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Participatory art-based research with children to gain their perspectives on designing healthcare environments

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Background: A study was designed to understand the experiences and needs of children within the public spaces of the Outpatients Department of New Zealand's national children's hospital, Starship Childrens' Directorate.

Aim: To find out from children what they thought about the outpatient environment.

Design: A participatory art based methodology was used.

Methods: Based around the key areas of the physical environment, wayfinding, noise, and uniforms, art-based methods (draw and tell and letter writing) were used to collect data from 175 children ages 5–16 whilst they attended outpatient clinics. The drawings and letters were analysed using descriptive/thematic analysis.

Results: The findings show that children are very aware of their environment and are able to clearly voice what is important to them. Children appreciate environments that are child friendly, and inclusive of colour and artwork; however, wayfinding remains a challenge for many families. Although the environment was seen as important, children placed significant value on the people who demonstrated warmth and care within these environments.

Conclusion: Participatory art based approaches offer a child centred approach to finding out what children perceive is important in the design of hospital environments.

Keywords: children; art-based methodology; design; environment

Impact statement

Using art-based methods to undertake research with children highlights the unique insights children bring to hospital design.

Background

The word hospital is derived from the same origin as the words hospitality, hotel and hostel and it is argued that the designing of hospital environments is a product of evolving ideas and values of society (Norton-Westwood, 2014). In the last few decades hospital design has been compared to that of hotels, airports or shopping malls, which often include a central atrium, retail outlets and familiar food outlets (Adams, Theodore, Goldenberg, McLaren, & McKeever, 2010). As well as including aspects of aesthetics and functionality, the design of these buildings has been described

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as fitting with societal ideas of consumerism and the commodification of healthcare environments (Adams et al., 2010; Kearns & Barnett, 1997).

Hospital design has also been influenced by recent developments in evidenced-based design and a move towards designing for healing environments. Healing environments are those that are psychologically supportive (Malkin, 2007) and have been linked to more positive clinical outcomes for patients (Ulrich, Zimring, Quan, & Joseph, 2004). Ulrich et al. (2008) found that patient outcomes, such as pain, sleep, stress, depression, length of stay, spatial orientation, privacy, communication, social support and overall patient satisfaction, were markedly improved through good hospital design that incorporated a ‘healing’ environment approach. Martin, Nettleton, Buse, Prior, and Twigg (2015) describe hospital design as part of the therapeutic landscape, which mediates physical, social and symbolic dimensions. Buildings therefore produce particular ways of thinking, citizenship, familial relations and embodied experiences of illness (Martin et al., 2015).

Children entering a hospital environment may experience this as unfamiliar and scary, filled with new people, sounds, equipment and procedures and this can impact on their emotional, physical and developmental well-being. Although many of children’s fears centre on nursing and medical interventions, children have also reported fears related to an unfamiliar environment (Coyne, 2006; Salmela, Salanterä, & Aronen, 2009). Children’s age/stage of development means their imagination can transport them to places of wonder, or contribute to feelings of stress and anxiety when faced with an unfamiliar environment (Norton-Westwood, 2014). It has been argued that environments that are humane and child-friendly can reduce the level of stress children experience when entering a hospital environment (Lambert, Coad, Hicks, & Glacken, 2014). Birch, Curtis, and James (2007) suggest that healing environments are those that promote children’s decision-making and sense of autonomy, in age-appropriate contexts. This is significant as a hospital visit extends beyond the initial encounter to become ‘seared into our memories’ (Malkin, 2007) including both positive and negative experiences, and will influence future hospital visits. It has been argued that ensuring environments are welcoming and supportive can impact positively on the immediate and long-term well-being of children and families.

Prior to the existence of Starship Children’s hospital,¹ children in Auckland were cared for in Princess Mary hospital – a collection of temporary buildings, built during World War II (Teague, 2014). In 1956, calls were made for a purpose-built hospital to meet the needs of children and families (Teague, 2014). This was also around the time when the concept of ‘family-centred care’ came to the fore, which mirrored changing societal ideas around children and the notion of childhood, and acknowledging the importance of involving families in the care of children (Darbyshire, 1994; Dobbie, 1990). However, it was not until almost three decades later that progress on the new children’s hospital was made. In 1983 Aussie Malcom, the then Minister of Health, collaborated with architects to design a hospital with children in mind (Teague, 2014). This included the use of colour-themed walls, glass elevators (like a rocket ship), a rainforest-themed atrium and a brief that the design should be domestic in scale that suited children, not staff. These design features are still evident in the current hospital design. Colour was used to represent the sky (blue), sea (aqua), land (orange), sun (yellow), and health and well-being (pink) (Teague, 2014). The new design included dedicated playrooms, and play specialists were employed to support children to make sense of their diagnosis, treatment and environment. Starship Children’s Hospital, a purpose-built facility for children, opened in 1991. The usage of Starship’s Children’s Outpatients Department is reflected in the number of appointments, which during the year 1 July 2015 to 30 June 2016 numbered 46,409 appointments for children.

The current Starship Children’s Outpatients Department is reflective of the time it was designed, which includes the use of pastel colours on the walls and doors and bright colours

added by the numerous art works on the walls. There is one central waiting room with other smaller waiting rooms outside clinic rooms. The furniture is the plastic-moulded chairs typical of the era it was designed. The main waiting area is also adjacent to the playroom, which is available for children to use whilst they wait for their appointment. Each waiting area has a TV but limited books or toys.

In 2015, planning for a refurbishment of Starship Children's Outpatients Department was initiated. At the time when this study was initiated, the scope of the intended refurbishment was not confirmed, but was more likely to be limited to an update of the current environment (lighting, air conditioning, waiting areas, etc.) rather than a rebuild. However, gaining children's perspectives on the current environment was seen as an important aspect in determining what was important to consider for the future refurbishment project.

There has been a growing recognition of the need for greater involvement by patients and health consumers in the planning and evaluation of services – which includes input into healthcare environments. Children's views are often gained through proxy data by parents or adults and may not represent their views on an issue that is important to them (Dickinson, Wrapson, & Water, 2014). Despite concerns that children may be unreliable informants, recent studies have shown that children from the age of five (and possibly younger) are more than capable of sharing their views when appropriate ways of including their participation and methods of data collection are used (Coad & Coad, 2008; Coyne, 2006).

Participatory art-based methods such as draw and tell and letter writing are a way of including children in research that minimises the reliance on verbal skills and allows the child to participate in ways that are fun, meaningful for them and may lessen the potential power imbalance between researcher and child (Carter & Ford, 2013; Cook & Hess, 2007; Einarsdóttir, 2007). Researchers have found art-based methods to be a valuable way to encourage children's participation in research, whilst also giving the researcher an insight into the views of children that may not have been possible using other methods (Coad, 2007). Concerns around involving children in research focus on the need for protecting children from potential harm whilst also ensuring they have the opportunity to participate in research about things that matter to them. Graham, Powell, Taylor, Anderson, and Fitzgerald (2013) argue that concerns around protecting children should not be used as an inclusion or exclusion criteria in research, rather it should inform ways of including children's participation that is age-appropriate.

Research aim

Design

The study in this paper is in the context of a larger, exploratory study, Better Health through Design: activating interdisciplinary perspectives on design. The main study was a collaboration between a paediatric outpatient service at a regional children's hospital in New Zealand/Aotearoa and a university multi-disciplinary, across-faculty, research team, with the aim to understand the perceptions of children, parents/caregivers and hospital staff of the children's outpatients' environment. The sub-study reflected on in this paper focused on children's perceptions of the outpatients' environment. The four key topics for investigation were set by the larger study as focus for investigation and included aesthetics of the environment, wayfinding, noise and uniforms. These areas were selected as they represent those elements of the physical environment that patients and families interact with when they visit the outpatients department (Norton-Westwood, 2014).

A qualitative participatory methodology using art-based methods (draw and tell and letter writing) (Angell, Alexander, & Hunt, 2015; McWhirter, 2014) and semi-structured interviews

was used to understand children's perceptions of the outpatients environment. Ethical approval was obtained from AUT Ethics Committee in June 2015 (15/198). Clear guidelines were developed for seeking assent from children, to ensure children understood what they were assenting to, that it was their decision to participate or not (not just an adult), and that they had the right to withdraw at any point without needing to provide a reason. The inclusion criteria included any child between ages of 5 and 16 who was a patient of the outpatients department, was willing to participate, conversant in English, able to give assent and whose parents consented to them participating in the study. The study included children who were visually impaired and able to share their data by narrating their letters and experiences to the researcher.

Participants and recruitment

Initially, children and families were to be recruited and invited to participate via a letter and participant information sheet sent with an appointment letter. However, concerns related to overloading families with information about both the appointment and the study led to a decision to recruit children and families and undertake data collection as part of the same visit to the Outpatients Department. Children and families attending the Outpatients Clinics at Starship Children's Directorate were approached by two research assistants and invited to participate in the study. Families were given a participant information sheet, with children given age-appropriate participant information sheets (5–12 years/13–16 years). In conjunction with this, the research assistants explained the study to the children and families and answered any questions they had. Written consent was obtained from families once they had an opportunity to consider their child's willing participation. Written and verbal assent was obtained from the children and youth. If the research assistant sensed any hesitation from the child about participation, even if the parent consented, this was explored with the child. In some instances, the child was advised they only needed to participate if they wished to, and thanked if they declined. In designing the study, the researchers were aware of the power dynamics that are implicit in adult/child interactions and therefore were mindful of giving the children the opportunity to say no or seek further information/clarification. Having one female and one male research assistant meant children were also free to work with whichever research assistant they felt more comfortable with. One hundred and eighty-six children between the ages of 5 and 16 years were initially recruited, although incomplete data reduced the final number to 175. Of these, 128 children were under the age of 12 and 37 were between the ages of 13–16. Nine children did not give their age. Girls accounted for 85 of the participants, whilst there were 83 boys who took part. The gender for seven children was ambiguous and highlighted future considerations around collecting such demographic data.

Data collection and analysis

The children were given a pre-printed booklet with a place for their name and age and space to either draw a picture or write a letter. The children were asked to draw or write about one of four topics, which included their perceptions of the physical environment, how they found their way to the appointment and around the department, what sounds they heard, and uniforms. Indicative questions or prompts before completing the activity included 'what do you think about the way outpatients looks?', 'what do you like' and 'what might be different'? Children took 5–10 minutes to produce their drawing or letter. Once the children had completed the activity, they were invited by the research assistant to talk about their drawing or letter in a semi-structured interview. General questions were asked initially, such as 'can you tell me about your drawing?' This was followed by prompts from the researchers about the picture or letter, for example 'why do you like that picture on the wall'. The interviews were audiotaped and typically

lasted around 10 minutes. Interviews were constrained by having to fit in with the children's appointment times (waiting times were variable) and parents' parking concerns and other commitments such as picking up other children from school. It was noted that younger children generally preferred drawing and older children/youth preferred letter writing. A photo was taken of the drawing or letter to be used as data so that the child could take the original home. The interviews were transcribed by a typist who had signed a confidentiality agreement and matched with each drawing or letter. A thematic analysis as described by Braun and Clarke (2006) was undertaken of the drawings and letters and child interviews. Thematic analysis is described as a way of identifying, analysing and reporting patterns and in this study underpinned by an essentialist or realist method (Braun & Clarke, 2006). Identifying themes in this study was not based on prevalence, rather themes were identified as significant to the children's experiences and linked with the data. The primary researcher used an inductive approach to repeatedly reading the interview transcripts alongside viewing the drawing or letter to identify repeated patterns of meaning. Key initial codes were manually identified for each topic (for example, car parking and driving 'around and around') and these key codes were checked by another member of the research team. Braun and Clarke (2006) describe this as organising the data in some meaningful way. Once initial codes had been identified within each topic, these were compared across the topics and mind maps used to explore the relationship and potential themes within and across the topics. The researchers were mindful that the description of the children's perceptions of the outpatient's environment was through an adult lens, therefore shaping a particular interpretation of children's experiences. As the study was focused on four key topics, the findings were also presented under these topics. One key theme that went across all the four key topics was identified which related to the importance of how people can mediate impacts of an environment (Figure 1).

Findings

Findings of the four topics presented include navigation/wayfinding, environment, uniform, and sound and the main theme across all four topics which was how important people are in making the environment feel safe and comfortable for children.

Navigation

Geographically, Auckland is one of the most spread out cities in the world. Although there are three other children's outpatient centres in the north, west and south, Starship Children's Directorate provides many specialist services which means families often travel significant distances to attend appointments. As with any major city, Auckland is plagued by traffic congestion and a public transport system that is still being improved. Therefore, travelling around Auckland and to the hospital can involve battling traffic or having to take several modes of public transport to reach the destination. Given the challenges of public transport, most families reported arriving by car.

For many children travelling to the hospital was one of the most stressful parts of attending the appointment. If travelling by car, children were very aware of the traffic congestion, finding the hospital exits from the motorway, the correct hospital entrance and a car park building that was not closed and locating a car park space. Many of the children's drawings were taken up with this theme, depicting heavy clouds, rain, cars and car parking buildings (Figure 2).

We drive, drive, drive ... and it is awful because there is not parking spaces almost. (Tane, 9)

We left early to get to my 1.50pm appointment. We went to carpark B it was full so we got sent to carpark A and it took us 30 mins to get one ... so the worst part of the trip was finding a carpark. (Tessa, 12)

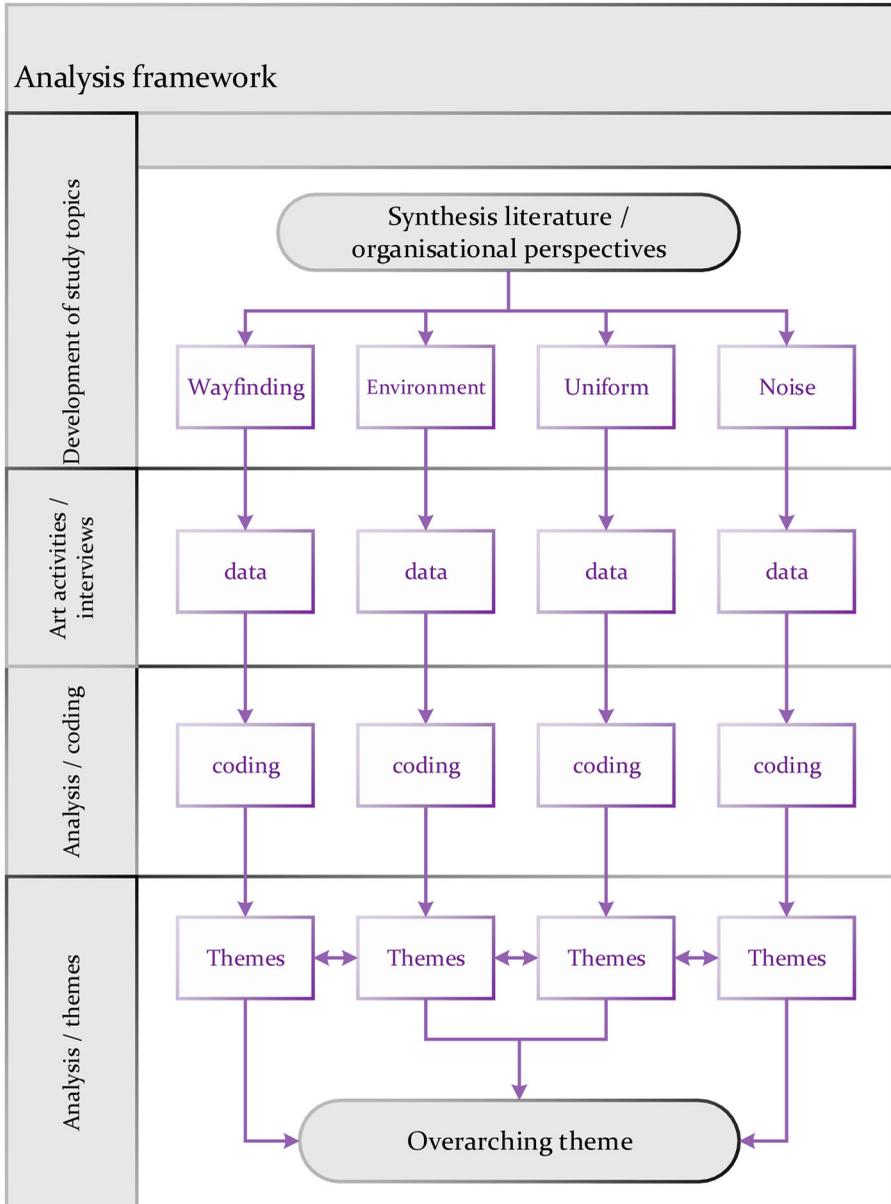


Figure 1. Analysis framework.

We got here in mummy’s car ... we got traffic ... and the carpark was closed down ... we had to do lots of loops to see if they opened it and in the end we had to park on the road ... we didn’t really know where we were going ... (Leinani, 10)

Children were also exposed to stressful situations in the car parks with multiple people competing for scarce spaces:

We got here late it was a big traffic so it took a really long time to get here and when we parked a lady said that she was going out so we parked in her place – and a man went by and he said to my mum you



Figure 2. Driving around and around in the rain.

nearly crashed into the person in front ... cause he was trying to squeeze in front of my mum ... my mum said we have been waiting here for 25 minutes. (Sarah, 7)

We went to park in the disabled van park but there were cars in there. Security should have said something to the driver. So Dad was not happy (Gary, 13).

The children sensed their parents' stress related to the time it took to travel to the hospital (which was often unpredictable), the time it took to find a carpark, and their parents' concerns about being late for the outpatient's appointment. The cost of parking also meant parents were often anxious during the interview with the children, and consequently were reluctant to stay any extra time after the outpatient's appointment.

The outpatient department is situated in the centre of Starship Children's Directorate – the hospital itself curves around a central atrium with views to the city and harbour to the north/east, and views to the city and the Domain, a major city park in the south/west. In the central atrium there is a playground with seating for families. There is no direct entrance to the Outpatients Department. Families are required to make their way from an entrance at the back of the children's hospital, up a flight of stairs, walk outside and then back inside through side entrance, or alternatively, make their way through the adult hospital, take a lift down to the third floor and make their way along a corridor that takes several twist and turns past wards and clinics. In this context, families visiting for the first time spoke of the importance of referential signs or markers on the way helping them navigate the complex geography of the new environment. Children described getting there as 'confusing', 'not obvious' and the space is like a 'maze'.

I don't like being late ... I thought we would get lost because there are lots of places to go ... when I come in the door I never can find where I am supposed to go ... it's not obvious to me at all ... every time I think I must remember the floor we go to but I never do ... when you come in there are two ways you can go and it's a bit confusing to know which way is best because it doesn't really say what it the way to go so you don't know ... I think some people probably find it quite hard to find their way around ... even we do. (Nancy, 11)

Having mastered the way once, subsequent visits were straightforward and familiar – finding the way became more embodied and there was less stress associated with wayfinding. However, if

children and their families had to find their way to the Outpatients Department from a different direction or location, then there was a renewed sense of having to plot a route all over again. Rather than a fluid environment that facilitates the flow of people travelling from one location to another, the layout was experienced as fragmented and disjointed.

We did have some issue finding outpatients today. Usually we parked in a different carpark and so we had some trouble finding the right lifts to get to the Starship section ... someone coming here for the first time may struggle to find their way through all the corridors and bits and pieces to get here. (Brian, 15)

Navigating in any environment is supported by known or identifiable landmarks. When these are not obvious due to the fragmented layout, then signs or markers helped children and families to find the way. Children described the wayfinding blue lines on the floor as helpful in providing a 'map' of where to go from arrival to destination. The lines worked well in taking children and families from point A to point B in a continuous manner. However, when they needed to rely on finding signs that were positioned more intermittently, this became more challenging. Children commented that even when there were signs these were not always conspicuous or obvious in their meaning. Stella's drawing (Figure 3) captures the confusion of having to decipher the multiple wayfinding cues in the lift:

Um ... mum didn't know which button to push ... they were on the side ... we were confused. (Stella, 8)

Children commented that signs could be bigger, more prominent and at different locations around Auckland Hospital (often the gateway to Starship Children's Hospital) so that navigation from any point would be easier for families.

We couldn't find the signs ... maybe signs hanging from the roof could be easier? (Zac, 11)

Children's comments reflected differing perspectives and lines of sight related to their different size and proximity within any environment or landscape.



Figure 3. Lost in the lifts – which buttons do I push?.

Environment

The current Outpatients Department was decorated in the 1980s in pastel pinks and blues with art donated by benefactors hanging on the walls. Although for adults this colour palette might represent a certain era, children did not comment on this. Rather, the use of colour overall was identified as important to them. They felt it made the outpatients area welcoming, more inviting, less scary, more child-friendly and ‘not boring and dull like the adult hospital ... kids enjoy it a lot because it is colourful’ (Brandon, 12). Although the use of colour was identified as being more child-friendly, and therefore potentially for older children ‘childish’, participants saw this as contributing to a more homelike and nurturing environment (Figure 4).

The artwork ... the colours make it quite homey and less scary and hospital like. I am quite old I guess for the whole childish theme but I mean it still feels comforting so I mean I wouldn't really change that obviously. (Alice, 15)

The children noted that the colour in the environment was also supportive in relation to their mood – promoting happy feelings but also comforting during times of stress.

The colourful environment is very nice and encouraging to children, which can make you feel comforted while you are distressed. (David, 6)

The children spoke of enjoying the art on the walls and many identified with some particular paintings such as dinosaurs, hearts and sheep on waves and a large rainbow mural. Children said that they liked the certainty of having a familiar painting to come back to, that this helped relieve boredom and many stated the paintings made them feel happy.

Although some children asked for more TVs to be provided, there were others who requested alternative activities or entertainment while they were waiting:

Children's safe computers ... for example and I'm not trying to offend you but women naked or something like that ... so sites that have appropriate language. More TVs cause it just too bland ... children get bored and they misbehave ... More updated books ... a teen section, a children's section and a toddlers' section ... they should have a little library in each waiting room because it



Figure 4. The hospital should be full of colour.

can be a little boring waiting sometimes. There could be a tablet or a touch screen computer where you can make the paintings more interesting. (Abdul, 11)

Some children suggested it would be good to have separate waiting areas for younger and older children as well as separate TV areas and quieter areas with books.

I think you should use separate rooms for different groups because I as an 11 year old don't like watching Disney junior. (Tia, 11)

Furniture designed specifically with children in mind such as the lower desks was appreciated as 'making "smaller" people feel normal and not so overwhelmed' (Amelia, 7). Glenda's (11) picture (Figure 5) shows the reception desk in the Outpatients Department which has been built for the height of the child. Here particularly, younger children can see across the desk to the person taking their admission details.

Uniforms

Again, colour was significant with many children talking about their preference for more colour and patterns and linking this to feelings of happiness, calmness and feeling less scared (Figure 6).

Uniforms should have a bit more colour and should be more creative ... like put colourful pictures or nice words on the uniform. The uniforms the nurses wear are a little plain and I think that if you decide to add more colours and creative designs the children in the hospital might feel a little more comfortable and relaxed. (Wiremu, 14) I think the uniforms should be more colourful because bright colours make people happy. (Aroha, 8)

Although some children liked the uniform (if it was more colourful) other children commented that they preferred nurses and/or doctors to wear normal clothes as this gave them more of sense of the health professional as a person.



Figure 5. Lower reception desks make children feel normal.



Figure 6. Bright coloured uniforms.

The clothes doctors and nurses wear are weird ... they're really weird cause they're not what everyone wears ... um you don't see many people wearing those clothes ... white and blue ... they should wear clothes that normal people wear. (George, 10)

Children talked about wearing what 'normal' people do, not being 'boring', and being able to see more of the doctors or nurses' personality if they wore their own choice of clothes.

It reminds you that doctors are people too, they're not just some big person who is telling you you're sick. You know it's good to know they are people too and they wear normal clothes – it sort of reminds you of seeing a friend ... it is quite comforting. (Isiah, 14)

There were some gendered aspects to the children's responses for suggestions to colours for uniform – for example, men should wear blue and women pink. Some children also believed that doctors should not wear a uniform; however, nurses should, as they need to be 'hygienic'. Uniforms were seen as a way to be able to identify health professionals; however, the children also said that so long as health professionals wore a name badge they felt confident in identifying them or asking them questions.

I know it points them out ... but it just gets a bit boring after a while. (Maia, 12)

Overall, the children commented that uniforms were not as important as the type of person a health professional was (kind and helpful). Children's drawings expressed their creative approach to uniform design, which included lots of colour, patterns, tiaras and wands (Figure 7).

Sounds

The types of sounds children identified were helicopters, TVs, elevators, doors shutting, vending machines, wheelchairs, crutches, the clock and technology which included either devices (i.e. tablets, iPads and phones) children and families were using or medical equipment, children giggling, babies and children crying, ladies heels, doctors chatting, nursing laughing and people talking (Figure 8).



Figure 7. Colourful fun uniforms.

Some children found the sounds comforting and ‘sometimes it is loud but it feels like home ... busy and noisy’ (Amy, 10).

Some sounds, like chatting and laughing, were seen as cheerful and made the hospital seem less like a hospital or a scary place. The beeping of medical equipment (regular) was seen as soothing for some children.

Ladies heels going clikity, clikity ... doctors chatting ... nurses laughing ... it helps cheer you up ... it doesn't sound like a hospital ... it doesn't sound like a scary place. (Sam, 8)

For other children particular noises were ‘annoying’ such as creaking beds, the ‘contraption things’ (pulse oximeters) nurses carry around, and other children using crutches.



Figure 8. Lots of noise.

You know the crutches? People who have broken their leg? Makes me feel kind of weird ... it's kind of annoying. (Abisha, 11)

Sometimes they [sounds] annoy me but mostly I don't care ... usually they come from the creaking beds or those contraption things the nurses carry around. I feel worried for the person that is howling but the chatting I just ignore. (Vinay, 12)

Noises identified as being particularly loud and overpowering included tablets, phones and TVs. Children suggested having some background music (nursery rhymes for younger children) and some quiet areas with no TVs.

Having a safe space and feeling cared for ...

One of the findings that traversed all the topics was that although children were aware of the physical environment, another important aspect that contributed to a positive experience of the hospital environment was their relationship with staff. Feeling 'safe' and 'cared for' were dominant themes across the children's data (Figure 9).

Whenever I come to Starship I feel safe ... when I say safe I mean the Doctors and Nurses are so kind they make us forget our worries ... it is a safe place for children and joyous environment ... the doctors and nurses have great personalities that makes it really easy to communicate with them and tell them our troubles and difficulties. (Ariana, 14)

Children talked about feeling at home, feeling safe, having a safe place to communicate and be themselves. This was facilitated by the staff as the children said even if they felt scared at first the staff made them feel safe. The children felt they were able to relax, trust and worry less.

The staff are friendly and helpful ... they show sympathy and kindness to everyone. (Chris, 11)

Very safe environment ... it's very safe and colourful. (Kolinaisi, 12)

Coming to hospital is scary at first ... but the staff are great ... they are great at making sure you understand what is happening and answer all your questions. (Antony, 14)

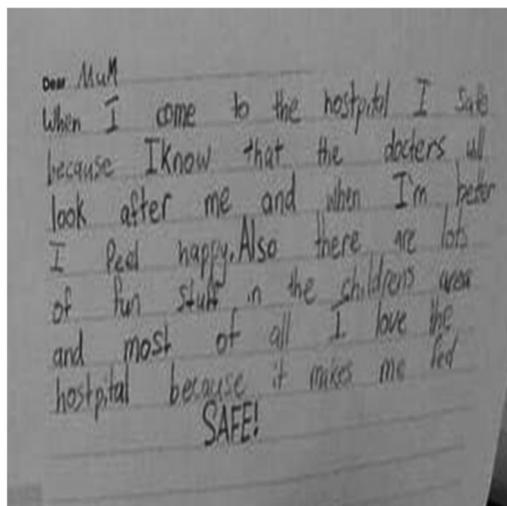


Figure 9. A letter to Mum – I feel safe.

In the outpatient environment characterised by a short stay, with parents present, children reported how they felt safe and cared for (Figure 10).

Discussion

This study supports children's ability and agency in being informed consumers of healthcare and contributing to discussion on healthcare environments. The findings of this study are similar to other studies around the importance of colour in all aspects of the environment, and the importance of access and orientation to the environment (Lambert et al., 2014). Similar to participants in the current study, the children in Lambert et al. (2014) study discussed the need for clearly defined areas, age-appropriate spaces, play areas and activities, the need for clear signage to find their way between area of the hospital and a clear sense of their position in relation to the rest of the hospital. Studies in which children were inpatients suggest that bringing the outside in (nature such as trees, plants, birds, flowers, etc.), having access to open spaces for movement and having personal space was also important to them (Coad & Coad, 2008; Lambert et al., 2014). The shorter length of stay for children in this study (typically 1–2 hours) may mean that these features were not such a priority. However, given the recent attention on more natural environments and the children's desire for colour, pattern and texture, thinking about using projection technology could be a way of creatively constructing spaces (Hegarty, Roche, McCabe, & McCann, 2009).

In this study colour was associated with feelings of happiness and making the environment seem less clinical and scary. Preferences for certain colours by often younger children were gender related (blue for boys and pink for girls), but across all ages children preferred bright colours for art, the walls and for any sort of uniform. Other studies have found that colour is an important emotional trigger for children and can positively influence their mood (Coad & Coad, 2008). The choice of colours at Starship Children's Hospital to represent the elements of nature supports the work of Margo Adair who describes the importance of remembering peoples' connections to nature, such as the earth, sky, sea and forest (cited in Biley, 1996). Adair suggests that being disconnected can lead to feelings of isolation, however being connected can lead to feeling included and energized (cited in Biley, 1996).

This study supports previous research suggesting beautiful things and an aesthetic environment are deemed to be important factors in contributing to children's perceptions of the overall healthcare experience, whilst potentially contributing to feelings of well-being (Bishop, 2011;

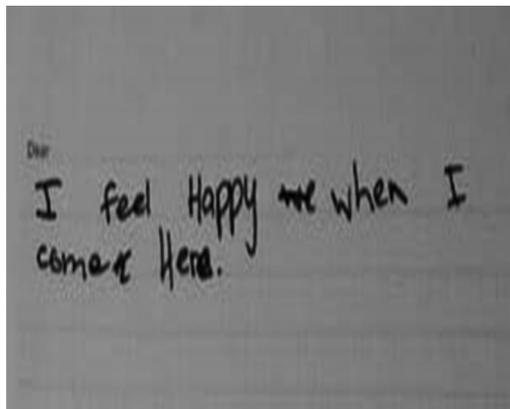


Figure 10. A letter to the hospital – I feel happy.

Lindeke, Nakai, & Johnson, 2006). Children in this study pointed to particular works of art, which they related to either as something familiar or as a distraction. Pictures on the wall have been shown to increase relaxation and provide distraction (Ulrich et al., 2008), whilst Pati and Nanda (2011) found projecting images on a wall as a continuous slide show had a calming effect on children. Rollins and Wallace (2016) used vintage photos as an art-based intervention that could be useful as a form of distraction from pain and discomfort. The researchers found that children were able to identify favourite photos and explore both the familiar and unfamiliar nature of the images. Children discussed 'liking pictures' where something was 'cute' or 'funny'. In the current study children identified pictures as being something 'familiar' to return to, in a larger unfamiliar environment. Pictures in this context provided an anchor to the particular space. Researchers have suggested that the use of art that includes colour, nature, water and animals can be useful as a way of distracting and decreasing stress for children (Hathorn & Nanda, 2008).

Research suggests that wayfinding is an essential part of hospital design so that people know where they are, where they are going to and how to get there (Ulrich et al., 2004). It is suggested that clear visual cues are provided such as signage, colour, texture, patterns, and lighting to orientate children and families and that the number of decision points along the way are minimised (Carr, 2011; Ulrich et al., 2004). Carr (2011) goes further to suggest that outpatients' facilities should be located outside of any inpatient facilities. Attention should also be given to children's spatial relationship with the environment, so that signage and visual cues are not only physically available to them, but also take into consideration their development age.

Travelling to the hospital, finding an open car park building and finding a car parking space was identified as one of the most stressful aspects of the hospital visit by many children. Children picked up on the stress their parents experienced and were at times exposed to negative behaviour from the members of the public related to parking. Parents pay for parking on an hourly rate, so they were also very aware if their child's appointment ran over time, they would have to pay for another hour's parking. Kale (2012) suggests that paid parking might contradict the notion of person-centred care and that healthcare should be free at the point of delivery. Mason (2010) found that car parking contributed to the stress and anxiety for families and impacted on health outcomes for inpatients.

Sound can have a negative effect on patient outcomes, for example increased stress and headaches (Joseph, 2010; Joseph & Ulrich, 2007; Ulrich et al., 2008). Children in the current study described particular noises as being 'annoying' or stressful such as other children crying, monitoring equipment or crutches, however other sounds were perceived as 'comforting' and making the environment seem more like 'home' and familiar. Sounds such as TVs and tablets were described as dominating in the environment and children discussed their preference for separate and quiet spaces. The use of TVs as a distraction in public waiting areas is problematic in a children's environment, as although it provides a 'universal' distraction in that environment, there is no way of tailoring this to individual preferences. The TV becomes part of the background noise of the environment yet also potentially intrusive. There is limited scope to make available television programmes that will appeal, and are age-appropriate, throughout the years of childhood/youth. The use of carpet and acoustic materials in the environment can dampen the impact of noise (Joseph & Ulrich, 2007; Philbin & Gray, 2002; Rollins, 2004) whilst other studies suggest that the use of cool colours can mediate the perception of noise (Tofle, Schwarz, Yoon, & Max-Royale, 2004).

Campbell, O'Malley, Watson, Charlwood, and Lawson (2000) suggest that clothing is a powerful form of communication that signals the professional identity, what the wearer does and what could be expected of them. Some studies have suggested that uniforms may contribute to children's fear in an unknown environment (Hsu, 2004). Albert, Wocial, Meyer, Na, and

Trochelmann (2008) found that children feared white uniforms, while positive emotions were associated with bold colourful patterned tops. Festini et al. (2009) found that children preferred multi-coloured uniforms to a single block colour and that this was linked with increased perceptions of reliability of the nurse by parents. Children in this study showed a preference for bright coloured and patterned uniforms, whilst also acknowledging they liked to see the health professional dress in their own clothing, as this provided them with visual cues around the personality of the person. Therefore, uniforms may contribute to the cues that identify health professionals to children, but equally to the unfamiliarity of environment, where health professionals do not wear 'what everyone else wears'. In an unfamiliar environment visual cues as to 'who' the person is wearing the uniform may be harder to read. Campbell et al. (2000) found that parents and children did not mind if nurses did not wear a uniform as long as they were identifiable. Their priority was that health professionals were approachable regardless of uniform. In this study children stated so long as health professionals wore a name badge, they felt confident of being able to identify them. Alongside this children spoke of how approachable health professionals were and how they felt 'safe' and cared for.

This study reinforces findings from the research by Birch et al. (2007) that children experience hospital places as social spaces not just clinical spaces. Andrews, Evans, Dunn, and Masuda (2012) argue that researchers need to consider health as a 'geography' and an interaction of space and its influence on health. This is evident in this study that has shown that environment and people have an impact on humanising healthcare encounters. Although this study focused on the environment, children were quick to point out the importance of the relationship with others in this environment.

Limitations

Recruiting and interviewing children in the outpatient's environment brought with it several challenges that impacted the data collected. These included the physical environment, where the noise from clowns, helicopters and other children made it difficult to record the interviews; lack of privacy due to being in an open space meant it was difficult, and at times not appropriate to ask further questions; and parents anxiety around missing their child's appointment meant interviews were often cut short or hurried. Despite these limitations, overwhelmingly the children appeared to enjoy the opportunity to share their thoughts around the outpatient environment.

Implications for practice

Healthcare environments contribute to both positive and negative experiences for children, young people and families. Not only is the physical environment, such as the use of colour, appropriately-sized furniture and use of art important; but also access to the environment, such as car parking and wayfinding. In planning healthcare environments attention should be given to accessibility, and the stress that challenges to access may present for children and families, in some cases possibly limiting their use of health services. Health professionals have an essential role in mediating environments and often provide the interface between a particular environment and children's experiences. Both the environment and health professionals (nurses) have an important role in humanising healthcare experiences for children. Children value 'knowing' who the health professional is, which may extend beyond being identified by a uniform, rather based on having a sense who the health professional is as a person. This is an important consideration in deciding how to accommodate both professional identity, creativity and individuality when designing uniforms or staff wearing their personal clothing. Above all children and young people would suggest that fun, creativity and feeling safe are important aspects to any healthcare environment.

Impact statement

Research with children (rather than on children) values the unique perspective that children have to contribute to hospital design. Children in this study were articulate and clear about their views on the environment, uniforms, noise and wayfinding, however also pointed out to the researchers the importance that people have in mediating the impact of hospital environments.

Conclusion

Including children in research and discussion around what matters to them has found that children value environments that are creative, colourful, child-friendly and welcoming. Children in this study reinforce the agency of children and their ability to comment and participate in research and decision-making around their environment and health care.

Note

1. Starship Children's hospital refers to the physical building, whereas Starship Children's Directorate refers to the overarching health service delivery.

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