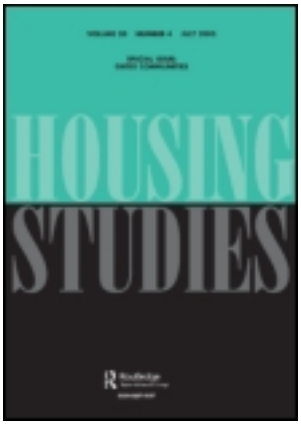

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Marcia Gibson [a], Hilary Thomson [a], Ade Kearns [b] & Mark Petticrew [c]

[a] MRC Social and Public Health Sciences Unit, Glasgow, UK
[b] Department of Urban Studies, University of Glasgow, Glasgow, UK
[c] Public and Environmental Health Research Unit, Department of Public Health and Policy, London School of Hygiene and Tropical Medicine, London, UK

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Understanding the Psychosocial Impacts of Housing Type: Qualitative Evidence from a Housing and Regeneration Intervention

MARCIA GIBSON*, HILARY THOMSON*, ADE KEARNS** & MARK PETTICREW†

*MRC Social and Public Health Sciences Unit, Glasgow, UK, **Department of Urban Studies, University of Glasgow, Glasgow, UK, †Public and Environmental Health Research Unit, Department of Public Health and Policy, London School of Hygiene and Tropical Medicine, London, UK

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ABSTRACT *The association between poor housing and poor health is widely accepted, but there is a lack of evidence on the health impact of housing interventions. In particular, evidence on mechanisms linking housing interventions to health is lacking. Scotland's Housing and Regeneration Project (SHARP) evaluated the health impacts of new-build social housing using a quasi-experimental survey design. Qualitative interviews were also conducted with a sub-sample of survey respondents. The qualitative data indicated that changes in dwelling type influenced key psychosocial processes such as control, with consequent impacts on well-being. This study provided insights into the psychosocial impacts of housing design, whilst also demonstrating the utility of qualitative methods for enhancing understanding of the mechanisms linking housing change with improved well-being.*

KEY WORDS: Social housing, urban regeneration, housing and environment, health inequalities, mixed methods, psychosocial

Introduction

It has long been recognised that poor housing is strongly associated with poor health (Shaw, 2004; Wilkinson, 1999). Housing improvements and neighbourhood regeneration are now seen as 'upstream' interventions (Graham, 2004; Macintyre & Ellaway, 2000) with the potential to tackle health inequalities, and as such form an important component of the UK government's health inequalities strategy (HM Treasury & Department of Health, 2002). There is also evidence that housing and neighbourhood conditions can

Correspondence Address: Marcia Gibson, MRC Social & Public Health Sciences Unit, 4 Lilybank Gardens, Glasgow, G12 8RZ, UK. Email: marcia@sphsu.mrc.ac.uk

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impact on 'softer' outcomes such as well-being and quality of life, which have recently begun to attract greater attention from policy makers (Commission on Social Determinants of Health, 2008; Scottish Government, 2008).

However, much of the evidence linking housing and health comes from observational studies; surprisingly few intervention studies have sought to evaluate the impact on health or well-being outcomes of attempts to improve either housing or area conditions. The available evidence from randomised control trials (RCTs) or quasi-experimental studies of housing interventions suggests that the effects of such interventions are small, but many studies suffer from methodological limitations (Thomson *et al.*, 2001). There is some robust evidence that housing improvements can have a positive impact, particularly on mental health (Thomson & Petticrew, 2005); however, little is understood about the *mechanisms* whereby such improvements deliver these impacts (Acevedo-Garcia *et al.*, 2004). Developing greater understanding of these mechanisms is important if more effective interventions are to be developed.

Mixed methods evaluations which incorporate qualitative methods are increasingly favoured as a means of investigating processes, outcomes and causal mechanisms in complex housing interventions (Acevedo-Garcia *et al.*, 2004; Thomson *et al.*, 2001). However, to date few such studies of housing interventions have been conducted. Thus there is a need for high-quality randomised or quasi-experimental evaluations of housing interventions which allow a greater degree of confidence in attributing impacts to the intervention, and for embedded qualitative research which provides greater understanding of the manner in which such impacts are delivered.

The SHARP Study

Scotland's Housing and Regeneration Project (SHARP) employed a quasi-experimental design to evaluate the impact of local regeneration and relocation to new-build social housing on health and a range of other outcomes. The study also included two phases of qualitative data collection to enhance understanding of respondents' experiences of housing relocation. Between 2001 and 2008, Communities Scotland (the Scottish agency then responsible for funding social housing) funded a programme of new-build social housing administered locally by independent Registered Social Landlords (RSLs). In some cases, this also involved large-scale regeneration of previously run-down areas. Although study participants could not in this instance be randomised, SHARP took advantage of this 'natural experiment' (Petticrew *et al.*, 2005) to track the experiences of an Intervention Group and a matched comparison for the duration of the study, both prior to and after they had experienced the intervention (data collection was conducted from 2002–2008). The intervention involved rehousing, and in some cases also relocation to a new area, for low-income groups; in Scotland as a whole 46 per cent of the population had an income below £15 000 p.a. in 2003/4 (Scottish Executive, 2005), while in the SHARP survey sample, the corresponding figure was 71 per cent. The study collected quantitative data from respondents via a questionnaire at three time-points; Wave 1 before respondents moved, and Waves 2 and 3 one and two years after the move respectively. At Wave 3, a total of 262 Intervention Group respondents and a further 285 respondents from the matched comparison group participated. The survey methodology is described in detail elsewhere (Petticrew *et al.*, 2008).

Two phases of qualitative interviews were also conducted with respondents from the Intervention Group. The first phase ($n = 28$) was conducted one to three years after respondents had moved, and the second ($n = 22$) was conducted three and a half to five years after moving. A different sub-sample was drawn for both phases of qualitative interviews. This paper focuses on the data gathered during the second phase of qualitative interviews. This phase of the qualitative research had a broad focus, aiming to explore a range of possible impacts of housing and area change on health, social and community outcomes. However, a particularly salient theme that emerged from the qualitative data was the impact of changes in dwelling type on psychosocial processes which, in turn, impacted on outcomes such as psychological affect, well-being and quality of life. These changes are the primary focus of this paper. Therefore, a brief discussion of the approach used here to define the term 'psychosocial' is followed by an overview of evidence on connections between dwelling type and affective outcomes, which frames the findings presented subsequently.

Defining 'Psychosocial'

The term 'psychosocial' has gained increasing currency in recent years, and is often appended to numerous other nouns such as 'factors', 'environment', 'outcomes', 'impact' etc. (Martikainen *et al.*, 2002). However, the disciplinary perspective here is a public health one, wherein a major paradigmatic advance in recent years has been the identification of inferior social comparison as a 'psychosocial risk factor' for ill health (for example, heart disease) and a partial explanation for health inequalities (Hemingway & Marmot, 1999; Marmot & Wilkinson, 2001; Wilkinson, 2000; Wilkinson & Pickett, 2009). Some of the leading researchers in this field have defined the '"psychosocial environment" as the sociostructural range of opportunities that is available to an individual person to meet his or her needs of wellbeing, productivity and positive self-experience' (Siegrist & Marmot, 2004, p. 1465). Particular interest is focused on whether an individual's interactions with their social environment enable them to experience self-efficacy (feeling that they are making a contribution, and experiencing control), and self-esteem (receiving feedback that strengthens feelings of belonging, approval and success).

Much of the research in public health examines how people respond to their psychosocial environment, and/or how that environment can be altered. However, in relation to psychosocial interventions, a recent review concluded that the term 'psychosocial' is generally poorly defined, and often used interchangeably with 'psychological' in the literature (Egan *et al.*, 2008). Nonetheless, research into people's interactions with their psychosocial environments tends to have focused on the work-place as a setting, and to have looked at a few dominant 'models' or psychosocial processes such as the 'demand-control-support' model or the 'effort-reward-imbalance' model (Marmot *et al.*, 2006; van Vegchel *et al.*, 2005). In this area of population health, the psychosocial effect is taken to be such that 'people's interactions with their social environments may influence health either directly (e.g. through biological responses to what is commonly called "stress") or indirectly through health behaviours' (Egan *et al.*, 2008, p. 240).

Having considered definitions of the *psychosocial environment* and *psychosocial processes* more generally in the public health field, it is possible to begin to see how housing, like the workplace, can equally be conceived of as a psychosocial setting.

This has been done in a number of ways in recent housing research studies that have explicitly discussed psychosocial factors.

In research founded on the 'meaning of the home' literature (Depres, 1991; Karjalainen, 1993; Rapoport, 1995) and the concept of ontological security (Dupuis & Thorns, 1998; Giddens, 1991), Kearns *et al.* (2000) examined whether particular aspects of the dwelling itself and its neighbourhood setting conferred a number of *psychosocial benefits* to the occupants. These benefits were conceived as three constructs: autonomy, haven and status, which are capable of being interpreted in relation to Siegrist and Marmot's outcomes of self-efficacy (autonomy and haven) and self-esteem (status). Interestingly, it was found that independent variables describing the reputation of an area and the people living in an area were stronger predictors of these psychosocial benefits than descriptors of the dwelling itself, highlighting the role of housing as part of a social environment more than as a personal environment.

Ellaway *et al.* (2004) took a more direct public health approach in a study which focused on the psychosocial process of comparison. They investigated whether occupants' perceptions of the value of their homes, in comparison with others in the same street, was related to psychosocial outcomes, including self-esteem and mastery (or self-efficacy), finding that those people who thought their homes were worth less than others reported lower outcomes on these and other measures. Again, the social and relative status of housing is emphasised through this work.

Quite differently, in an intervention study of housing improvements to a council estate, Thomas *et al.* (2005) looked at how the effects of improvements interacted with the incidence of *psychosocial risks* to cause mental distress among residents. Their conceptual approach was to consider that both persistent states (such as characteristics of the physical/social environment, or personal vulnerability such as a limiting disability) and events could comprise psychosocial risk factors for the onset of mental distress. Significantly, they considered that individual perceptions, or 'reactions to current life circumstances' could also constitute such 'events' or psychosocial risks. They identified three *psychosocial pathways* in or out of mental distress: 'restricted opportunity' or failure to achieve personal goals; powerlessness, loss and humiliation; and, finally, new hope or a fresh start as a positive pathway to better outcomes. In their study, they concentrated on the first of these pathways, restricted opportunities, using an 8-item measure; two of these items were housing-related: 'wanted to move and could not' (which they term 'entrapment'); and 'wanted to improve living conditions but could not'. They found that 'better mental health outcomes were associated with low personal assessments of psychosocial risk' (p. 2779).

This study concerns one of the other pathways identified by Thomas *et al.*, namely the potentially positive pathway of a 'fresh start', delivered in this case by residents moving to a newly constructed home. In this, the term 'psychosocial' is taken to refer to the interaction between the social (i.e. the external world) and the psychological (at the level of the individual). This may relate either to processes resulting from this interaction, or to the outcomes of such processes. In line with the public health perspective outlined above, and akin to some of the earlier work in the housing field, psychosocial benefits or outcomes can be considered as pertaining to an individual's perspective(s) on his or her social position and well-being in relation to interactions with other people; it is a view of those aspects of one's own quality of life which lie at the interface between the self and others, involving both comparisons of circumstances and control and influence over social relations. Thus, it

would include, for example, outcomes such as privacy, retreat, autonomy, status and personal progress. These are all perceptions founded on psychological processes rooted in immediate social circumstances.

It is not clear that psychosocial processes will necessarily feed through to mental health outcomes (in a clinical sense), although they might contribute to affective outcomes such as mood, sense of well-being and quality of life, which are now accorded greater prominence in policy aims. Glass' (2000) review of 'psychosocial' interventions suggested that interventions which acted on the external environment in such a way as to increase recipients' control over their immediate surroundings could deliver positive mental and physical health outcomes. Furthermore, a Vancouver study found that lower levels of control over housing were correlated with poorer mental and physical health (Dunn, 2002). In such cases, the exercise of control could be seen as the psychosocial process linking the external environment and the individual's internal state, whilst the individual's perceived level of control can be considered an intermediate psychosocial outcome potentially contributing to affective outcomes such as mental well-being. Control is one of a number of psychosocial factors affected by housing type, albeit a very important one as we shall see later.

The Impact of Housing Design on Mental Health and Well-being

Some authors have suggested that specific aspects of housing design may impact on well-being or mental health (Evans *et al.*, 2003); factors such as dwelling type and street layout may impact on mental health via psychosocial processes linking the external environment to affective outcomes. Evans (2003) hypothesises that living in high-rise or multi-unit dwellings (that is housing units occupied by a number of separate households), may impact negatively on mental health through the processes of personal control and social support. For example, lacking the ability to exert territorial control over shared spaces may result in diminished informal social control, and lack of shared space that provides opportunities for social interaction may lead to decreased social support. Cross-sectional studies provide evidence of association between such factors and mental health outcomes, although this is moderated by other factors such as area characteristics and respondents' SES (Evans *et al.*, 2003; Weich *et al.*, 2002). However, there have been few studies which have attempted to identify such psychosocial processes, or to investigate mechanisms linking housing and mental health (Wells & Harris, 2007). Similarly, few studies of the effects of relocating to new homes provide information on the dwelling types involved (Thomson *et al.*, 2001).

Several studies comparing the health of people who moved into high-rise or multi-family housing with that of people who moved into low-rise or detached housing found that mental health outcomes were worse for those in the former groups, but these studies tend to be small or to focus on quasi-institutional populations such as students (Fanning, 1967; McCarthy & Saegert, 1979; Wilcox & Holahan, 1976). The cross-sectional West of Scotland survey indicated that those who lived in a house as opposed to a flat, and those who had access to a garden, derived greater psychosocial benefits from their home (Kearns *et al.*, 2000). Qualitative evidence from the same study suggested that living in a house with a garden afforded respondents greater autonomy (Hiscock *et al.*, 2001). Wells & Harris' small ($n = 50$) uncontrolled longitudinal study (2007) found that the psychosocial process of social withdrawal mediated the impact of housing on psychological distress.

Respondents in observational qualitative studies have reported links between aspects of the built environment, well-being and mental health. Such reports provide insights into lived experience of the relationship between dwelling type, other features of the built environment and well-being. In Day's (2008) qualitative study of older Scottish people, respondents reported that large blocks of flats discouraged social interaction, linking this to poorer mental and physical health. Other qualitative studies have found that aspects of the built environment such as high-rise dwellings, visual amenity, access to green space and spaces which permit social interaction are identified by respondents as impacting on well-being, quality of life, and in some cases by extension, mental health (Cattell *et al.*, 2008; Day, 2008; O'Campo *et al.*, 2008; Thomson *et al.*, 2003; Warr *et al.*, 2007).

These qualitative studies report respondents' perceptions of existing conditions. Qualitative research in intervention studies allows respondents to reflect on their experiences of change resulting from the intervention. The combination of qualitative and quantitative data in the SHARP study provides insights into the manner in which the intervention impacted on the respondents, and permits consideration of the interplay between qualitative findings and quantitative outcome measures. This paper focuses primarily on the qualitative findings, while also considering how they relate to the quantitative results. To this end, a brief synopsis of relevant survey outcomes is presented before the qualitative methodology and findings are considered in detail.

Wave 3 Survey Outcomes

The survey findings at Wave 3 compared changes over time in the Intervention Group with changes in the matched comparison group, allowing a high degree of confidence in attributing impacts to the intervention. They showed that the biggest change experienced by many of those rehoused into a newly-built dwelling was to move from a flat to a house; the number occupying a dwelling with a private entrance and garden as opposed to a dwelling with a communal entrance and no private garden increased from 38.4 per cent to 75.6 per cent (Petticrew *et al.*, 2008, para. 6.21). There were big relative improvements in housing condition for those rehoused, with an average 59 per cent reduction in dwelling problems among the Intervention Group (Kearns *et al.*, 2008c, para. 2.19). The biggest housing condition gains were in relation to weatherproofing, warmth and state of repair. Neighbourhood and social conditions also improved (e.g. lighting, traffic, noise, vandalism, burglary and drugs).

Small relative gains in self-reported health among those rehoused compared with the comparison group were not statistically significant (Kearns *et al.*, 2008a, Table 2.1). Similarly, overall, there were no significant differences between the two groups in mental health scores (measured using the SF-36 instrument) (ibid. Table 5.1). However, those who moved from a flat to a house reported greater improvements in self-rated health than other groups (not significant), and those who acquired a garden reported a significant improvement in SF-36 social functioning (ibid. Table 5.2) and a much lower probability of loneliness (Kearns *et al.*, 2008d, Table 7.2) The most notable gains were in relation to psychosocial benefits of the home, which improved significantly among the Intervention Group as a result of rehousing (psychosocial benefits were measured using a scale of 10 items covering: privacy, retreat, freedom, status, control, personal progress, security, routine, safety and identity). A 30 per cent relative increase in psychosocial benefits among the Intervention Group was compared with no change among the Control Group.

Gains in psychosocial benefits from the home were more commonly reported by those who gained a garden as a result of being rehoused (ibid. Table 4.7).

Qualitative Methods (Phase 2)

The second phase of qualitative interviews explored the impacts of housing and area change on health, social and community outcomes from the perspectives of the respondents. As noted earlier, dwelling type was not an *a priori* focus of this arm of the study. However, the impact of dwelling type on affective outcomes was a theme that emerged from the data while the research was in progress, and which is the focus of this paper. Accordingly, the remainder of this paper sets out to:

- investigate the impact of changes in dwelling type on psychosocial processes and outcomes;
- consider the ways in which the qualitative data illuminate the mechanisms whereby this intervention impacted on these psychosocial processes and outcomes.

Interviews were conducted between August 2007 and January 2008, three and a half to five years after respondents had moved, to minimise the influence of the moving process on respondents' views. Respondents were drawn from the survey sample and recruited via a mailing and a follow-up phone call. One-to-one in-depth semi-structured interviews were conducted with respondents in urban areas (primarily Greater Glasgow).

The study was approved by the University of Glasgow's Law, Business and Social Science Faculty Research Ethics Committee. The interviews were primarily conducted in respondents' homes. In most cases, only the respondent was present during the interview. However, on three occasions the respondent's partner was also present. Respondents were provided with a shopping voucher to the value of £10 to thank them for their time.

The interview schedule aimed to investigate the broad areas of housing and area change and attendant impacts on health, well-being, social and community outcomes. The issue of health impacts was not introduced until the end of the interview, to avoid prompting such responses and to assess whether respondents referred to health issues spontaneously. Prompts and probing questions were used to investigate topics of particular interest further. Interviews varied in length from 20 minutes to one and a half hours. The interviews were recorded and the recordings were professionally transcribed. The software package NVivo 7 was used to conduct a thematic analysis of the data, based on Seale's method of qualitative content analysis (2004). This involved identifying the overarching themes of interest in the research context, then coding text in the interview transcripts that corresponded to these themes. The coded text was examined in detail to identify emergent themes within the data, which were then sub-coded prior to identifying connections between emergent themes and respondent characteristics.

Characteristics of the Sample

The sample was diverse in terms of age and economic status, although the proportion of female respondents was high. Table 1 illustrates the demographic characteristics of the sample. Reasons for moving to new housing varied; some respondents were rehoused when their existing housing was demolished (7), others had been transferred due to health problems, anti-social behaviour, overcrowding or under-occupation, or to be nearer to

Table 1. Demographic characteristics of qualitative sample

Demographic characteristics	*n*
Household type	
Adult no children	8
Family	8
Elderly	6
Gender	
Male	3
Female	19
Age	
30–39	3
40–49	4
50–59	8
60–69	3
70+	4
Employment status	
Full-time employment	5
Part-time employment	4
Full-time homemaker	1
Sick or disabled	7
Retired	5

family (12 in total). Three respondents had not previously been social housing tenants; two had been homeless following marital breakdown (one had been resident in a women's refuge, and the other had been staying with family), and one had been an owner-occupier in accommodation that was unsuitable for health reasons. Table 2 provides an overview of the previous housing conditions and reasons for moving of the sample members.

A Note on Terminology

Since terminology relating to dwelling types varies internationally, it will be useful at this stage to provide some clarification regarding the usages employed here. The principal dwelling types referred to are 'houses' and 'flats'; 'house' here means a detached, semi-detached or terraced dwelling with a private entrance and garden. This category also includes what is known locally as a 'cottage flat', or 'four-in-a-block' dwelling, wherein a building contains two upper- and two lower-level flats, each with a private entrance and an area of garden grounds for the exclusive use of each resident. 'Flat' means a dwelling which is perhaps more commonly referred to internationally as an 'apartment', that is a building containing a number of private residences over several floors reached via a shared central stairwell. These therefore do not have private entrances or gardens. In Glasgow, many flats are contained in Victorian 'tenement' buildings, which are typically constructed of sandstone, although some tenements were built after the Second World War of more modern building materials. In tenement housing, each unit is reached from a central stairwell, and there are typically seven or eight apartments over four floors, This stairwell is commonly referred to as a 'close' in Glasgow; however, the term can also apply to a dwelling with this style of entrance. In order to avoid any confusion between the uses of the term, explanations are provided where the word is used in respondents' quotes.

Table 2. Housing characteristics of qualitative sample

Housing characteristics	*n*
Problems in previous accommodation	
Overcrowding/under-occupation	4
Overcrowding/damp	1
Damp/cold/ASB	4
ASB	4
Disability	2
Disability/cold/ASB	1
Isolated	2
Homeless	2
None	2
Reason for move/transfer	
Regeneration	7
Overcrowding/under-occupation	2
ASB	3
Health	5
Homeless	2
Closer to social network	3
Relocated to different area (y/n)	
Yes	11
No	11
Dwelling type transition	
Flat to house	13
House to house	2
Flat to flat	5
Previously homeless	2

Note: the above sample information refers to the whole qualitative sample. The respondents discussed in the paper are the 13 who were moved from a flat to a house.

Findings

The following sections report the findings of the qualitative interviews, focusing particularly on the manner in which respondents who moved from flats to houses attributed changes in their mood, quality of life, well-being and mental or physical health to changes in their housing environment. It is argued that these changes took place as a result of psychosocial processes linking physical alterations in living conditions to changes in affective and other outcomes.

Housing Improvement

Participants described a number of problems with their previous accommodation, including damp, inadequate heating, anti-social behaviour (ASB), overcrowding and accommodation unsuitable for their health needs. These problems had abated considerably in the new housing. Only a few respondents now had problems with poor soundproofing, ASB or noise external to their home.

Most of the respondents were extremely positive about their new housing. Only one respondent, whose experience is reported at the end of this section, was not happy with her new home. Quotes such as those below reflected the experience of the other respondents:

> I love it. As I said, I wouldn't move. You know, I love this area, I love the house, you know, and I just wouldn't move unless … we won the lottery. (Female, 40–49 yrs)

> Everything about it I really love it. I'm always waiting, saying I'm going to wake up and find it's a dream. (Female, 70–79 yrs)

Greater warmth, improved space and having a brand new home were factors cited by respondents as contributing to their satisfaction with their new homes. In total, 13 participants who had previously lived in flats had moved into houses following the intervention. Those who moved into flats also reported improved affective outcomes, such as mental well-being and mood, arising from the move, but these were often connected with changes in their life circumstances occasioned by moving (such as being nearer to social networks) rather than changes to the physical structure of the housing. By contrast, for many of those who moved from flats into houses, factors associated with the physical structure of the building were cited more often. Since the impact of moving from a flat to a house is the topic of interest in this context, the focus will be on those 13 respondents who moved from a flat into a house with a garden.

The Impact of Changes in Dwelling Type

Respondents were quite explicit about the impact of moving into a house on their mood and quality of life:

> Well I'm better at, I feel better in myself. But you know on the whole, and I feel it's just a better way of living and I've got a better quality of life from when I've moved in here from what I did round the corner, aye and I like it, I wouldn't go back to a tenement. And it's just a lot better. (Female, 50–59 yrs)

> Well the other houses were flats. Whereas you have your own back and front door, your own back garden … [husband speaks] It's 100% better. (Female, 50–59 yrs)

Key aspects of living in a house which appeared to engender improvements in affective outcomes such as mental well-being, quality of life and mood were having a private main door entrance, having a private garden, and changes to the layout of streets inherent in the transition from flats to houses. Each of these changes in housing design is discussed in turn, accompanied by quotes to illustrate respondents' experiences of these changes.

Private Entrances

Acquiring a private entrance led to a significant increase in privacy and security, which in turn increased respondents' feelings of control and of safety. The majority of the respondents had previously lived in Victorian tenement flats or post-Second World War low-rise flats. Although many of these flats had been fitted with secure doors at the foot of the stairs, these were often damaged or broken. The stairwells were neither private nor public space, so that it was difficult to eject interlopers, and since they were enclosed spaces, they provided space for strangers to hang about, often drinking, taking drugs, making noise and littering. One respondent described the impact of living in a tenement,

and her frustrated attempts to exercise control over her immediate environment, explicitly linking moving from a flat to a house with improvements in her quality of life and confidence:

> Well, my life's got better. I've got a better standard of life as well. I can just … if you sit in a tenement, you feel downtrodden, do you know what I mean? Your confidence is not very high because you're constantly looking about and it's just … it's glum, everything round about you's glum, the people are glum, the tenements are glum, there's graffiti, the bins are disgusting and one time we actually me and my sister went out and painted the close [communal entrance] inside and got rid of all the graffiti because we were saying I couldn't live here any more, I need to get rid of all this, and within a month half of it was all back again. (Female, 40–49 yrs)

However, having a private entrance had increased her sense of control:

> Aye, you have, you know that if anybody comes to your door that they're not … there's no reason for them to come down your path unless they're coming to your door … I feel better in my own house, more control … If somebody was to walk up and start graffiti-ing on my front door right now, I would be out there, 'what do you think you're doing? How dare you. Beat it. Get away from here!' you know? Aye, that's mine, that's my private place. They can't just walk in and do what they like with it. (Female, 40–49 yrs)

Other respondents linked the increased privacy afforded by a private entrance to reductions in stress:

> Free minded, if you can call it that way … an awful lot free minded you know. More relaxed and that kind of thing … but I think when you're up in a tenement type you didn't have the same privacy that you've got here. In a tenement, you know you've got people up the stairs who for whatever reason didn't kind of wash the stairs or they had undesirables coming up the stairs and it left a lot of stress levels whereas in here you've just got your own front door to manage. I think it's a lot better. (Female, 50–59 yrs)

Whilst others explicitly attributed improvements in their physical health to such changes:

> I think it's [my health] actually better. That's how I'm saying. It's different from the close [dwelling with communal entrance], you know? You're not up during the night with doors banging and people running in and out all night and you can't get asleep. (Female, 50–59 yrs)

The problem of unwanted interlopers in housing with shared entrances was a theme that recurred frequently, and was described as causing extreme stress, fear, and disturbed sleep. By contrast, private entrances provided respondents with defensible space which permitted them to monitor and control entry to their property. Increases in privacy and security provided by private entrances impacted on affective outcomes such as well-being, quality of life, stress levels and mood through the psychosocial process of control.

Streetscapes

It also seemed that changes to the layout of streets occasioned by moving to houses decreased the perceived frequency or impact of ASB in two ways. First, the streetscape inherent to housing of this type permitted greater external visibility, which acted as a deterrent to anti-social behaviour in the vicinity of houses:

> here you just come out the front door and you've got your drive and there's nothing else there … if it's out in the street, people will see them. If you're up a close [dwelling with communal entrance] you don't know what's going on. (Female, 40–49 yrs)

Second, it was suggested that although ASB continued to occur, it did not affect respondents so badly because the layout of the streets around houses helped to distance them from it:

> That doesn't bother me, but. It's off the close [dwelling with communal entrance]. In the close, it's different. Outside, it doesn't bother me. I shut my door and my windows and that's it, I don't bother. (Female, 50–59 yrs)

The greater visibility of external areas provided by the street layout around houses seemed either to decrease anti-social behaviour, or to decrease respondents' perceptions of ASB, whilst the existence of a private area around houses acted as a buffer which decreased the impact of ASB.

Private Gardens

The flats previously occupied by respondents who moved from a flat to a house rarely provided access to a private garden. Generally these flats have a communal area behind the building (known as the 'backcourt') containing garbage bin shelters and drying areas. While children often play in these areas, it is less common for adults to use them for leisure. Respondents recounted that these areas were often dirty, and, since they were communal play areas, also noisy. Gaining exclusive use of a private garden was described as having substantial impacts on a number of respondents. Private outdoor space and improved security emerged as positive aspects of having a garden. Levels of sociability were also influenced by having a private garden, but the manner in which they were influenced, and respondents' feelings about the consequent changes, varied quite considerably. As with private entrances, respondents identified explicit connections between gardens and improvements in mood or quality of life.

Respondents had found the lack of control over who entered shared gardens (or 'back courts') of tenements stressful, reporting incidents such as windows being smashed and people shouting. The demarcated outside space acted in a similar way to having a private entrance, in that it represented defensible territory that strangers did not enter. As a result, respondents felt less vulnerable to ASB and crime. One comment exemplifies the role of private gardens both as a relaxing space and as a buffer, which protected the respondent and her husband from ASB:

> And even summer time I can sit out on the front, [husband]'s got a patio there and we built a patio in the back garden as well so it's good relaxing in the sunshine because in that old house, we could sit in the back garden, or the back court, you know … people passing by and the boys playing football and the girl with the window got smashed, so, and that kind of thing, so we don't miss that. (Female, 50–59 yrs)

One respondent's description of her garden illustrated that while having a pleasant place to sit outside was a key advantage of having a garden, gardens could also fulfil a number of other functions, all of which contributed to an improvement in mood. Thus the functions of the garden were interconnected and mutually reinforcing:

> waking up in the morning and especially in the good weather just opening the back door and hanging your washing out there and then and sitting out basically because we never had a front garden like that and like just sitting there reading a book or something like that and everybody's passing and the kids are out playing know what I mean it just makes you that wee bit cheerful. (Female, 30–39 yrs)

The impact of gardens on levels of sociability varied, as did respondents' reactions to these changes. A welcome increase in sociability was experienced by some, while others found that their level of control over social interaction had increased, a change which was again welcomed. Others, however, regretted a decrease in levels of socialising with their neighbours, which they attributed to no longer living in a house with a communal entrance. Again, those who welcomed such changes linked them to improved well-being or quality of life:

> Oh, aye I've got a back and a front garden. Oh great, it's like a front and back door, although it's a … you've got a back door. You can go out and sit in your garden … I just … feel a lot better. Oh aye, it's a good effect, aye … You sit out there during the summer, and see your neighbours … It's still nice. As soon as you come in with your messages. You're still in the house, this way you can sit in your garden, talk to your neighbour, have a good day. You couldn't do that in a tenement. (Female, 50–59 yrs)

One respondent, who believed that acquiring a garden had improved both her respiratory health condition and her quality of life, related the manner in which moving to a house had transformed her relationships with neighbours:

> As I say you can go out and sit in the garden and read your book or whatever. I get more fresh air if you know what I mean. You've got a better quality of life. Before I would have been stuck up the close [dwelling with communal entrance].
>
> Most of them, truth be told I didn't know half of them. Honestly but like the lassie next door she said 'I just stayed in a couple of closes away from you' [i.e. several doors away, but in the same block], I said 'did you?' And yet I know her more now I see her more than I did when I stayed round there for three years … I think it's because we were up a close and everybody just kind of went in and out and that was it and you didn't have the out there, and you go out to the motor or you're

> doing the garden so somebody's out and they are blethering [chatting] to you. (female, 50–59 yrs)

For some, like the woman quoted above recounting past incidents such as windows being smashed by children playing football, no longer having to interact with neighbours when using the garden was experienced as a relief. Similarly, one man who enjoyed having outdoor space for himself and his children commented that it provided 'more space, but you can still retain your privacy' (male, 30–39 yrs).

However, some respondents related that they socialised less with their neighbours than previously, a change which they regretted but were nonetheless philosophical about:

> Well, it was sad, because obviously you're up a close [dwelling with communal entrance], you were close [i.e. available for social support] to neighbours and you always, you always seen either one or more neighbour every time you come in from the work or wherever, and that is the difference up here because we don't see them as much, don't see them as much neither you do. But em, I'm quite happy, I'm quite happy. (female, 40–49 yrs)

It seemed that these differences resulted from quite specific features in the layout of gardens, which lent themselves to different levels of sociability. For those who experienced increases in sociability, the layout of gardens was relatively 'porous', allowing visibility of people moving around outside and using their gardens. There were fewer clear divisions between front and back gardens, and space at the front of houses was large enough to allow its use as a leisure area. By contrast, those who experienced decreases in levels of sociability (whether welcome or not) tended to have front gardens which were smaller and essentially decorative. The more functional gardens at the rear of the houses were entirely enclosed, having high fences that hampered visibility.

Acquisition of a private garden was linked to increased control over who entered respondents' private space, and for some, over social interaction with neighbours. For others, greater visibility of neighbours led to increased sociability. In general, having access to private outdoor space seemed to provide opportunities for relaxation not previously available to flat dwellers. All of these factors were linked in turn to improved well-being or quality of life.

Contrasting Experience

In contrast to the other respondents, one woman was extremely unhappy about moving, reporting that relations with her neighbours (who moved into the same housing) had deteriorated. She attributed this change to moving from a tenement to a house, and felt that this had destroyed the previously existing sense of community. It was difficult to discern why her experience differed so markedly from that of others. Further probing revealed that she was also puzzled about this change. One possibility is that the process of settling in is more protracted for some people than for others; although she was extremely attached to her old home, she had not liked it at first either. It is also possible that, given her attachment to her previous home, the process of relocation had entailed a loss of control. Although it is difficult to identify why moving to a house was such a negative experience for this respondent, it serves as a salutary reminder that there is always a complex interplay

between individual characteristics and changing environments, and that it is important to provide housing which meets the needs of individuals.

Discussion

The qualitative data gathered in this study suggest that very specific aspects of the built environment such as housing design and street layout can impact on mental well-being and quality of life by altering key psychosocial processes such as control, privacy and sociability. In so doing, they also help to illuminate some of the mechanisms whereby this intervention impacted on psychosocial benefits for the quantitative survey respondents, and may point towards explanations for the improvements in mental health outcomes reported in other quantitative studies of housing interventions. Moving from flats into houses increased qualitative respondents' sense of well-being, in ways that some linked explicitly to improvements in mental and sometimes physical health. In particular, features of houses such as having a private entrance and access to a private garden appeared to promote control and sociability, as well as providing outdoor space in which to relax. The altered streetscape that accompanied these changes appeared to lead to a reduction in perceived anti-social behaviour. Gaining an increased sense of control emerged as particularly salient in mental well-being.

The quantitative survey data also indicated that respondents who moved from a flat to a house experienced a significant increase in psychosocial benefits derived from the home (albeit conceptualised and operationalised differently; for an outline of the approach taken in the survey, see Kearns *et al.*, 2000). Furthermore, for those who acquired a garden, SF-36 social functioning (one of the SF-36 mental health dimensions) increased significantly, and reported loneliness decreased significantly. Other qualitative findings were less congruent with outcomes in the SHARP survey. The survey suggested that those who moved from a flat to a house experienced a smaller increase in sense of control (measured with the Pearlin Mastery score) compared to the rest of the Intervention Group, in seeming contrast to the increased control reported by the qualitative respondents. It is possible that control over the immediate residential environment does not map on to the social situations and life-course issues included in the Pearlin scale. Similarly, other than SF-36 social functioning, there was no significant change in SF-36 mental health dimensions for those who moved from a flat to a house. Given the hypothesised links between psychosocial processes and mental health, this is somewhat counter-intuitive, although it is possible that such impacts had not yet manifested within the two-year follow up time of Wave 3 of the survey. Alternatively, the SF-36 measure used in the survey may have been unable to detect the subtle changes elicited by the qualitative interviews, or as discussed below, the qualitative sample may have been somewhat predisposed to positive affect.

The effects of changes in dwelling type, and importantly also of the structural correlates of dwelling type (i.e. visibility, street layout, green spaces and visual amenity), were also reflected in the quantitative data in terms of increases in collective efficacy and feelings of safety for those who moved from flats to houses (Kearns *et al.*, 2008b). Similarly, Maas *et al.* (2009) found that loneliness was correlated with lack of green space in their large study of Dutch young people, and Kleinhans *et al.* (2007), in their study of restructured neighbourhoods in Rotterdam, found that social capital was positively associated with residence in single-family housing. The recent longitudinal study by Mitchell & Popham (2008) investigating the impact of green space on health inequalities suggested that access

to green space may help to mitigate some of the effects of area deprivation. It is possible that features of the built environment such as housing design, access to outdoor space, garden layout and streetscape may have similar effects.

Overall, the qualitative data help to illuminate the manner in which this housing intervention impacted on its recipients, and in particular shed light on the processes whereby moving from a flat to a house impacted on affective outcomes, including the survey measures of psychosocial benefits, social functioning and loneliness. They also lend support to hypotheses regarding the mechanisms whereby high-rise or multi-family dwellings are associated with poorer mental health outcomes in cross-sectional studies (Evans *et al.*, 2003; Weich *et al.*, 2002).

However, these findings also highlight the importance of area effects. It is clear that for these respondents, much of the improvement in quality of life was associated with escaping from 'closes' in tenements, which they had found extremely stressful. Tenements are one of the predominant styles of housing in Glasgow, and many people who live in more affluent areas of the city also live in tenement flats accessed by a 'close', but experience few of the problems described by the members of this sample. As Thompson-Fawcett (2004) points out, 'tenements vary significantly in quality, from salubrious, ornate and spacious housing for the privileged to very basic and cramped apartments for the working class' (p. 189). It is clear that it is not solely the physical structure of housing which has a bearing on quality of life, but also the wider context in which the housing is situated. Nonetheless, for these respondents from lower-income groups, the alteration in housing type and street layout experienced by those who moved from flats to houses appeared to mitigate some of the effects of area deprivation.

In common with other qualitative research, the findings of this phase of the study are to some degree context-specific. Recruiting for this phase was quite challenging, suggesting that research fatigue may have set in amongst people whose participation in the study by then spanned several years. Thus it is possible that there was a degree of selection bias at this stage, as those who agreed to participate may have been somewhat disposed to positive affect. Indeed, this is an issue that may affect any study where a qualitative sample is drawn from a wider longitudinal survey sample. However, the congruence of the qualitative findings with those of the wider survey lends support to the overall conclusions. Overall, the SHARP study, by employing quasi-experimental methods in combination with qualitative investigation to evaluate a housing and regeneration intervention, contributes much to our understanding of the connections between housing and health, and of the mechanisms which link alterations in housing conditions with changes in health.

These findings suggest that further exploration of the impact of factors associated with dwelling type on well-being would be warranted. In particular, housing intervention research that directly compares the impact of moving into different types of housing would yield greater insights into the relationships between dwelling type and health. Similarly, further research on the impact of factors such as access to outdoor space would be of interest. The data available for Mitchell & Popham's (2008) study on green space are unable to differentiate between private and public green space; the data presented here suggest that private outdoor space potentially confers greater benefits than public space.

In terms of housing policy, the findings indicate that the move by Registered Social Landlords to provide more houses and fewer flats in recent years (largely as a response to tenant demand) is justified in terms of the impact on psychosocial processes that delivered benefits to tenants. However, given that building houses is costly in terms of both land use

and resources, this may not be a realistic objective for housing policy more broadly. Policy makers could consider how to deliver some of the beneficial aspects of houses to flat-dwellers in greater numbers, as a support to positive mental health. This might include, for example, landscaping to provide more private areas in shared gardens; providing allotments nearby for residents so that the benefits of private outdoor space and sociability can be attained; and funding concierges and street wardens to provide increased control over shared entrances and low-visibility streets. In these ways, more low-income residents might enjoy the psychosocial benefits that this study identified among people rehoused into new-build houses.

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