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Being Wheeled or Walking: A Qualitative Study of Patients' Spatial Experience in Two Distinct Day Surgery Centers

Abstract

Objective

In this article we explore what a different way of moving - being wheeled versus walking - means for the spatial experience of day surgery patients.

Background

Day surgery centres can be conceived in very different manners. Some are organised similar to traditional hospital admittance; others are located in a specifically designed part of the hospital, and receive patients as guests who walk through the entire procedure.

Methods

We conducted semi-structured interviews with 36 patients at two distinct day surgery centres.

Results

Despite the different managerial concepts and corresponding spatial designs, in both centres patients' spatial experience is shaped by the interrelation of material, social and time related aspects. However, the chosen concept results in a different experience throughout patients' journey.

Conclusions

Based on an analysis of the different journeys we conclude that patients' interpretation of a hospital's care vision is influenced not only by what the hospital communicates explicitly or how it educates its staff, but also by what is implicitly told by the built environment.

Keywords: built environment, day surgery, patient experience, space, qualitative research

Patients admitted for day surgery often question the necessity of being wheeled to the operation room (OR) while being perfectly capable of walking (Annemans, Van Audenhove, Vermolen, & Heylighen, 2014; Keegan-Doody, 2007; Nagraj, Clark, Talbot, & Walker, 2006; Turnbull, Wood, & Kester, 1998). From the perspective of hospital designers, consequently, the question arose how the various ways in which patients moved, either being wheeled or walking, affected their spatial and overall experience of their trip to the OR. To address this question, we analyzed two different wards that are part of the same hospital group: (1) one is conceived as a day surgery ward referred to as inpatient day surgery center where patients are wheeled to the OR in bed; (2) the other one is a recently opened day surgery center, which is separated from the main hospital and conceived as an outpatient center where patients are ambulatory and walk to the OR.

Although undergoing similar medical treatments and exposed to comparable stresses, patients in inpatient day surgery centers, who are wheeled, are likely to experience their hospital stays differently from patients in outpatient centers, who walk. In this article, "wheeled" refers to patients who are wheeled from a pre-operative area to the OR on a stretcher, bed, or wheel chair. "Walking" indicates that the patient walked the distance from the pre-op area to the OR. The overall experience of patients is clearly affected by their spatial and built environment. When opting for a particular concept, either in- or outpatient centers, architects and hospital boards must take this spatial impact on patients' experience into account. This study aimed to identify how ways of moving patients to surgery impacted on patients' spatial experiences. The study is significant because the findings support architects and hospital boards in planning and designing day surgery centers.

Literature Review

Numerous studies concentrate on the experience of patients visiting day surgery centers. Most studies were conducted from a nursing perspective and address aspects like preoperative anxiety, postoperative pain or psychological follow-up (Mitchell, 1999; Stevens, van de Mortel, & Leighton, 2001; Costa, 2001). Given our interest in the role of the hospital design on patients' experiences, our research focused on the treatments taking place within the hospital premises.

We experience the built environment through many of our senses (Pallasmaa, 2005; Rasmussen, 1964); thus, patients' experience when entering the surgery center is multisensory. Clinical nurse consultant Dani McKenna (1997), who researched the importance of the senses in day surgery patients' experience, mentions architecture only from the visual perspective, e.g., closed doors, cluttered ceilings, and movable walls. The impact of spatial organization goes far beyond vision. The sounds people hear in the OR (Mitchell, 2008) or recovery rooms (Stevens et al., 2001) cannot be stopped by curtains as effectively as by walls. This illustrates how the materialization of physical boundaries affects the hearing experience. Objects' haptic qualities add to patients' comfort, and thus to their general wellbeing. Comfortable chairs in the waiting area are important to assist patients in feeling less stressful prior undergoing treatment (Rhodes, Miles & Pearson, 2006). Another key element in day surgery centers is cleanliness of the space (Mottram, 2011): patients' perception of cleanliness is considered as proportional to the management's commitment to the patient, as well as the care quality (Keegan-Doody, 2007; Mitchell, 2010).

For Annemans *et al.* (2014), the patients' perspective of their environment is influenced by the way they move within the environment, and this is central to this study. Mitchell (2003) also believes that being wheeled into the OR significantly affects patients' experience. As losing

control may cause fear, being allowed to walk into the OR can be comforting and provide patients a sense of being physically in control of the situation (Costa, 2001). Although walking might not be what patients expect when going to the OR (Mitchell, 1999), this is a normal everyday life experience (Markovic *et al.*, 2004), and thus the hospital becomes a less disrupting experience for the patients. Walking does not allow patients to block out the medical setting by closing their eyes, like they could do on a stretcher or in a wheelchair, and it heightens their awareness of the immediate environment (Markovic et *al.*, 2004).

From a social perspective, the hospital environment impacts on patients' self-images and their interaction with others. A hospital gown clinically transforms the individual body into a body of medicine (Gibson & Sierra, 2006). Changing into the gown and leaving personal belongings behind reminds patients of their future role in the hospital, which can heighten their anxiety (Markovic *et al.*, 2004). Having to share a changing room with patients of the other gender (Gilmartin & Wright, 2008) or having to wait in a room that is not designed for waiting compromises patients' feelings of dignity and privacy and contributes to their sense of feeling powerless, which once again increases their vulnerability and anxiety (Rhodes Miles & Pearson, 2006). Privacy is also a major issue in the preoperative room, as patients may feel uncomfortable discussing health issues within hearing of other patients or their own relatives (Stevens, van de Mortel, & Leighton, 2001).

Spatial layout is important when designing and managing day surgical centers. When patients refer to a day surgery center as an assembly line (Mitchell, 2010) or a conveyor belt (Mottram, 2011), this impression is likely reinforced by the built environment. Indeed, the organization of the spatial layout can support or hamper social interactions. Patients consider these interactions, such as direct contact with others, and the presence of and communication

with caregivers and relatives as comforting elements (Markovic *et al.,* 2004; Rhodes *et al.*, 2006). The hospital building should support relatives accompanying patients throughout the stages of the day surgery. If permanent physical presence is impossible, a visual connection through a window is also reassuring, making patients feel empowered and less abandoned (Rhodes et al., 2006). Communicating with patients takes time for an already bustling nursing staff. Lloyd (2003) calls this the 'ambulatory paradox': day surgery centers want to reduce the time spent with patients, but patients crave mostly for more attention from the caregivers. Patients constantly evaluate their caregivers, as well as the hospital they are in, from their personal perceptions of time - time considered wasted, time spent usefully, or time spent efficiently (Mottram, 2011).

Overall day surgery patients' experiences seem to be colored strongly by their expectations (Costa, 2001). Unanticipated events such as waiting time, having to walk into the OR, or pain negatively alterpatients' perceptions of the hospital visit. Patient management is often evaluated based on the patient's trajectory from one stage to another. Day surgery patients are expected to follow the managerial time schedule. Any deviation from this schedule jeopardizes the streamlined plan. The organizational sequence of the nursing process should also be supported by the spatial sequence. The timed care contributes to patients feeling resentful of being treated as a number, especially when they compare the day surgery center with a production line (Markovic *et al.,* 2004). On the other hand, saving time with careful patient management, rather than wasting time, is a prime reason to opt for day surgery (Mottram, 2011).

Methodology

Context: Two Concepts of Day Surgery Centers

To investigate how different concepts of day surgery centers impact on patients' spatial experience, two Belgian hospitals within the same hospital group were selected as the research setting. Both hospitals had the same staff policies and overall care vision. At the inner-city campus (302 beds), day surgery was organized similar to long-term admissions (Figure 1) and only the duration of the patient's stay differed. Patients arrive in the morning, are registered, go to the ward (identical to any other ward), and are assigned to a room and bed. When it is time for the OR, they are wheeled in their bed downstairs where the surgery or examination take place. After the intervention, patients stay in the recovery room before being brought back to their bedroom. The patients wait in the recovery room for the doctor to discharge them (Figure 2).

On the second campus (610 beds), day surgery takes place in a hospital building specifically designed for this purpose (Figure 3). The center has its own entrance and patients register at a desk next to the front door. Patients sit in a waiting room before being called by a nurse to start their journey through the center. First, patients are invited into a changing room with lockers, where they must don a hospital gown after removing all garments. After a short wait they are lead to the preparation room to measure blood pressure and be prepared for surgery. Depending on their surgery and condition, they either walk or are pushed in a wheelchair into the OR. After surgery, they are escorted to the recovery room before being accompanied to a single or multiple patients' room or the lounge, depending on personal and medical requirements. From the patients' lounge, they are dismissed (Figure 2).

Study Design and Sampling

To explore how both concepts impact on patients' spatial experiences, the study addressed the role of architecture therein. Examining this role is challenging as people have difficulties in expressing how they move within and experience a particular space. To expand our understanding of the patients' experience, we adopted ethnographic methods such as image production by asking participants to make drawings and/or pictures (Harper, 2002; Pink, 2007; Radley, 2010), accompanied walks (Collier, 1967; Harper, 2002; Orobitg Canal, 2004; Pink, 2008; Pink, Kürti, & Afonso, 2004; Ross, Renold, Holland, & Hillman, 2009), and the use of video as a basis for reflection (Merchant, 2011; Mollo and Falzon, 2004; Pink, 2007). We asked patients at the day surgery center to document their stay by photographs or drawings, the first author accompanied them from the ward to the OR at the inpatient center, and the routes from ward or waiting area to the OR and back were video-recorded in advance, using this video material as a basis for the interviews. Additionally semi-structured interviews were conducted with the patients after they returned from the OR and before discharge. The structure of the interviews occurred from the succession of spaces and halls along their trajectory to the OR. The methodological approach was first explored in a pilot phase (Annemans, Van Audenhove, Vermolen, & Heylighen, 2012a).

In the inpatient center, a nurse asked patients to participate in the study. If they agreed, the researcher (first author) entered the room and explained the study's aim and approach. To explore patients' experiences with the way of moving from preparation area to the OR, the researcher accompanied participants when they were wheeled to the OR and back. After they had returned to their room, the actual interview took place. To facilitate the interview, each participant was offered to watch and comment on a video recording the trajectory to the OR. The

fieldwork was conducted during six consecutive weeks, at the rate of one day a week, resulting in 12 interviews with an average length of 21 minutes 19 seconds

At the outpatient center, the researcher engaged in conversation with patients seated in the waiting room. After she explained the study's aim, patients agreeing to participate were asked to pay specific attention to the built environment while being moved from the waiting area to OR. After surgery, the researcher conducted the interviews, supported by previously recorded video material if desired by the participant. As these patients' way of moving could vary, being wheeled in a bed or wheelchair or walking, the mode the patient moved to the OR was specifically addressed in the interviews. These interviews were generally shorter, with an average length of 11 minutes 52 seconds. Nevertheless, more interviews were conducted with 30 people agreeing to participate in the study and sign informed consents, while 25 were actually interviewed. The fieldwork took place two days a week, during three consecutive weeks.

Together the participants at both locations constitute a heterogenic adult group, consisting of men (6 inpatients, 8 outpatients) and women (6 inpatients, 17 outpatients), young and older (60+; 6 inpatients, 7 outpatients). All participants were Dutch speaking, as was the researcher.

Ethical considerations

The study design was submitted to the hospital's ethical committee. After an oral presentation and discussion on how the research should be approached (concerning permission to enter rooms, participants' anonymity, data use), approval was obtained. The informed consent form explained the study's aim and methods and informed participants they could withdraw at any time without jeopardizing their treatment or care. Participants' anonymity and confidentiality were guaranteed. Since these data were to be shared with architects and hospital boards in a later

phase, destroying or secluding the data within the research group was not possible. Therefore, the informed consent forms bearing the patients' name were given a code, which was used throughout all further data processing. These forms were stored separately from the substantive data.

Data Analysis

The audio recordings of all interviews and accompanied routes were transcribed verbatim. The transcripts were analyzed thematically with qualitative data analysis software (NVivo, 2014) to identify common themes amongst patients' experiences at both locations. To establish representative themes with their corresponding codes, we based the analysis on themes previously pinpointed by a study of patients' experience at the inpatient center being wheeled to the OR (Annemans, *et al.*, 2014). The themes were expanded by codes expressing topics coming forward during the analysis.

A first thematic analysis was done according to space-oriented codes (reception, waiting room, room, hallway, elevator, changing room, preoperative waiting area, OR, recovery room, lounge, outdoors). Later, people (relatives, staff, fellow patients) and activities (waiting, being wheeled, walking, sitting, lying down) involved in patients' experiences were identified. Time- and motion-related aspects stepped forward across all other categories. All quotes used in the findings were translated to English by the authors.

Results

We found that spaces, people, and time-related issues affect patients' experience of a day surgery. Studying an in- and outpatient center brought similarities and differences between both to the fore.

Spaces

Given the short length of stay, day surgery patients spend a large part of their hospital stay moving from one space to another. Different types of spaces can be distinguished between (1) those where the patients are meant to stay and (2) those meant for circulation. The design and concatenation of these spaces differ significantly between the in- and outpatient day surgery center.

Inpatient center. In the inpatient center, immediately after arrival, patients are asked to change into a hospital gown, put their clothes in the closet, and wait in their bedroom. Preoperative care, like taking blood pressure, happens in the patients' assigned room at the ward.

From the room, they are wheeled in bed to the operative area. During this journey, zenithal lamps often create a visual blur. Other sensory perceptions gain importance: *'when we arrived downstairs, it got a little colder when we rode by a door […] that gives some variety because when you're lying down, you don't see such things.'* The participants wheeled around in bed prefer a smooth journey for nurses and patients: *'Here she has to go push a button* [to open the door], *why can't they have a rope or something, so you wouldn't have to wait and she wouldn't have to walk to that button to open the door.'*

The waiting area before the patient goes to the OR is a large room with curtains between the beds of patients waiting to be guided to the preoperative room. At least two patients had the feeling they had to pass time in a hallway rather than an actual place: *'it bothered me that it was a hallway, not a room,* [I thought it was] *a little bit disrespectful to leave people there. It seemed to serve multiple functions at once.*'

Once moved to the preoperative and operative rooms, patients' attentions were vividly caught by the medical and technical equipment: *'At the OR […] you have all these things, equipment, […] you have to wait there, and everywhere you see needles etc. Can't they hide that a little?'*

When being wheeled back to their room, most patients were still somewhat sedated, and seemed to pay little attention to the building.

Outpatient center. Patients in the outpatient center check in at the front desk and are asked to sit down in the waiting area, which is lightly decorated to avoid appearing like a hospital. One after the other, patients are called and taken to the changing room to don a hospital gown, bathrobe, and slippers. The changing room looks like a hallway with small changing alcoves at the side and lockers to store personal belongings. Many participants found this confusing, not knowing where to get undressed, where to wait, or what to do: 'I didn't know whether to get changed here [in the main room] or the toilet [not even seeing the changing alcoves]' or 'it was a little chaotic, messy [in contrast with the waiting area].' The room is considered functional but cheerless, and is described as 'a swimming pool', 'factory-like', or 'a conveyor belt'. Patients are then assigned to a private preparation room, where they undergo some preoperative treatment and can quietly wait until being asked the walk to the OR.

Giving patients more control over their situation is an important reason for making them walk to the OR; however, this can have a reversed effect. Indeed, a participant experienced the automatic door on the route as a challenging threshold: *'Those sliding doors were really not pleasant. […] I had to enter there and I felt those sliding doors squeezing me. I was stuck between them, because they closed behind [the nurse]*.'

Walking into the OR does not allow patients to ignore their environment. A participant mentioned: *'When you walk [to the OR] you're more concentrated on where you go. […] I have the same [experience] in a car, when I'm sitting next to the driver, I have no clue where I am, as compared to when I'm the one driving.'* Some are rather rational about it: *'The OR, that's technical obviously. It's full of things.'* Others would have preferred being able to close their eyes and being taken care of: *'When you're walking into your own operation room, you can see all these instruments, that made me very anxious.'*

After surgery, patients are brought either to a private room, into a large room with curtains separating beds, or they can sit down and relax in the lounge – all places where they have not been before. Even those who opted for a private room did not perceive the room as theirs, because they had not been there prior to the surgery.

Similarities and differences. The sequence of spaces in the overall patient journey - from admission, pre-operative assessment, OR, post-operative recovery, and discharge or dismissal home - impacts on patients impression of the day surgery center. One participant at the outpatient center who had previously visited the inpatient center compares both: *'But why? Why do you have to wait in a waiting room? Then you go to the changing room, there you have to wait again, then they bring you further, then you're being- ['processed']. In [the inpatient center] they are helping you. They assist you to your room, your bed, your husband can be with you.'* For this woman having her own room and bed and being assisted were important elements of feeling taken care of. In the outpatient center, she explained she felt processed like an object that had to be fixed instead of a person needing treatment.

Despite these different approaches, participants' experiences of certain spaces, such as the OR and the recovery room, are fairly similar at both locations. The OR's machinery

impresses and fascinates, and patients attach great importance to the cleanliness of the spaces and efficiency of the procedure.

How patients experience the hospital building seems to be considerably impacted on by whether they are being wheeled (in a bed or wheelchair) or walking to the OR. Sensory perception differs significantly between both ways of moving. Participants in the inpatient center frequently mentioned lamps flashing over their heads when being wheeled through the hallways and bumps at doorsteps as disturbing (Annemans, *et al*, 2014), aspects which walking patients never discussed. For walking patients, visual elements are important reference points; whereas participants at the inpatient center mentioned more non-visual elements, e.g., the differences in temperature in different spaces. The interior's materialization and the corresponding atmosphere structure patients' trajectory and create points of recognition based on sensory perception. When the patients' way of moving to the OR changes, the use of typical hospital equipment might need to be reconsidered too. Moreover, patients may perceive technical features, specifically aiming at facilitating movement, like automatic sliding doors, totally differently depending on how they move.

People

Managerial choices, like opting for a day surgery center that is either inpatient or outpatient, impacts not only on patients' spatial experiences, but also on their social interactions at different levels.

Inpatient center. As the inpatient day surgery center was conceived like any other ward, that is also how patients perceive it. It is a true hospital, living up to patients' expectations, often expressed as *'it doesn't need to be a hotel'*. Participants feel confined to the role of patient

whether they like it or not. Many of them would rather not be perceived as such, as reflected in their desire to walk to the OR: *'What I found annoying was the fact that I wanted to walk up to the last moment* [and I was not allowed]. *I don't want to be wheeled there and then having all these people passing by. That was disturbing.'*

Often the hospital environment and in particular the presence of the bed, limits patients' sense of control and makes them depend more on accompanying relatives or staff. One participant explained: '*I don't find it that important to be allowed to walk by myself. What was annoying is that while I was downstairs* [in the waiting area in front of the OR, in bed] *and I had to go to the toilet and I didn't have a bell, so I couldn't* [call for help]. *I had to wait till a nurse came*.' Being left alone, with other patients in the pre-operative area, is mentioned by participants as highly uncomfortable. It contrasts sharply with the positive feelings they associate with the presence of relatives in their room, where they will return to after surgery.

Outpatient center. Patients at the outpatient center refer to it as *'not a hospital-hospital'* or being *'homelike'*. One even compared it to a holiday resort. Yet, patients' appreciation for the created atmosphere seems to relate strongly to the associations they make: *'I thought the waiting area was exaggerated, like something I would expect in a hotel at the Mediterranean Sea, not here.'*

The lounge where patients are taken after surgery was compared to a restaurant, bistro or wellness center. It has comfortable chairs, side tables, plants and semi-transparent separation screens, and patients are brought there in their bathrobe to drink coffee and recover, accompanied by their relatives before going home. It sharply contrasts with the connotation attached to the changing room seen as *'industrial'* and *'a conveyor-belt'*. These associations

influence how patients perceive their own role, in the former situation they consider themselves as welcome guests, in the latter as a subordinate radar in a big machinery.

When patients are called from the waiting area, they leave their relatives behind. In both the changing room and the preoperative room, patients are left alone: *'I was left alone for ten minutes, no one was looking after me, that was definitely not pleasant.'* A participant compares the recovery room with the preoperative rooms: *'This is indeed nicer than being in such a hutch* [like the pre-operative room], *there you're completely isolated […] but here, at least you see some movement.'* Several others also appreciated seeing staff being busy around them. One patient who was treated under local anesthesia mentioned the tent that was put over his head, preventing him from seeing the surgery and surgeon. Nevertheless, he felt very reassured: *'the only contact I had with* [the surgeon], *and that gave me a very good feeling, was that he was constantly humming. I thought, as long as he's humming, everything is going well.'*

The lounge also provides a separate area for relatives and patients recovering after surgery. Several participants mention that they feel reassured by the hospital's attention for their accompanying relatives.

Similarities and differences. Being wheeled or walking seems to play an import role in patients' self-images. Participants at the inpatient center expressed a desire to walk to the OR, as it would make them feel less like a patient. Some participants at the outpatient center, on the other hand, were happy that they were offered a wheelchair - *'Sometimes it's nicer to be sitting […] because it gives a sense of security'* - or did not appreciate the walking at all - *'Having to walk was a little annoying with that drip,* [they should just have put me in a bed].'

The building's appearance can affect patients' self-esteem (Annemans, Van Audenhove, Vermolen, & Heylighen, 2012b), and impacts on their expectations about what is going to

happen. When the environment does not match patients' expectations, patients' may have a negative impression or perceptions. As the inpatient center meets patients' expectations of a hospital stay better than the outpatient center, the latter evokes more extreme reactions. Participants at the inpatient center manage quite well to describe its atmosphere, using expressions like 'hospital-like'. Participants at the outpatient center struggle when asked about how they feel about the outpatient center. Neither the waiting room, the changing room, nor the lounge matched their idea of a hospital environment. To express their appreciation or disappointment, participants frequently use metaphors, positively or negatively, creating a vivid image of the place.

Being in a hospital means interacting with others. The patients' experience of the way of moving to the OR and their perception of the building, was not an individual construct. The interaction between patient and staff was shaped through managerial and material interventions. On an individual level, managerial decisions concerning organization and space can support or thwart patients' self-control. For those in a room, both at the in- and at the outpatient center, nurses clearly fulfill a medical role, whereas in the lounge nurses take part in creating a *'wellness'* atmosphere. Spatial organization can also make people feel alone; at both centers, feelings of loneliness were triggered by the preparation room before the OR. On the other hand, spatial organization can also support social relations even without direct contact, e.g. through a visual connection.

Time

Through human movement, space becomes interconnected with time. As a patient, moving or being moved from one space to another means travelling at a certain speed and

implies a certain rhythm. When participants mention speed, this can relate to the speed at which they move or the speed of the procedure.

Inpatient center. Patients who are wheeled to the OR have only limited control over the speed at which they travel since the caregiver is determining the speed. Some really dislike their lack of control over the speed; whereas others appreciate it for that very reason: *'sometimes they rode pretty fast. I liked that. I'm lying in this bed, so nothing can happen to me'*. This patient considers being wheeled in bed a positive distraction from the rather boring time at the inpatient center. Being wheeled generates rhythmic sensations often directly related to spatial elements, like ridges, imitated by participants as *'tum, tum, tum'* or *'click, click, click'* or referred to as *'a cobblestone street'* (Annemans, *et al.*, 2014),

Lying in bed appears to stretch the experience of time. A participant testified: *'When you're lying, you look around more […] it's not that there were other things standing out, but rather that you have more time to look around, compared to while walking.'*

Patients mention not being informed about and having no control over the waiting time: *'When is the doctor actually coming? It's always like that, when the environment is cozy, it's more pleasant to wait than when you're standing in a hallway for example.'*

Outpatient center. When patients are walking to the OR, the pace set by the nurse can be too high, so that keeping in step with the nurse may be uncomfortable for patients, especially when the space is not adapted for nurse and patients walking in front. A young girl explains: *'I thought the nurse* [who was holding the drip] *was walking very fast. I thought, oh no, if she's walking that fast with my drip, that's not easy to follow.'*

Participants at the outpatient center mainly referred to the speed of the procedure. *'The changing room, that's fine, you have to wait there a minute or two until they come and get you. […] Then the preoperative room, also two minutes, not even. […] The recovery room, I was in there only five minutes then I came here. […] It was the fast track, all together 25 minutes I think, that's fast!'* Experienced time can differ from clock time, however. A participant notices this difference himself: *'it took at the most ten minutes, […] then they brought us down, but it seemed to have been much shorter.'*

How time is experienced can be influenced by the design of the space one is in. When the places where patients have to wait do not seem to be designed for waiting, it strengthens their impression of the space being planned haphazardly. One participant said: *'As a patient you don't have the feeling to be an individual.'* Someone claimed about the entire route: *'The general impression I got is that of the waiting room.'* Despite the waiting time, the design and concept of the waiting room and lounge at the outpatient center made people feel they were not in a hospital. One patient even mentions the absence of a clock as positive, as it prevented her from monitoring the time.

As patients with different surgeons were all sitting in a single waiting area, they observe people arriving after them being called first. One participant suggests implementing a system with numbers for the patients to know how many people are ahead of them: *'That wasn't very pleasant […] because you're all waiting and you don't have a number, so you don't know when it's your turn. I like clear appointments. If there were numbered tickets, you would know that you're next, and you know how long you still have to wait.'*

Similarities and differences. The travel speed is perceived rather differently at both locations. Whereas participants at the inpatient center did not have control over the speed at

which they were wheeled to the OR, they did not necessarily experience this in a negative way. The outpatient center participants seemed to be more in control, yet as they were guided by a nurse, they were forced to follow someone else's rhythm.

Regarding the speed of the procedure, participants reflect solely on the time it took to go through it. Efficiency is highly valued. Estimating the route's physical length was difficult for participants, just like judging the duration of the journey. Patients' time perception is strongly influenced by the interactions they have with others. In the waiting room of the outpatient center, the presence of different surgeons in various OR's means that patients get called in despite the arrival order which is confusing to patients. At the inpatient center, participants did not make comparisons with others; their main concern was that accompanying relatives were uninformed about the waiting time.

While moving through the hospital, patients' spatial experience comes into being by concatenating spaces along the route. In a day surgery center patients are either being treated or waiting for the process to continue. Though each space is assigned a purpose, we noticed that in both centers, the actual waiting area had not been initially designed to be a waiting area and treatments were initiated in public spaces, such as waiting areas. Additionally, there was a discrepancy between the function of a space and the ongoing activities within. Patients perceived that they spent considerable time waiting at the day surgery center.

Discussion and Recommendations

Comfort and cleanliness have been identified as important factors indicative of commitment and quality from the management (Keegan-Doody, 2007). Our findings demonstrate that the entire material environment contributes to patients' impressions of the organization. Participants see their waiting in ill-defined rooms as a focus on the procedure, one

that neglects the patient's individuality. As a result, participants feel they are in an industrial setting. When patients are cared for as clients and guests, different positive feelings are experienced.

Our findings suggested that motion impacts on patients' spatial experience in two ways. First **the built environment becomes a concatenation of spaces as one moves through them.** The kind of cover patients need to protect themselves from others' looks is different when walking than when being wheeled. While patients in a bed are protected by the bed in which they are wheeled, walking patients waiting along the route in an unsuitable space are not protected at all. Second, as expected, **the way of moving – being wheeled or walking – has significantly impacted patients' spatial experience.** Walking gives them an active role in the care process and control over the situation; whereas being wheeled renders them passive.

The advantages and disadvantages of each should be put in perspective. Walking patients have no choice, and must remain aware of their environment. Seeing all the hospital equipment when walking into the OR is not reassuring for everyone. Although patients in the inpatient center asked to walk to feel more in control, our findings suggested that there may be circumstances where their sense of control is diminished as well, such as when patients have difficulty keeping up with nurses with a fast pace.

Comparing our findings to studies of the patient experience from a nursing perspective reveals complementary conclusions. The data confirm that waiting areas and preoperative wait, which are shaped by the managerial decision to opt for a in- or outpatient day surgery center, increase patients' anxiety. A suitable environment and insight into the care processes help to make patients feel more in control and thus reduce their anxiety. An inpatient concept, with the patient's attachment to a bedroom, underlines the status of 'patienthood'. When travelling, these

patients are protected by their bed. On the downside, their role as patient is clearly established by the material and social environment; whereas in the outpatient center the situation is normalized as much as possible. However, in the outpatient center, participants occasionally indicated that they felt they were mere statistics to the hospital and expressed a strong feeling of 'numberhood' (Markovic *et al.*, 2004)

Design recommendations concern the interrelation of spaces, people, and time. To address the *ambulatory paradox* (Lloyd, 2003), social interactions should be supported to compensate for the limited personal time nursing staff can spend with each patient. When one designs a day surgery center, whether in- or outpatient, a first step could be to afford visual contact with the staff in all areas were patients are awake. Enabling accompanying relatives to remain with the patient throughout the stay is also reassuring to the patient. Therefore, the material environment should comfortably foresee the presence of an additional person serving a dual purpose. Patients' experiences are a co-construct of their own perceptions and how accompanying relatives and staff perceive the environment and communicate about it. Many patients are reassured to know that their loved ones are being taken care of.

While efficiency is praised and patients appreciate a smooth process without wasted time, hospitals should be careful not to pass on too many responsibilities to patients and relatives to optimize the procedure for staff (Mottram, 2011). **Spaces that communicate a procedure-centered approach are least appreciated.** By viewing the staff's activities, patients can make their own judgment of their time use. Each space where patients wait should be suited for waiting, regardless of the staff's activities therein.

Limitations of the Study

To study how patient movement impacted on day surgery patients' spatial experience, both surgery centers should ideally be identical, differing only in how patients' moved in the environment. The actual comparative impact of the environment on how patients move within a surgical center can only be studied in two centers. Managerial and spatial organization plays a key role in the choice for an in- or outpatient day surgery center. To partially bypass the occurring differences, we selected two centers of the same hospital group with identical overall care policies.

Travel distance and speed considerably impact on patients' experience of motion. Due to the restrictions of working in operational hospital settings, making a detailed comparison between both settings was impossible. The route travelled at the inpatient center was the longest and the duration of the trip was quite constant, approximately 5 minutes one way. At the outpatient center, the rooms were closer together, yet the duration depended on the fluidity of the procedure. Actual duration could not be measured, as the researcher was not allowed to follow patients during procedures.

As we aimed to follow patients throughout their journey and spend enough time with each participant, the number of participants was relatively limited. Although sample size and the use of only one organization's inpatient and outpatient surgical centers limit the generalizability of the findings, the study reveals a significant impact of the patients' moving within the environment on their spatial experience and constitutes a sound basis to inform future research.

Conclusions

This study investigated what a different way of patients' moving – being wheeled versus walking – means for patients' spatial experience. This question was induced by the results of a study at a day surgery center (Annemans, *et al.*, 2014) in which various participants questioned

the necessity of being wheeled to the OR while being capable of walking. Therefore, we investigated how a different managerial concept, making patients walk to the OR instead of pushing them, impacted on patients' spatial experience, given that the type of patients and the hospital's care vision were largely similar.

Analyzing patients' spatial accounts of two day surgery centers offered insight into the relationship between managerial and spatial organization on the one hand and patients' experience on the other hand. Whereas the inpatient center considers patients as guests, the outpatient center treats patients as visitors or clients. Regardless of personal preferences, key to creating a positive patient experience is a consistent communication through all aspects of the hospital visit, through oral and written communication, treatment by staff, and spatial design.

The presented evidence indicates that patients' interpretation of a hospital's care vision is shaped by the communications explicitly made by the hospital board and the guidelines given to the staff, but also the message implicitly conveyed by the built environment. Regardless of patients' way of moving within the environment, each step in the hospital should be a controlled communication with the patients. Most striking in patients' overall perceptions are elements that do not meet their initial expectations. Because managerial and spatial organizations are closely intertwined, changing a day surgery center's concept is not an overnight decision. Only with a suitably designed environment can a new concept be fully experienced by patients as an improvement.

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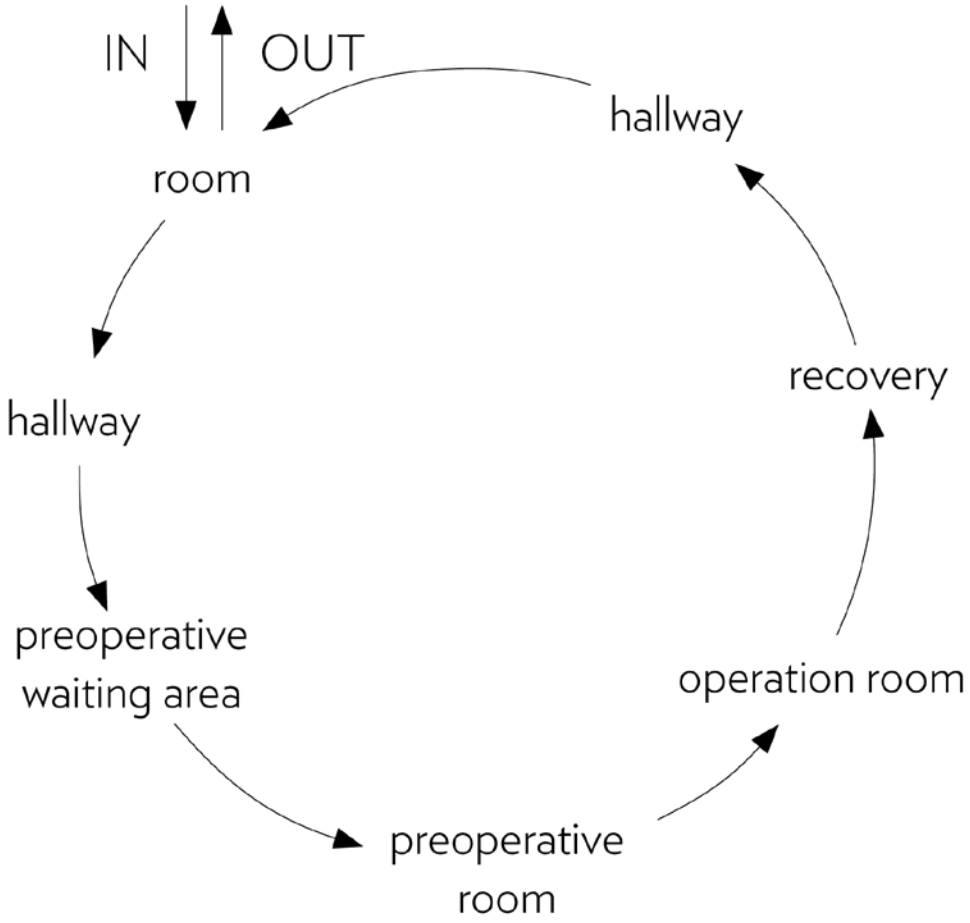
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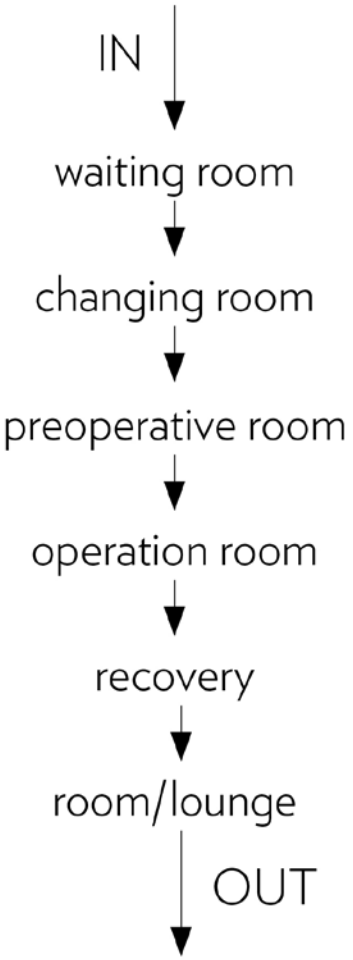
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