

# **Qualitative Study of Central Heating – its influence on the use of the house, the behaviour and relationships of the household particularly in wintertime.**

Meryl Basham. MSc Cert.Mgmt(Open) on behalf of the Torbay Healthy Housing Group

## **Background**

The Torbay Healthy Housing Group - Watcombe Housing Project, is a randomised controlled trial 1999-2002, researching the influence of house improvements <sup>1,2</sup>. An additional dimension was identified for a qualitative study to explore any differences the installation of central heating had made to people's every day lives and health from their perspective.

## **Introduction**

As it has been estimated that people spend 70% of their time in their own homes <sup>3</sup> it is not surprising that poor housing can have an effect on health. The association between damp housing and asthma has been well recorded in a review of studies by Billings <sup>4</sup> and links have been shown in longitudinal studies <sup>5</sup>, that quality of housing affects adult health even if, following early childhood in poor conditions, housing is improved in adult life. Much of this research used quantitative methodology but Thomson et al <sup>6</sup> in a review of studies suggested a more subjective, holistic approach combining quantitative and qualitative methods was needed. There remains a lack of information about the costs and effects upon the household of specific improvements such as central heating, although Gemmell <sup>7</sup> found an association between inadequate heating and poor health of study participants 55-60 years. The Cornwall Project <sup>8</sup> also found some health gains, in children with respiratory illness, following installation of central heating. This study is intended as an important starting point to explore associations between installation of central heating and interactions and relationships within the household.

## **Method.**

A pluralistic method was used, including grounded theory<sup>9</sup> to reflect the variety of social reality. A purposive sample of households was identified to give a focus on a particular set of circumstances that may enable associations to be made with the wider population<sup>10</sup> i.e. Households who reported that they had no heating, in the postal baseline survey of the Watcombe Housing Project<sup>1</sup> other than in one room downstairs (31 households). The subset was: those with two children or more because of the issue of space having more impact than on single or couple occupancy. (17 households). It has to be noted that all the households interviewed already had double glazed windows installed several years previous to the improvements made as part of this study. The new improvements included, upgrading of roof and cavity wall insulation, electrical upgrade, double glazed doors and ventilation fans in the kitchen and bathroom.

Ethical approval was gained for the study from the Torbay Local Research Ethics Committee and permission given by the Riviera Housing Trust that manages the social housing stock. Written consent was obtained from all interviewees with the interviews taking place in people's homes apart from one at the local housing office, during June/July 2001, and were based on the 'telling' of people's experiences pre and post central heating, to gain a deeper understanding of the context of interactions and social behaviour, why they occur and how they are manifested<sup>9,11</sup> The house improvements were in two phases: 1 - Sept/Dec 1999 giving 18-21 months with their heating, and 2 - Sept/Dec 2000, giving 6-9 months.

## **Analysis**

Open coding and the conditional matrix were used to link and identify categories and to evidence how these related to each other<sup>9</sup>. Concepts were defined in the context of social behaviour, and how they could relate to the wider population. The taped interviews were transcribed verbatim and the resulting scripts analysed using an iterative and reflexive approach. Inter-rater comparison was used to assess the reliability of the coding and thematic analysis.

## **Results.**

A 'pilot' interview took place, which resulted in several key issues being raised:

- The effect that cold/damp/condensation has on mental and physical well-being.
- Social interaction and the importance of how the house is perceived by others
- Use of space in the house and the impact upon relationships
- Household management and maintenance

Of the 17 households in the subset approached: 10 households agreed to participate. However, of these one household had indicated no central heating, when in fact they did have two radiators downstairs i.e. kitchen and living room but similar issues were reported so they are included in the analysis. Unfortunately, one interviewee died so that interview has been excluded.

Details of the size of the house varied although all had 3 bedrooms apart from one with 4, and the number of children also varied to between 2 and 5 per household.

Responses varied with some people discussing personal relationships, others preferring not to. Four interviews were with male and female partners together, five with females alone, (2 being single parents). Each began with the same retrospective question i.e. 'What was it like to live in your house pre central heating ' and 'What is it like now, post installation of central heating?' The issues raised were wide ranging, and the following concepts identified:

- **Parenting and Providing** - provision of warmth; safety; nurturing, and an acceptable, (by cultural norms) environment in the home
- **Maintenance and management of the house**
- **Spreading out and doing things** – encompassing the changes in the use of the house and the impact this had on relationships
- **Feeling good and maintaining relationships.**

## **Role of the parent as provider and carer**

Pre central heating most households confined themselves to one heated room with a reluctance to move from there into the rest of the cold house. There was a sense of surviving the cold - almost a siege mentality. The strong, descriptive language used indicates this: "*Freezing*" was frequently mentioned, and households with several children used words like "nightmare", and "conflict all the time" to describe being in one heated room.

Having a damp, cold house had an impact on people's sense of well-being and how they perceived their house. Some indicated that felt excluded from what was perceived as, 'normal' society. "*...everyone should be entitled to a warm house shouldn't they*". Suggesting that if they didn't have this they were 'losing out' as it should be a right available to everyone *and "...it's like living back, I don't know thirty or forty years ago wasn't it, when they were doing that and it's messy*". [using a coal fire]. The language used inferring that interviewees felt "wronged" by not having the same comforts that are accepted as the 'norm' in a modern society.

Descriptions of strategies to conserve heat included:21"*...we'd be sat here with coats on us...*" 3"*...we'd be cuddled up with our jumpers on top of jumpers...*

Post central heating attitudes changed. One interviewee strongly said: *Male3*"*...we're like a normal family now, you know, now we can do normal things...we're walking round in a t shirt*".

Several householders felt frustrated by not being able to afford to install central heating, again inferring that they were not providing for their family.

Parents were well aware that the frustrations they felt sometimes spilled over into anger with their children as the following indicate. 38 "*...I was always shouting at them, and I know it wasn't their fault*".

3 "*...because I used to say SHUUUUUT UP*".

For some households damp/condensation and mould was a factor that caused additional stress and negative feelings about their house, because of how it looked and the impact on the health of their children. The latter has

already been demonstrated by Platt et al <sup>12</sup>and was particularly true of those children with a predisposition to respiratory illness. 21 "*moved the kids' bedroom because it was really cold and damp*", and "...*she'd wake up coughing all night, I mean obviously because of the damp in the house*". 3. Child 10yrs – "*Used to suffer an awful lot, with breathing difficulties*". 42 "*...he used to get asthma*".

The cold also had an impact on children's sleep patterns: 21 "*every night it'd be the same they'd wake up cold... so I used to have to put them in my bed.*" 3 "*...before they would come in [to parent's bedroom] and say they were cold...*" resulting in sleep deprivation for both parents and children. Post central heating this problem had reduced considerably: 3 "*...they actually sleep better at nights as well*". Mother speaking to child - 38 "*...you do sleep better*". "*When it was cold you were always waking up...*" 42 "*They sleep, in their own rooms now, before they would creep into our bed*".

### **House Maintenance**

Negative feelings about the house tended to inhibit its maintenance. Pre central heating comments indicated that householders had little pride in their house as it was "*smelly damp*" and 9 "*...it's live mould and it's not nice, and could perhaps affect health*". The number of people in households did not indicate an association with damp/condensation, as a household with seven people had none whilst another household with six people did.

Post central heating, all houses bar one (needing repairs to a downfall pipe), reported that damp was no longer a problem. The majority of households commented on how their social life and motivation to maintain the house had changed

38 "*You can have friends down, before you couldn't because the house was in such a mess. A bit embarrassed to have anybody round really*". "*Well getting the house straight, ... now it's all nice and warm*".

42 "*I've found that I want to do more to the house, whereas before, we weren't happy, I suppose because we were cold, ... but now we want to decorate it and make everything look nice*".

3 “Now we feel more confident that if we put decent paper up it it’s going to stay decent whereas before we would go for the cheapest option [wallpaper] because it was just going to fall of”. People no longer felt that it was a waste of resources

With constant hot water mundane tasks became easier and was reported by the majority of the households irrespective of the age of their children.

Coal fires caused extra work and safety concerns, and although most people liked sitting in front of them, they disliked the maintenance. Post central heating most said that they would not use coal in future. 4 ” ...you were always frightened that they might run into the fire...you’ve got to keep checking it” [the fireguard]. 38”...before you used to have the dust, ooooh horrible. I wouldn’t want to go back there again”.

Cost was also an issue, 42”... about £5 a bag ... so that’s about fifty or sixty pounds [per month] ...at that time [heating] just the one room”.

**Control of the budget.** Most households had an electric immersion heater, which is an expensive method to heat water. To ensure that they did not spend more than they could afford, all those interviewed, apart from one, had a quantum card meter, whereby people pre-pay for their electricity and/or gas at certain outlets.

Post central heating people were still wary of the cost - 9 “If we stick that gas on all day its going to cost me a fortune”, and “...we are trying to keep it down to a level that we can afford...” This was certainly a factor for the people who were at home the majority of the time. Of the households that were finding costs less, some said that instead of spending the money saved on other things, they chose to leave the heating on longer.

Understand how to regulate their heating was a problem for some and may result in non-use through unaffordable higher costs. 21”I don’t use the heater in the kitchen now because I don’t know how to work it...” 20 ”I don’t know if you can turn them[the radiators] right off or not?” and 49 “...when my electric went and I tried to put the central heating on it didn’t come in so I gather it is run by electric”.

## Spreading out and doing things

Due to the increased warmth in the rooms, the entire house was now used and this had a considerable impact on the relationships between partners and with their children, particularly those that had three or more children.

Many to describe the change that central heating had made to them, which relates back to pre central heating and the 'siege mentality', used the word "freedom". A householder with five children said: 42 " ...seems like the kids have got their own freedom and we've got our own freedom more, we're not all round in one room trying to get warm". Others said: 3 "...you're getting the freedom to actually use up all of the house..."

4 "...it has opened up the house I think in the winter", and 'We're not getting on top of each other...' 38 "...we've got more freedom...they've got more room to get around in now". A mother with teenage children said 20 "We do tend to go off and do our own thing...in different rooms'.

Conflict between siblings was reduced by the opportunity of using their bedrooms to play/study, but the impact upon older teenagers was less as they often spent less time in the house. 20 "...we're not tripping over each other if we are trying to concentrate on something, we can sort of like, have a bit of space away from each other". One of the parents felt that it had made a tremendous difference to his children, as he said: 3 'I mean academically it's helped because obviously the kids are getting on'.

For two women, one with five children under ten years and one with teenage children the opportunity to have space to themselves was beneficial. One had completed a study course: 3 "There is no way I would have been able to do what I've done if we'd all been in the one room. I wouldn't even have attempted it'. '...my brains actually started working again..."

The second who had teenage children had begun using a computer, which when it was cold she had refused to do. 20 "I'd like to do a computer course. This time last year I didn't know how to type on a damn computer let alone use one, but now I can".

## Feeling good – well-being

Most interviewees reported feeling happier themselves and in their relationships. 38 *'Well the house is looking nicer, you know, it's warmer, makes me feel happier in myself'*. One person who did not feel that it had made a difference to the household's health or relationships said – 49 *"I've been a lot happier...because it is warmer"*.

Even having a bath had an impact on the well-being of the household. Pre central heating most said that the cold put them off and a bath was something to be endured or taken quickly. 20 *"Absolute nightmare...I'd have goose bumps at the thought of going in the bath"*. 3 *"...you used to hate having baths because you used to get out and be frozen..."* 42 *"Sometimes you just didn't feel like having a bath...but now it's great"*. Post central heating bathing was a source of relaxation to reduce stress, give pleasure and a sense of well-being. 38 *"You can sit there and relax in the bath where before you couldn't it was a quick wash in and out"*.

Several households reported improved asthma in children but acknowledged that this may have been because "they outgrew it". Others reported suffering fewer chest infections and colds but some said, post central heating: 4 *"We have a lot more colds and coughs...and blocked up noses. But I think people say don't they – it's the dryness in the air"*. However, others reported less time off work and school. 3 *"...it helps you in your work as well because you're not having time off sick"*. 38 *"...L had a lot of time off last year with a bad chest. And with A she had colds but this year they have had a good attendance at school"*.

Others did not report any change, pointing to the fact that certain individuals may be predisposed to respiratory illness genetically, or through the environment, and other individuals may not suffer the same effects even though they are in similar conditions.

Individual comfort levels also showed variation and were a factor as to perceived positive or negative effects on health and well-being. Some found it too hot -42 *"I don't personally like it, it tightens my chest up"*.



## Maintaining relationships

Pre central heating conflict arose between some parents when they had few opportunities to speak to each other until the children were in bed, resulting in frustration and relationships becoming fragmented. This was clearly described by two households each with five children: 3 Male partner “...*being able to talk to each other... that’s the main thing that I would say we’ve benefited from*”, his wife agreed and said - “oh *it did put a real high strain because like, I thought that he didn’t, you know, care about what was happening to me, ...and he thought - she didn’t give a toss about me like*”. 42” *Well we can have a conversation now, we can talk about things without the kids interfering*”.

With warm rooms overall, there were more opportunities to communicate with some saying relationships with partners had become closer. 3 “*It’s actually helped us to have a better life in the house completely*”. A single parent with teenage children, however, felt that it had had a negative effect, 20 “*Split us up a bit really, (laughs) if anything*”, but the majority of people with older children did not report this.

Relationships between parents and children also showed less conflict when the children used their bedrooms to play in - 3 “*I’m different with the kids...I’ve got more patience*”. Relationships with individual children were improved – pre central heating: “...*you might have missed something that’s really crucial to her but you haven’t heard it because of the noise*”, and post central heating “...*it is a lot easier ...if she’s got a problem that she wants to talk about, you can actually go into another room, and listen to her*”.

Because people had begun to decorate and felt better about how their house was presented to others, they were no longer hesitant about inviting people in to socialise. 38 “...*now we’ve got the heating and it’s all done out... you can have more people and friends round. So we’ve got more of a social life as well*’ and when asked if that had made her feel better she said “*Yes, because it’s nice to associate isn’t it, you know, to have friends round for drinks and things*”.

Intervening factors in whether people felt stressed or not were their individual coping skills and relationships. A parent with a relaxed relationship with her teenagers said she felt little stress pre or post central heating.<sup>4</sup> *“We spend quite a lot of time together anyway ... (common interests in playing darts). “ ... S’s 18 so he goes out more anyway... they do at that age. I mean I didn’t want to stay with my mum and dad. (Laughs)*

A single parent with four young children also had a ‘laid back’, relaxed attitude to life, but although feeling stressed at times, was able to cope with problems more easily, as she had a strong support system through her mother and sisters, and frequently spent a lot of time with them.

### **Reliability**

All participants received a copy of the final report, which was accepted apart from minor text amendments. Another researcher identified similar themes from a random sample of transcripts.

### **Discussion.**

A summary of research evidence by the Scottish Office Central Research Unit<sup>13</sup> discusses the effect that poor housing has on mental health, and that a home is not just a shelter but is accepted as a psychological and social construct. The quotations from this study found that it affects the relationships between members of the household and can make the role of parenting particularly difficult and as Dunn<sup>14</sup> identified that welcoming others outside the immediate household can form an important part of social support.

Using a conditional matrix system<sup>9</sup> the role of the individual, community, neighbourhood, local services and central government were identified as contributing socio-psychological factors in the everyday lives of the study participants.

On an individual level, Dunn<sup>14</sup> argues that the social and economic environment and the personality and level of ‘coping skills’ have more impact on health than the medical model suggests. These factors were demonstrated in this study as was renewed motivation resulting in people

beginning to want to achieve higher personal goals such as gaining computer skills now that basic needs of warmth, food and shelter were being met.

(Maslow's hierarchy of needs)<sup>15</sup>

Support systems within the neighbourhood are particularly important when people are suffering from stress or under pressure due to life events. A study commissioned by the Joseph Rowntree Foundation<sup>16</sup> identified a lack of this kind of support, in modern society, and those more vulnerable because of other circumstances in their lives, such as being unemployed, are most likely to be affected. Increased governing regulations and reductions in funding due to social service cutbacks have also contributed to the diminishing of voluntary support groups.

The recent government paper "The Way Forward for Housing"<sup>17</sup> recommends that tenants are consulted but in reality this is often not the case, as Allen<sup>18</sup> outlined, in his study of the negative effects of the process of house improvement. Several interviewees mentioned being frustrated by the poor workmanship of contractors and the perceived negative attitude of some to social housing tenants.

### **Conclusions – key points**

All households had benefited in some way from the installation of central heating and warmer temperatures. The positive outcomes were:

- Freedom to use the entire house resulting in improved self-esteem, health and relationships
- Conflict in relationships was reduced with improved leisure and social opportunities for some households
- Renewed motivation to maintain the house, a sense of pride in the home and its 'status' in the community.
- Health of some people with a pre disposition to respiratory illness improved, reporting less time taken off school and work

The intervening factors, which could affect the generalisability of these findings are:

- The number of people in the house and the age of the children, as those with younger children appear to be most affected by the lack of central heating.
- Personalities and coping. People with a negative attitude were more prone to suffer stress than those with a relaxed attitude and/or with a better support system of friends and relatives.
- Fuel Poverty and Energy Efficiency. Understanding of the systems installed to use the heating efficiently and the ratio of energy use costs to the income of householders.

The sample size is small and as such the results of this study cannot be generalised but the key issues could be related to people in similar situations towards an exploratory theory. Williams <sup>19</sup> discusses a 'moderatum generalisation', which supports the latter i.e. that given a purposeful sample, specific criteria and context, and the intervention factors as above, findings could be generalised from this study to a wider population, showing an association of factors, which can then be tested and replicated in other areas.

Further research is in progress using qualitative interviews and to develop a questionnaire, using open and closed questions, to obtain statistical data to ascertain whether similar information can be gained over a wider sample. From a primary health care perspective, collaboration between housing associations, trusts, and other agencies is an important basis for future research into house improvements and health. A holistic approach to health and well-being, using qualitative and quantitative methods is the way forward to address the inequalities that exist in our society and the findings of this study support the prioritisation of this research.

## Bibliography

1. Somerville, M, Basham. M. Foy. C, Ballinger, G. Gay, T. Shute, P. Barton, A. on behalf of the Torbay Healthy Housing Group. (2002) "From local concern to randomised trial: the Watcombe Housing Project". Health Expectations 5: No. 2 127-135
2. Basham.M (2000) "Partnerships leading to Healthy Living – Watcombe Housing Project". Community Health UK Action. Journal of Community Health Issue 52 12-13
3. Donaldson RJ and Donaldson LJ (1993) Essential Public Health Medicine London. Kluwer Academic Publishers. Quoted in "Making the Case. The Internal Environment" Health and Housing (1999) London
- 4 Billings. C.G. Howard. P (1998) "Damp Housing and asthma" Monaldi Arch. Chest Dis 53:1, 43-49
- 5 Marsh, A. Gordon, D. Heslop, P. Pantazis, C. (2000) "Housing Deprivation and Health: A Longitudinal Analysis" Housing Studies Vol.15, (No.3) pp411-428
- 6 Thomson, H. Petticrew, M. Morrison, D. "Health Effects of housing improvement: systematic review of intervention studies", British Medical Journal. 323:187-190
- 7 Gemmell. I, (2001) Indoor heating, house conditions, and health. Journal of Epidemiology and Community Health 55:928-929
- 8 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, 434-439
9. Strauss, A. Corbin, J. (1990 1<sup>st</sup> Edition) Basics of Qualitative Research. London. Sage Publications
10. Mason, J. (1996) Qualitative Researching. London. Sage Publications
- 11 Morse, J.M. (1994) Qualitative Research Methods. London. Sage Publications.
- 12 Platt, S. D. Martin, C.J. Hunt, S.M. Lewis, C.W. (1989) "Damp housing, mould growth, and symptomatic health state". British Medical Journal Volume 298 1673-1677
- 13 Wilkinson, D. (1999) "Poor Housing and Ill Health. A Summary of Research Evidence". Housing Research Branch. The Scottish Office Central Research Unit <http://www.scotland.gov.uk/cru/documents/poor-housing-08.htm> [26/06/2001]

14. Dunn, J. R. (2000) "Housing and Health Inequalities: Review and Prospects for Research". Housing Studies Vol.15(No.3) pp341-366
15. Maslow, AH "Hierarchy of needs" Developed 1939-43
16. Page, D. (Nov. 2000) "The Reality of social exclusion on housing estates' Joseph Rowntree Foundation Findings <http://www.jrf.org.uk> [March 2001]
17. Department of the Environment, Transport and the Regions "Quality and Choice: A decent home for all. Summary. The Way Forward for Housing" <http://www.housing.detr.gov.uk> [29/3/2001]
18. Allen, T. (2000) "Housing Renewal – Doesn't it Make You Sick? Housing Studies. Vol. 15 (No.3) 443-461
19. Williams, M. (2000) "Interpretivism and Generalisation". Sociology Vol.34(No.2) 209-224