensitive conditions where emergency hospital admissions could be avoided with appropriate condition management.

This suggests that some patients may not be accessing or receiving the care most suited to managing their conditions.

NHS comparators have published ratios showing the difference between the recorded Quality Outcome Framework prevalence by practice and the expected prevalence. Studies in Ilfracombe have shown that the recorded prevalence is generally lower than would be expected for the population and this may suggest that people are either not accessing their

GP's appropriately and are not being diagnosed and treated effectively in primary care or are not following treatment regimes (Ilfracombe Health Equity profile 2008).

The 2008 Health Equity profile for Ilfracombe also found that In Ilfracombe the levels of prescribing of circulatory disease related drugs were predominantly lower than the Devon average.

The Statins Health Equity Profile 2009-10 records increasing statin use in recent years although North Devon continues to have the lowest level of statin prescribing relative to the QOF registered population compared with other parts of Devon but that there was no relationship between practice deprivation scores and levels of statin prescribing relative to need.

INHALE profiles for Respiratory disease and Asthma prepared for the North, East and West Devon Clinical Commissioning Group report that both COPD and asthma are under-diagnosed and under-recorded and that the prevalence of both conditions may be higher than reported.

Although the profiles stress the importance of smoking cessation in condition management there is no reference to the potential impacts of the home environment or atmospheric pollution.

There is no reported data for these conditions at a lower level geography than CCG.

These conditions have a number of contributory factors, particularly individual lifestyle and socio-economic and cultural influences, but cold damp housing is known to contribute to the burden of morbidity and warm, dry homes are effective in the management of chronic conditions.

Mental Health

Local Health Profiles indicate that there are 6 MSOA's where Standardised admission ratios (SAR's) for Self-harm and Alcohol related harm are significantly higher than the National average for the period 2006/7 to 2010/11.

All the high scoring MSOA's were located in the urban areas of Barnstaple and Ilfracombe with the highest SAR's in MSOA's 008; 001 and 003.

At District level Hospital admissions caused by unintentional and deliberate injuries in children aged 0-14 years and young people aged 15-24 were significantly higher than the national average in the period 2010/11 -2012/13.

Devon Health and Wellbeing Outcomes report 2014 for the indicator records that the SAR has increased from 376.6 in 2007/8 to 419.5 in 2012/13 for the 10-14 age group in Devon with the highest rates in those aged 15-19 and in the deprived areas.

Rates of Hospital admission for self-harm are three times higher in females than males and the gap has widened in recent years.

Within Devon rates were highest in North Devon.

Data provided by Devon County Council Social Care indicates that in 2011-12 Barnstaple and Ilfracombe had significantly high rates of adults aged 18-64 with a mental health condition receiving community based care (Devon Mental Health and Wellbeing Needs Assessment 2013).

Annual turnover of tenancies in the private rented sector is estimated at 33% (North Devon SHMA). This amounts to around 2600 properties and therefore exceeds all supply in the owner-occupied and social sectors, representing around two thirds of all supply each year.

Given that supply is dominated by the private rented sector the implication is that these will be smaller properties and more likely to be in poor condition.

Although overcrowding in the District has been historically lower than the national average, it is increasing in line with national figures and the rates in MSOA 008 and MSOA 001 are higher than the national average at 10.70% and 9% respectively.

The increasing demand for affordable accommodation for single person households is likely to have been a factor in the informal expansion of the housing stock by conversion and subdivision, and of the private rental sector generally.

The deprived MSOA's with higher proportions of privately rented dwellings also have higher proportions of multiple-occupied properties, poorly converted into bedsits and single person units.

The projected activity for the housing options service of 3742 transactions by 2015/16 effectively means that almost 50% of all privately renting households in North Devon will be seeking advice and assistance in a single year.

The number of housing options transactions is probably reflective of the high turnover in the private rented sector and that a proportion of tenancies are ended by the landlord, leaving some households in a vulnerable situation if they are unable to find suitable alternative affordable accommodation.

There is no available data relating housing status vulnerability to mental health and wellbeing.

Educational achievement

For the key Educational achievement indicator of children achieving 5A*-C grades at GCSE (including Maths and English) North Devon has consistently performed significantly below the national average throughout the study period.

In 5 MSOA's performance has been significantly below the England average of 59.5% with only 50% attainment in the deprived Barnstaple wards and 37.3% in Ilfracombe.

Conclusions

- The rapid increase in the proportion of private rented sector dwellings in deprived MSOA's has been accompanied by a corresponding increase in tenancy turnover and in requests for housing advice and assistance.

  In the context of the rapid increase in the proportion of privately rented dwellings, high tenancy turnover and associated housing insecurity, further research would assist in identifying the impact on the mental health and wellbeing of households.
  The Public Health Research programme of NIHR could provide a vehicle for an appropriate study.

- The development of lower level geography health profiles, including trend data, of a wider range of conditions, subject to confidentiality constraints, would assist in the direction of strategic housing interventions.

- There may be a role for Health and wellbeing Boards and partners in promoting or commissioning local qualitative studies to measure social capital and wellbeing.

- Housing interventions in the private rented sector have the potential to contribute to the better management of a wide range of cold-related ambulatory sensitive conditions.

- The unofficial conversion and subdivision of dwellings has a detrimental impact on housing quality and space standards in the private rented sector.

- The burden of care in the community is increasingly being discharged by unpaid carers, particularly in rural areas.

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References

Adam EK., & Chase- Lansdale L. (2002) Home sweet home(s): Parental separations, residential moves and adjustment problems in low-income adolescent girls. Developmental Psychology, 38, 792-805.

Barnes M. Cullinane C. Scott S. Silvester H. People living in bad housing- numbers and health problems August 2013. NatCen Social Research

Caroline Barrett, Christopher Kitcher and Jill Stewart (2012) Beyond safety to wellbeing: How local authorities can mitigate the mental health risks of living in houses in multiple occupation.

Caroline Barratt, Gill Green, Ewen Speed. University of Essex School of Health & Human Sciences and Paul Price, Tendring DC 2012 'Understanding the relationship between mental health and bedsits in a seaside town' CIEH Private Sector Housing Evidence base. http://www.essex.ac.uk/hhs/documents/research/clacton-bedsit-report.pdf

BlackmanT, Harvey J, Lawrence M, Simon A, 'Neighbourhood Renewal and health: Evidence from a local case study' Health & Place. Vol 7, Issue 2, June 2001, pp 93-103.

Bert Brunekreef, Douglas W. Dockery, Frank E. Speizer, James H. Ware, John D. Spengler and Benjamin G. Ferris' Home dampness and respiratory morbidity in children'. American Review of Respiratory Disorders. Vol. 140, No. 5 (1989) pp. 1363-1367.

Collins KJ. Low Indoor air temperatures and morbidity in the elderly. Age and Ageing 1986.

Dunn J 'Housing and inequalities in health: a study of socioeconomic dimensions of housing and self reported health from a survey of Vancouver residents. Journal of Epidemiology and Community Health (2002) 56:671-681.

Dupois A., DC Thorns (1998) 'Home, ownership and the search for ontological security' The Sociological Review, 1998.

Fair Society Health Lives. The Marmot Review. Strategic review of Health Inequalities in England post -2010.

Goux D. and Maurin E. ' The effect of overcrowded housing on children's performance at school' Journal of Public economics Vol. 89, Issues 5-6, June 2005, pp. 797-819.

Hagan J., Macmillan R., and Wheaton B. (1996) 'New kid in town: Social capital and the life course effects of family migration on children. American Sociological Review, 61, pp 368-385.
Hendershott AB., (1989) 'Residential mobility, social support, and adolescent self-concept' Adolescence, 24, 21.

Holt-Lunstad J, Smith TB, Layton JB (2010) Social Relationships and Mortality Risk: A Meta-analytic Review. PLoS Med 7(7): e1000316. Doi:10.1371/journal.pmed.1000316.

Hunt, S. (1997) Housing-related disorders, J. Charlton & M. Murphy (Eds) The Health of Adult Britain 1841-1994, Suppl 12 (London: The Stationery Office).

Hunter J. and Buckley S. 'Mapping Health Toolkit. Helping local Councils and Environmental Health Officers respond to the new Public Health agenda. Nottingham Trent University October 2013.

Illi S., von Mutius E., Lau S. , Niggemann B, Gruber C., Wahn U.. 'Perennial allergen sensitisation early in life and chronic asthma in children: a birth cohort study. The Lancet Vol. 368, Issue 9537, Pp 763-770 26 Aug 2006.

Kearns RA., Smith CJ., and Abbot MW. 'The stress of incipient homelessness' Housing Studies, Vol 7, Issue 4, 1992.

Macintyre S., Ellaway A., Hiscock R., Kearns A., Der G., McKay L. (2001) 'What features of the Home and the area might help to explain observed relationships between housing tenure and health ? Evidence from the West of Scotland. Health & Place Vol. 9 Issue 3, Sept 2003, pp 207-18.

McWilliams LA., and Bailey SJ 'Associations between adult attachment ratings and health conditions: Evidence from the National Comorbidity survey Replication. Health Psychology, Vol 29(4), Jul 2010, pp 446-453.

Page A (2002) ' Poor Housing and mental ill-health in the United Kingdom: changing the focus for intervention.' Journal of Environmental Health Research CIEH.

JK Peat, E Tovey, BG Toelle, MM Haby, EJ Gray, A Mahmic and AJ Woolcock.'House Dust Mite allergens. A major risk factor for childhood asthma in Australia' American Journal of Respiratory and Critical care Medicine, Vol. 153, No. 1 (1996) pp. 141-6.

SD Platt, CJ Martin, SM Hunt and CW Lewis. Damp housing, mould growth and symptomatic health state. BMJ Jun 24 1989: 298(6689): 1673-1678.

Pribesh S, and Downey, D.B. (1999) 'Why are residential and school moves associated with poor school performance ?' Demography Vol. 36 No.4, November 1999: pp 521-534.

Rubin DH., Erikson CJ., Agustin MS., Cleary SD., Allen JK. And Cohen P. 'Cognitive and academic functioning of homeless children compared with housed children' Paediatrics, 97 (3) 289-294, 1996.

Rugg, J. and Pleace N. (2013) Making it count: Value for money and effectiveness Indicators for the use by private rented sector schemes, London: Crisis .

Rugg, J. and Rhodes, D. (2008) The private rented sector: Its contribution and potential, Centre for Housing Policy, University of York.

Strachan DP, Elton RA. The relationship between Respiratory morbidity in children and the home environment. Family Practice 1986. Vol 3 Issue 3, Pp137-142.

Shaw M. (2004) Housing and Public Health. Annual Review of Public Health 2004, 25: 397-418.

Simpson GA., and Fowler M.G., (1994) 'Geographic mobility and children's emotional/behavioural adjustment and school functioning. American Academy of Paediatrics. Vol. 93, No. 2, February 1 1994 pp 303-309.

Shelter (2005) Full House? How overcrowded housing affects families. Shelter.

Somerville M., Mackenzie I. Owen P., and Miles D. (2000) Housing and Health: does installing heating in their homes improve the health of children with asthma ? Public Health, 114(6), 434-439.

Vostanis P., Grattan E., Cumella S. and Winchester C. (1997) Psychosocial functioning of homeless children. Journal of the American Academy of Child and Adolescent Psychiatry, 36(7), 881-889.

Wood D., Halfon N., Scarlata D., Newacheck P., and Nessim S. (1993) Impact of family relocation on children's growth, development, school function and behaviour. Journal of the American Medical Association, 270 (11) pp 1334-1338.