

Meeting User's Needs: Children and Young People in Hospital Environment

Sfandyarifard, E.

School of the Built Environment, University of Salford
(email: E.SfandyariFard@pgr.salford.ac.uk)

Sutrisna, M.

School of the Built Environment, University of Salford
(email: M.Sutrisna@salford.ac.uk)

Tzortzopoulos, P.

School of the Built Environment, University of Salford
(email: P.Tzortzopoulos@salford.ac.uk)

Abstract

Despite the general understanding of the impact of the built environment on children, little attention has been given to the children's hospital- environment from children's perspectives. In this light, the aim of this paper is to investigate the literature on children's perspectives and preferences around the hospital's environment. For supporting the development of child-friendly hospital environments the adopted research methodology is a literature review. In order to support the creation of child friendly hospital environments, it's important to know what children like or dislike about hospital environment. The result shows that different children have different needs and Design of hospital based on consult with children should be carefully paid attention due to their diverse requirements such as age, gender and culture. This is a part of an ongoing PhD research project, which aims to develop a framework to improve practices in designing children's hospital in the UK based on children's perspectives.

Keywords: preferences, children's hospital, Physical environment, Wellbeing

1. Introduction

Recent years have seen a great amount of attention paid to the built environment and its impact on health care within hospital spaces (e.g. Sundstrom et al., 1996; Lawson, 2001; and Codinhoto et al., 2008). The impact of the built environment on health and recovery from adult's perspective is generally well known and established (Evans and McCoy, 1998).

The aim of healthcare services such as in the UK is to improve the physical and psychosocial well-being of consumers through improvement of healthcare delivery. The so called patient-centred healthcare is a concept which has been discussed and debated for more than 50 years (Bauman 2003). However, the ambiguity of experience of children and young people and their families in healthcare environments is still evident, particularly for children (Alderson, 1993; Bricher, 1999). The responses of children representatives are known generally considered being less reliable. On the other hand, it is also been generally considered less appropriate to use surrogate interviewees, i.e. their parents and professionals in this case, to truly understand the matters from children's perspective (Stalker, Carpenter, Connors and Phillips, 2004). "Adults are presumed competent to make health care decisions; children are presumed incompetent without any validation as to whether the child has the knowledge and ability to make the decision" (Bricher, 2000, pp. 277).

The problem of coping with increasing number of patients with chronic conditions requires the patients to remain devoted to the treatment. Therefore, the patient-centred healthcare was found as a solution to the problem which could address the needs and preferences of the patients while it can be the most cost effective solution to improve the healthcare outcomes (IAPO, 2007). As Laine and Davidoff (1996) defined the patient-centred system as "closely congruent with and responsive to the patients' wants, needs, and preferences."

The NHS Plan (2000) specified that it is essential to focus more on the things that really matter to patients to improve the patient's experience of the hospital environment. Douglas and Douglas (2004) indicated that the wellbeing of patients somehow depends on the built healthcare environment. It is important to ensure that patient satisfaction is not only prioritised but also achieved. Therefore, ideally healthcare environments should be designed to reflect patients' perceptions and preferences.

Having this in mind, the question arises about the reliability of data provided by children and their competence, which has an impact on any studies or research in this subject.. In the past, researchers have been very cautious about carrying out research solely with child participants (Faux, Walsh and Deatrick, 1988; Miller, 2000). They may even be one of a number of groups and their voice cannot be heard properly by surrounding adults' who try to interpret of their experience (Eiser, 2000). The children have been defined as the 'silent consumers of healthcare' Carter (1998) and Ward (1999) has warned about exclusion from consultation of the children with complex needs. (Stalker, Carpenter, Connors and Phillips, 2004). According to Eiser (2000) too often, studies about children with complex needs have relied on parental and professional accounts, rather than persuading the voice of the child. (Stalker, Carpenter, Connors and Phillips, 2004).

The Platt report in 1959 postulated the differences in Children needs to that of in adults. There are research about children and built environments in different spaces such as home (Sibley, 1995) and school (Kraftl, 2006). However, these research are based on adults' reflections on spatial aspects and built environments of childhood (Birch et al, 2007).

This view in clinical practice in respect to respect children's aspirations is apparent in the lack of participatory research with children in healthcare contexts also. The absence of their voice in research represents a lack of appreciation of providing valuable insights from children own experience. It also reveals a lack of appreciation of the fact that children and young people are not passive recipients in the experience of hospitalisation and in fact, are actively involved in managing and shaping it (Carney et al., 2003; Hutton, 2003, 2005; Moules, 2004).

Children who have to attend hospital as a patient for whatever reason can find it stressful (NHS Estates, 2003). Therefore, NHS Estates (2003) intend to make an effort at ensuring the provision of friendly and welcoming healthcare environments particularly in the context of children hospital.

In the light of the discussion above, the purpose of this study is to increase our level of appreciation of experience of children and young people of a hospital environment. It is also to identify and discover the prominent characteristics of the physical environment in their experience, and the involvement of these characteristics in children's feeling of well-being whilst in hospital. This will enable to create a number of valuable recommendations to be made to those developing supportive hospital environments for children and young people. To sum up, the aim of this research is to develop a framework to improve practices in designing children's hospital in the UK.

The objectives stimulating this research are:

1. To explore the current practices in designing children's hospitals
2. To investigate patients' needs and preferences and the extend of using them to optimise the design of children's hospital
3. To investigate the impact of built environment in supporting/promoting patients ' wellbeing in the context of children's hospital
4. To develop better understanding on how these factors can be used to improve the design of children's hospital in UK

As a part of the ongoing research, this paper intends to explore children's views and preferences of hospital environments from literature. This research will be based on a combined research approach. A theoretical framework will be confirmed from existing literature and will be investigated in different case studies.

This paper is divided into three parts. The first part deals with Children's Hospital Physical environment. It explains what kind of built environment they prefer to have. The second part presents

the research method used to conduct the research. The third and last session presents the final considerations and conclusions.

2. Children's hospital physical environment

Following the discussions in the previous section, a more holistic understanding of what constitutes patient's experience and feeling of well-being in a paediatric setting for both children and adolescents can be considered necessary and vital. Moreover, there is a need to concentrate on understanding children and young people's responses to the physical environments which they were involved and their feeling of well-being. This signifies the fact that, in addition to providing a list of the key environmental characteristics for these age groups, the role these characters may play, how and what purposes patients may use them for, should also be identified. A greater appreciation of children's perspectives of how they may use the key characteristics and what for is required, in order to be able to provide them in a hospital environment effectively.

A considerable amount of studies have been performed on the physical elements of healthcare environment and the health outcomes (e.g. Sundstrom et al 1996, Lawson 2001). These studies considered isolated elements of the built environment such as lighting, ventilation, colour, and heating as well as the overall design of healthcare buildings. In general, the whole environment is assessed and experienced by five senses: sight, touch, hearing, taste and smell. These senses help people understand and navigate their environment. All the information that is picked up by a child's sensory receptors will be converted in to a form that the brain can integrate, interpret, compare and store (NHS Estates, 2003). Understanding the true dimensions and limitations of the senses will potentially enable the designer to create a truly responsive environment that may assist in healing (NHS Estates, 2003).

Even more, environment factors have been informed from the literature study and are discussed as follows:

Key aspects of the physical environment are often grouped in three categories: the *ambient environment*, *architectural features* and *interior design features* (Harris et al., 2002).

2.1 Ambient Environment

The possible satisfaction or dissatisfaction for patients may have a direct link to ambient environmental features such as lighting, noise levels, air quality and odours, and temperature. (Fottler et al., 2000; Harris et al., 2002).

Stress can be caused as a result of uncontrollable or unpredictable extreme environmental conditions (Evans and Cohen, 1987). Some design features such as individual thermostats, dimmer switches that

allow patients to have more control over the ambient environment minimize these sources of stress and also enhance satisfaction for the hospital environment.

2.2 Architectural Feature

According to Harris et al., (2002) architectural features have been defined as relatively permanent aspects of the hospital environment which includes the plan or layout of the hospital, the size and shape of rooms, and the placement of windows number and kinds of facilities and amenities, and having access to views, nature and outdoor areas.

2.3 Interior design feature

According to Harris et al, (2002), interior design features are defined as less permanent aspects of the hospital environment, such as furnishings, nonmedical equipment (e.g., televisions, telephones), colours, finishes, artwork, and the layout of furnishings in hospital rooms.

Both type and layout of furniture and equipment can influence patient experiences as it was noted by Shumaker and Reizenstein (1982; see also Carpman and Grant, 1993; Fottler et al., 2000; Zimring et al., 1987). However, there has been very little research concentrating on the interior design features of hospitals (Harris et al, 2002).

3. Research method

3.1 Research design

3.1.1 Case study

Case study is defined by Yin (1994) as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used” (Yin, 1994, pp. 23).

Moreover, according to Creswell, (1998), a case study is defined as an investigation of a “bounded system” or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context. The system is bounded by time and place, and it is the case being studied—a program, an event, an activity, or individuals (Creswell, 1998, pp.61).

In regards to this study, a single hospital environment can be considered bounded by several factors such as: place, time, organisational, physical and social characteristics. These unique characteristics along with unique children’s experience of this environment will turn this bounded system to a unique and distinct case and hence the case studies as an appropriate choice for the research design.

Thus, in order to understand this experience it has been considered necessary to study the children's experience within the context of the hospital environment and an inclusive comprehension can only be obtained if attention is given to both.

According to Yin (1994) some of applications for a case study model have been expressed, as: exploratory, explanatory and descriptive. With regard to the current study two relevant applications are used to describe a real-life situation, and to explore a situation in which more is revealed about the nature of this situation and the relationships within the context.

3.2 Data collection methods

3.2.1 Literature review

According to Hart (1998, pp.13) the literature review is 'the selection of available documents (both published and unpublished) on the topic, which contain information, ideas, data and evidence written from a particular standpoint to fulfil certain aims or express certain views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents in relation to the research being proposed'. Moreover Blaxter et al. (2006) defined the purpose of the literature review as to address the research and to create the context and insights into previous work (Ridley, 2008).

According to Burns (1997, pp.27-29) of the literature review has number of advantages such as: providing researchers the knowledge required to narrow the focus of their research topic, specifying the research problem in detail, identifying gaps in existing research knowledge, learning how to express certain views on the nature of the topic, identifying of neglected issues in previous researches, getting a rich source of secondary evidence on which to outline and finally creating a summary of research evidence. In order to investigate the impact of built environment in supporting/promoting patients 'wellbeing in the context of children's hospital the literature review has been carried out.

3.2.2 In-depth interview

In-depth interviews try "to understand the world from the subject's' points of views, to unfold the meaning of peoples' experiences, to uncover their lived world," (Kvale, 1996). The main objectives of the technique are to draw out the experiences and perspectives regarding to the participants and also providing the opportunity that the participants would be able to point out their own personal feelings and ideas with regards to specific subjects.

"The phenomenographic approaches share in common is a focus on exploring how human beings make sense of experience and transform experience into consciousness... - This requires methodologically, carefully, and thoroughly capturing and describing ' how people experience some phenomenon -how they perceive it, describe it, feel about it, judge it, remember it, make sense of it,

and talk about it with others. To gather such data, one must undertake in-depth interviews with people who have directly experienced the phenomenon of interest; that is, they have "lived experience" as opposed to second hand experience" (Patton, 2002. p 104)

The questions can be asked about the behaviour or experience, opinion or belief, feelings, knowledge, sensory, and background or demographic of the participants and they are designed in the form of open-ended in order to provide a way to encourage them to talk and point out their feelings in their own words.

4. Discussion

The inclusive effect and influence of children’s perception on the design of built environment of the hospital may create a child-friendly environment. However, in order to optimise this effect extra care should be taken in the design procedure of each single element of children’s hospital. Colour, Light, Noise, Artwork, temperature and Gardens have been considered the important design factors of the hospitals, which should be designed according to its users (see Figure. 1). Literatures suggest that particular aspects of “responding to user needs” are relying on different elements such as:

- Age dependency issues
- Culture
- Room function
- Time

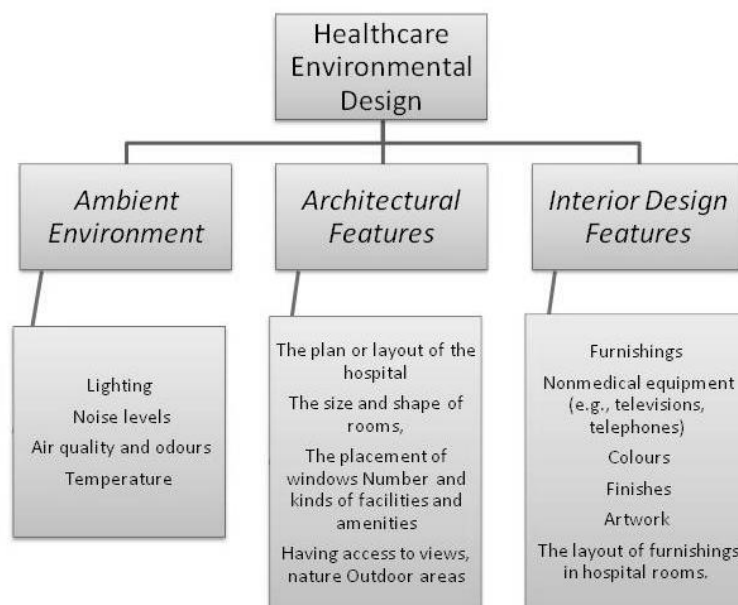


Figure 1: Framework: Hospital as a physical space

For example, the physical design and construction of the garden has been considered important in order to improve participant's satisfaction and support their sense of wellbeing. Drawing upon the results of behavioural observation of young participants, Whitehouse et al (2001) concluded that children between the ages of 2 and 3 years typically noted water, a favourite object or their favourite things to smell. Four and five-year-old children preferred to climb, run, and jump while children of the ages of 6 to 10 years were interested in asking more 'things to do', which indicates that they required more structured or dedicated play areas.

In addition, to outdoor spaces, hospital noises, ventilation, light and temperature levels are all said to have an impact on the wellbeing of patients.

The findings from the literature have shown varying evidence (Pile 1997, Camgöz et al. 2003) about the use of colour in children's hospital. Colour has been found even more effective than the form of design in pre-school children; however this effectiveness fluctuates across form/colour between the ages of 7 to 9 years. From age 9 to adolescence, children focus mostly on form rather than colour (Dyer, 1999). Colour can be seen as an effective tool in health care building, for example, saturated yellow colours can affect Rapid Eye Movement (REM) activity in sleep or green colours can make a child suffering from cancer feel nauseous (Dyer, 1999). To sum up, no definite preference in colour can be assigned for children. The main reasons for that would be psychological or cultural diversity of children and patients in general. This diversity does change from time to time and place to place.

As the results of this study indicate, light, natural or artificial, is an important element in children hospital's environment, since younger patients are more susceptible to light than adults. In order to improve the moral condition and healing process of patients, sunlit wards can be included in hospitals. However, according to studies performed by Birch et al (2007) one of the wishes of the younger patients was adjustable lighting system in order to be able to control the lighting from their own beds. On the other hand the preferred level of light should also be paid attention to, as some young patients complain about the insufficient or excessive lighting in hospitals. Most of the children feel happier with more light and depressed with a dark room; however the majority of them dislike excessive and unnecessary light and brightness in the room. Careful design of windows and dwarf walls can enormously improve the adjustability of the light (NHS Estates 2003). For example, brille soleil or glass cavity micro blinds can modulate natural lights. The focus here is on adult control over ward lighting. The lights and air circulation devices should be controlled easily and be more accessible by children. (NHS Estate, 2003)

A long-term study conducted by Rivlin and Wolfe (1985) in a psychiatric hospital for children and young people, clearly illustrated children's sensitivity to the nature of their institutional environment and their need for environmental control. Privacy, confidentiality, control over time management, and activity choice are the needs which were also identified by the study. Environmental perception, empowerment, situational influence, self determination, social support, privacy, and personal control have direct relations hip with children and young people's response to hospitalisation, as it has been revealed by recent studies (Hallstrom and Elander, 2003; Ishibashi, 2001; Moules, 2004; Runeson,

Hallstrom, Elander and Hermeren, 2002; Sharma and Finlay, 2003). Age appropriate activities and spaces; a need for privacy and community; the importance of bright colours, soft furnishings, age-appropriate art work, and the removal of bland décor are the key environmental characteristics which have been identified (Blumberg and Devlin, 2006; Hutton, 2002, 2003; Tivorsak, Britto, Klosterman, Nebrig and Slap, 2004).

In order to create hospital environments meeting the children and young needs, the research should be performed with children and young people themselves. The risk of assuming the similar needs and requirements for adults and children and young people was stated by the research carried out by Blumberg and Devlin's (2006). It also emphasizes the difference of the needs of children and young people, at least to some extent.

The findings of this study have a number of important implications for future practice:

- The physical environment of hospital should be bright, colourful, tidy, spacious, welcoming, comfortable and quiet (Sharma and Finlay, 2003)
- Controls, the lights and air circulation devices should be Accessible for children (NHS Estates 2003, Birch et al 2007).
- Design of different type of interesting physical environments such as spaces of different sizes, places to hide, natural and man-made things is helpful in healing process of patient (Van An del 1990; Whitehouse et al., 2001).
- Design of hospital based on consultation with children should be carefully paid attention due to their diverse requirements especially in terms of age and gender (Donovan, Li and Taylor, 1999; Carney et al., 2003; Hutton, 2002, 2003, 2005; Kari,1999; Tivorsak et al., 2004; Blumberg and Devlin, 2006).
- Access to each department, ward or public facility should be signposted clearly(Dyer, 1999; "Wayfinding" – NHS Estates 1999)

5. Conclusion and future studies

This paper addressed the investigation of children's preferences in healing environment.

In order to strengthen policy, design, and healthcare management for children and young people; the input of children and young people as the users of the healthcare facilities should ideally be implemented and used. In this way, the decisions based on assumptions made by adults about the needs of children and young people in these circumstances can be minimised, that can increase the likelihood of designing supportive hospital environments, from children and young people's perspectives. The physical environment could be designed with sensitive lighting, colour, sound attenuation, ventilation and artworks to improve the children's patterns' wellbeing and healing process. The aim of this paper was to present the findings from the literature on physical environment in relationship to children's perspectives and preferences for a child-friendly hospital. A friendly

environment could help to distract a hospitalised child from the reality of their illness. For supporting the development of child-friendly hospital environments the adopted research methodology is a literature review. In order to support the creation of child friendly hospital environments, it's important to know what children like or dislike about hospital environment. The literature review demonstrated that extra care should be taken in the design procedure of each single element of children's hospital. It is now possible to state that air change ventilation, comfortable parent and family accommodation, creative and colour-coded wayfinding initiatives, clever use of time-appropriate interior lighting, diverting art, varied and age-appropriate play facilities and multiple gardens and outdoor recreation spaces are potentially the characters of a child-friendly hospital environment and may have a major effect on the healing process.

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