Changing the care environment for children and families

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Graduated form the University of Manchester with a BA Honours Psychology and went on to gain a PhD in Psychology from University College London. For most of my professional life I have been a research psychologist working in developmental and health psychology settings, carrying out a wide variety of studies, mainly in the areas of maternal and child health and wellbeing. A consistent thread however, has been a concern with environment and design issues, ranging from studies of the behavioural needs of polar bears and gorillas in captivity, to the neonatal unit as a working environment and more recently childrens' experience of the health care environment. Currently employed as a Reader in Psychology, lecturing and carrying out research.

Introduction and aims

The needs of sick children being cared for in a hospital environment, and those of their families, are foremost in the minds of many of those working in paediatrics and child health. The realities of caring for children away from home and addressing their clinical and psychosocial needs in the acute hospital context confront parents and staff daily.

It has long been argued that the physical surroundings in which people live affect how they feel and behave (Canter and Lee, 1974). This is also evident in relation to wellbeing and the caring and working environments of the health care system (Ulrich,1984; Scher, 1996, Lawson and Wells-Thorpe, 2002; Lawson and Phiri

2003). The tensions between the need for privacy and proximity to those providing fast and responsive clinical care, for rest as well as distraction and for security and accessibility present a continuing set of challenges to those designing in acute health care settings.

For children and families, after clinical care, psychological and environmental issues are of paramount concern, as has been acknowledged by many professional groups (DOH, 1991; Audit Commission, 1993; Action for Sick Children, 1996). The hospital environment is not home, nor are parents visitors (Redshaw, Harris and Ingram, 1994; Buss-Frank, 1999). Children and families are out of their usual physical and social milieu, but not 'on holiday' or staying in a hotel, yet to a great extent it is expected that they will somehow behave and respond 'normally' in this essentially abnormal context.

The aim is this paper is to explore some of the ways in which the hospital environment impacts on sick children and their families and on the staff caring for them, and to closely examine the effect of changes in the built environment and interior design on the attitudes and perceptions of these groups.

Background

Making use of a rare opportunity to collect comparable sets of data on two linked sites, a two-phase study was carried out. Baseline data were collected in 1999 on the experiences and attitudes of children, parents and staff relating to the original Victorian Royal Hospital for Sick Children in Bristol (Redshaw and Smithells, 2000). Following the move to a newly-designed, purpose-built, specialist children's hospital in 2001, further data collection

took place in 2002, allowing an evaluation of the changes brought about and a more complete picture to be gained of the environmental and related issues in this area of health care.

The old hospital, like the current on, functioned as a regional centre providing tertiary-level care and serving the local community. Though adequate in terms of the facilities provided, it was outdated and cramped. The new and larger 160 bed, seven storey hospital is built on the side of a hill, overlooking the city centre and adjacent to another tertiary care hospital. The use of design, colour, themed levels, art works and the incorporation of specific design features aimed at creating a child and family centred caring and working environment, represents a complete contrast. Thus the questions for study were: what has been the experience of the new hospital? how does this compare with the old hospital? and how have the environmental changes, implicit in the design of the new building, impacted on those involved?

Methods

A wide range of attitudes, views and behaviour were documented using structured questionnaires, interviews and observations at both sites. Following Ethical Committee agreement, details of children who had been patients in the target time period and staff currently working in the hospital were obtained and utilised in sending out questionnaires or arranging interviews. Parents whose children had died were not contacted. Details of the methodology used in Phase 1 are described in a published report (Redshaw and Smithells, 2000). Similar methods were used in Phase 2, with the same topics being addressed and similar question formats, though a range of structured and open-ended questions were added that related directly to the features of the new environment. In this phase the response rate for parents was 57% (466 participants), including 68 whose children were outpatients only. In this second phase the staff groups were expanded to include a wider range of personnel who have direct contact with patients and their parents. The response rate for medical staff was 65% (50 participants), for nursing staff 63% (247 participants) and 61% (45 participants) for allied health professionals (AHPs), such as physiotherapists, radiologists and play-specialists. All the specialist areas of paediatric care were included in the study. The statistical analyses were carried out using non-parametric tests in SPSS 10.

Results

The full details of this large scale study will be available in a published report[2], however, selected

Gender	Age	Previous inpatient	In-patient in last year	Admission	Health Problem / Reasons for admission
Boys 68%	mean 7.0 yrs	51%	43%	emergency 41%	acute 32%
					chronic 12%
Girls 32%	median 5.62 yrs		13 % 5 or > admissions	planned 59%	minor 33%
	range <1m - 18 yrs			of whom 39% had a pre-admission visit	investigations/ procedures 23%

Table 1. Details of the study sample children

[2] 'Design for health' Published by NHS Estates, Department of Health, UK.

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aspects are described and discussed in this paper. The characteristics of the study sample listed Table 1 are among those factors used in the analysis of the effects of the environmental changes brought about by the new hospital.

Responses to change

Participants were asked to choose descriptive terms from a balanced set of 20 positive and negative adjectives to describe the new building. As Table 1 shows, their impressions of the new building were generally positive, however there are some differences in views, mainly between parents and the staff groups, with significantly more of the

former seeing the new hospital as 'imaginative', 'welcoming' and 'busy'. Medical staff were in some respects more negative, with significantly more selecting the term 'small' (15%) in describing the new hospital, in contrast to the other staff groups and parents (5% or less) (p=<0.001).

Substantial and significant improvements have been achieved in many respects as far as parents are concerned (Table 3). There is also some evidence that parents' expectations are changing, for example, attitudes to space, comfort and privacy, and that some aspects, such as temperature and noise, may be more problematic than previously.

Term selected	% Parents	% Nurses	% Medical Staff	% AHPs
imaginative **	60	37	47	44
bright	79	71	71	78
attractive	47	39	47	57
welcoming**	59	43	31	44
big	36	42	16	33
exciting	27	28	20	22
modern	81	85	80	91
busy***	21	12	2	7
clean	60	54	40	49
impressive	40	32	29	73

(p values indicating significant differences between the groups are shown:** p=<0.01, *** p=<0.001)
Table 2. Most frequently selected terms chosen by different groups to describe the new hospital building

Aspect of environment (% parents)	Old hospital Improvement needed	New hospital Improvement achieved	New hospital Further Improvement needed
Space around child's bed***	64	58	28
Comfort of seating***	63	60	22
Privacy***	49	46	21
Temperature***	31	37	16
Furnishings***	39	79	7
Level of background noise***	30	26	21
Decoration***	29	70	2
Cleanliness***	18	57	9

(p values indicating significant differences are shown:*** p=<0.001)
Table 3. Parents' views about specific aspects of the hospital environment

Private spaces, public places

Visibility, privacy (visual and auditory), exposure to noise and light and the need for control of these, are all issues for patients and in this case, parents and children in hospital. As with their impressions of the building, parents were asked to select terms from another adjective checklist, previously used in studies of neonatal and maternity care (Redshaw et al, 1996; Redshaw and Harris,1995; Audit Commission, 1998) to describe the atmosphere on the ward. Their responses to the ward environment in the new hospital are shown, with the comparable responses to the old hospital shown in brackets (Table 4). While the evidence is that the new wards are perceived as generally 'friendly', 'cheerful' and 'welcoming' as previously, the wards in the new hospital are experienced as significantly less 'hectic', more 'relaxed', 'reassuring', 'calm', 'easy' and even 'cosy'. At the same time significantly more parents chose the terms 'frightening' and 'strict', than previously, a finding that is less easy to expalin, but which may relate to issues of safety and security.

Using a parallel question, it was found that the nursing staff followed the parents in experiencing the new ward areas as significantly less ' hectic' and less 'chaotic' than in the old hospital, though they still used these terms more than parents in relation to the new situation (54% and 19% respectively). Concerns had been expressed about the effects of the move and the loss of the friendly atmosphere, team spirit and supportive attitudes prevalent in the old hospital (Redshaw and Smithells, 2000), but this was not evident in the data collected in the new situation. The wards were predominantly seen, and to a similar degree, as 'friendly', 'welcoming', 'cheerful' and 'organised' places from the perspective of parents and nursing staff.

The extent to which wards are private or public spaces is likely to be related to the availability of single rooms or cubicles, the way care is organised, the throughput of patients and families and the ward lay-out itself. With the increase in numbers of single occupancy spaces it was anticipated that more children and families would benefit from these and that moving children around during their stay would be reduced in comparison. This was not found to have occurred to the extent expected. Organisational and staffing issues may account for this finding.

Positive Adjective	% Parents new and (old) hospital	Negative Adjective	% Parents
Friendly	73 (79)	Hectic ***	17 (46)
Cheerful	61 (58)	Chaotic	13 (20)
Welcoming	62 (57)	Depressing	9 (13)
Organised	55 (46)	Impersonal	10 (13)
Efficient	48 (42)	Tense	5 (6)
Reassuring *	49 (39)	Disorganised	6 (5)
Relaxed *	46 (35)	Frightening **	12 (5)
Calm ***	42 (24)	Cliquey	6 (3)
Easy *	26 (19)	Hostile	5 (2)
Cosy**	25(13)	Strict **	7 (2)

(p values indicating significant differences are shown* p=<0.05,** p=<0.01, *** p=<0.001)

Table 4. The most frequent terms chosen by parents to describe the atmosphere on the ward in the new hospital

Accommodation		Moved to a different bedspace	
Open Ward	61% (62%)	Once only	20% (22%)
Open ward and cubicle	18% (23%)	Twice	8% (7%)
Cubicle only	21% (14%)	More than twice	6% (6%)

Figures in brackets ( ) indicate data from old hospital

Table 5. Accommodation in the new hospital and moves for the study sample

From the open-ended responses to questions concerning the ward layout and any difficulties issues associated with the ward environment, parents referred to the issue of isolation for themselves and their children. Those who responded in this way were anxious about the remoteness of the nurses' station and leaving their young or very sick children alone in cubicle and some said they would have preferred their child to be cared for in a shared area as a consequence. Nursing staff were also concerned about this aspect of care and had been prior to the move, though in the new context they and the medical staff also emphasise the isolation of the wards and departments from each other and the ways in which inter-staff communication has been affected as a consequence. The lack of adequate communal meeting and dining facilities also contribute to this view.

Other responses also showed that communal areas on the wards and within the hospital are not always easy for parents, especially those who were distressed. The ward reception and central areas around the nurses station are clearly marked out as staff areas, though 'old hands' were observed to overcome the boundaries in this regard. The parents' sitting rooms, dining areas and associated kitchen facilities, while apparently for their use, did not always seem welcoming and involved coping with rules and guidelines that were not of obvious value or importance to those with sick children.

A room with a view

The move to the new hospital has engendered a significant difference in outlook. Previously, in the old hospital being able to see to the outside world from the child's bed-space was possible for less that half the children and parents (42%), in contrast to the new situation where two-thirds (66%) reported being able to look out (p=<0.001). However, in the new hospital, as in the old, only a proportion of parents (32% and 20%) who could not see out, actually reported being bothered by the lack of an outside view. That the proportion of those without a view who minded about this actually decreased significantly across the two sites (p=<0.05) probably reflects the changed quality of the interior design and decoration.

Wards and ward areas differ in their outlook and it was clear that being able to see beyond the bedspace to the outside differed significantly by ward (p=<0.001) and having a cubicle made it more likely that one was able to look out (p=<0.001). Exposure to noise beyond the bed-space and from outside was not associated with having a cubicle or shared area.

Factors affecting environmental perceptions The severity of illness and associated health care needs are likely to influence attitudes and experiences to the hospital environment. Uncertainty, the degree of pain and discomfort experienced and the repeated exposure to these are also likely to affect children and their carers. Variable exposure to the hospital environment was found to account for some of the differences in perceptions in pre-move phase of the study. Thus it was expected that for parents and children in the new hospital previous admissions, frequency of admission and duration of stay would be likely modify perceptions and expectations, even in the new context.

A number of factors including age, gender of child, duration of the present stay, previous experience as an inpatient, severity of illness or condition, whether the admission was planned or an emergency, distance from home, presence of a partner and having other siblings in the family, were examined in relation to the hospital experience and perceptions of the environment and facilities. Few links were found with age, gender and having a parent with a partner, however, there were significant links with having a previous stay, other siblings visiting, having an emergency admission, with frequent and recent admissions and with having a chronic or life-threatening condition.

Not surprisingly, those parents with previous experience of the new hospital were better able to find they way round the building (p=<0.05) and the ward (p=<0.05). However, duration of stay was not found to be linked with way-finding, though parents whose children had less serious health problems had significantly more difficulty in this respect, than those whose children who were more seriously ill (p=<0.05). Parents of children admitted with an acute condition were more likely to be given a cubicle, to be able to see outside from the bed-space (p=<0.01) and to perceive the ward more positively (p=<0.05). Parents of children with a chronic condition (also more likely have single room accommodation), while inclined to be highly satisfied overall (p=<0.01), were more likely to also be more critical of the new hospital, referring more to outside noise (p=<0.001),) being less positive about the reception and entrance area (p=<0.05)and listing more improvements to be made in the new situation (p=<0.01). Staff clearly feel they have a better working environment than previously and that the caring environment is better for children and families. Gender, age and grade were largely not associated with perceptions and attitudes towards the new hospital. However, for nursing staff, being older was associated with being more critical of the new environment (improvements still needed, p=<0.05), while younger nurses emphasised the contrast, reporting more improvements in comparison with the old hospital (p=< 0.01). For medical staff there were no such links with age group or

having worked in the old hospital, though for AHPs and nursing staff there were some associations with this previous experience in the old hospital. Having been employed in the old hospital, the AHPs were more positive about the new environment as a whole, with all its modern features (p=<0.05), while the nursing staff with this experience were more likely to indicate that their expectations had not entirely been met (p=<0.01).

For parents experience of the old hospital seemed to contribute to their positive attitudes towards the new building and facilities. While all the staff groups were found to be generally positive about the new environment, for some, like the nurses, there is an emphasis on the mismatch with their expectations.

Discussion and conclusion

Social and psychological issues arise in a new building which is larger, has more levels, and which on each level has more complex spatial arrangements than previously. Doctors talk about not meeting each other and those from other specialties, especially in informal settings, nurses about walking further and not seeing those working in other departments and parents are concerned about leaving the immediate ward area in order to have a drink or a meal. The disruption of lines of sight that occur, such as those between bed-space areas and nurses' station and playrooms, may be inevitable in a more complex building in which the bed-spaces are accommodated within 'nested' sub-units. However, the psychological and organisational impact of these changes may be substantial in terms of the wellbeing of children, parents and staff.

Despite the difficulties associated with adjusting to change, the positive attitudes of staff, improvements in morale and more effective recruitment since the move would suggest considerable benefits arising from the environmental change that has taken place.

In addition to clinical care children need comfort, familiarity, distraction and diversion. These other needs are addressed by parents, staff, other patients and siblings and by the way in which a hospital

building is designed and the features that are incorporated into the design.

As children come into the new hospital we have seen that here is a clear recognition that this is a place for them. The interactive art-works, colours, themed levels and voices in the lifts (by well-known cartoon characters) all contribute to this immediate and positive identification. From the present study there is no doubt that colour schemes and decor, facilities for parents, child-height windows looking out of the building and low-level windows in doors, and the nurses stations that are reminiscent of boats, streets and animals, have all made for a more child and family-friendly environment.

However, this study of the ecology of care also highlights the tensions between the need for rest, privacy and containment and the need for interaction, stimulation and interest. It also stresses the value of reviewing and valuing the different perspectives of those involved. The experience of the children, parents and staff in this hospital is not unique to the geographical context in which the study took place. Many aspects of what has been presented will echo the views and experiences of other children, families and staff being cared for or caring in other contexts.

In carrying out Phase 1 of the evaluation on which this paper is based, it was clear that much of what has been done aims to 'normalise' the hospital environment, while recognising that what is perceived to be a 'need' changes over time. While we have and continue to argue strongly in support of this objective, we would also argue that the goal should, in many respects, be about making the hospital environment and experience 'special' or different in some way that is more life-enhancing for children and their families. The built environment of the new hospital, the interior design, non-clinical activities and the arts (Philipp, 1997; Staricoff et al, 2001) have helped substantially in moving towards this goal.

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