



# Nursing work and sensory experiences of hospital design: A before and after qualitative study following a move to all-single room inpatient accommodation



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## ABSTRACT

The embodied experience of nursing practice is rarely studied. Drawing on data from an internationally relevant larger study conducted in 2013–14, here we explore the sensory dimension of the embodied experiences of nursing staff working on two acute NHS hospital wards before and after a move to all-single room inpatient accommodation. We undertook a secondary analysis of 25 interviews with nursing staff (12 before and 13 after the move with half [13/25] using photographs taken by participants) from a mixed-method before-and-after study. This analysis focused on the sensory dimensions of nursing staff's experiences of their working practices and the effect of the built environment upon these. Drawing on Pallasmaa's theoretical insights, we report how the all-single room ward design prioritises 'focused vision' and hinders peripheral perception, whilst the open ward environment is rich in contextual and preconscious information. We suggest all-single room accommodation may offer staff an impoverished experience of caring for patients and of working with each other.

## 1. Background

The importance of 'rediscovering' embodiment in nursing 'if we are to "re-humanize" care and promote and protect high standards of person-centred nursing practice' was recently advocated by Draper (2014, p. 2236), who suggests empirical investigation of embodiment in nursing has remained relatively neglected. The human experience of the built environment is exquisitely embodied and multi-sensorial (Pallasmaa, 2012) but rarely a central concern of nursing and healthcare research. Embodiment is the experience of living through our bodies, conducting our daily business in and through our bodies (Draper, 2014), and thus our bodies are in the margin of all our perceptions (Priest, 2000). The limited examination to date of the physical spaces in which clinical care takes place suggests a potentially rich source of understanding of the links and influences between space and professional practice, including working conditions, interprofessional and professional-patient relationships, and patients' experiences of care (Andrews and Shaw, 2008; Halford and Leonard, 2003; Malone, 2003). Furthermore research evidence suggests positive staff experiences support good patient outcomes (Rafferty et al., 2007) and good

patient experiences of care (Maben et al., 2012a, 2012b).

Internationally the case is being made for more single room accommodation in new hospital designs and some researchers argue for the abolition of all shared accommodation (Pennington and Isles, 2013). Much evidence derives from studies in the USA and Scandinavia (Ulrich et al., 2008; West et al., 2010). Claimed advantages of single room patient accommodation for staff include: potential for more personalised patient contact, potentially fewer interruptions and, with medical storage in rooms and less distraction, a decreased chance of prescribing errors (Ulrich et al., 2008). Disadvantages include increased staff travel distances, the potential need for an increase in staffing levels as a result of more single room occupancy and/or adjustments to staff skill mix (Young and Yarandipour, 2007). Clearly, the situation is complex and trade-offs may be necessary (Stichler, 2001).

We conducted an earlier study which examined the impact on healthcare staff and patients of the built environment before and after the move in terms of patient safety outcomes (on which the new build 100% single room environment had no significant impact), costs, and staff and patient preferences (on balance, patients preferred single

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rooms, staff preferred a mix of single rooms and multi-bedded bays – (Maben et al., 2015a, 2015b). The aim of the secondary analysis of staff interviews from this earlier study, as presented here, is to focus specifically on the sensory dimensions of nursing staff's embodied experiences of working on hospital wards before and after a move from open plan ward arrangements to a new build, all-single room patient accommodation hospital site.

Tunbridge Wells Hospital, where the study took place, was the first district general hospital in England with 100% single room inpatient accommodation (Maben et al., 2015a, 2015b). The planning of such new in-patient accommodation is guided by Health Building Note 4 (HBN 04), which - on the basis of rising patient expectations (particularly in relation to privacy and dignity), movement toward greater patient choice, and the imperative of improving prevention of hospital acquired infections - recommends that a minimum of 50% of in-patient beds should be in single rooms in new hospital builds. At Tunbridge Wells Hospital the 100% single room design was championed by the National Patient Safety Agency (NPSA) on grounds of patient safety, as a means to improve infection control and reduce patient falls, stress caused by noise and sleep deprivation, and length of stay. Single rooms were also seen as means of facilitating improved staff to patient communication, patient confidentiality and privacy, family support, and patient satisfaction. The Trust board approved the 100% single room design primarily with a view to building a patient-centred and safe environment (see also Maben et al., 2012c).

In the book *The eyes of the skin: architecture and the senses*, Finnish architect and theorist Juhana Pallasmaa critiques the hegemony of vision in architecture, explaining how ocularcentrism can lead to forms of the built environment which neglect the integration of all senses in the human experience of space (2012). In the preface to the 2012 edition of his book, Pallasmaa refers to the distinction between 'focused' and 'peripheral' vision:

*The role of peripheral and unfocused vision in our lived experience of the world, as well as in our experience of interiority in the spaces we inhabit, has also evoked my interest. [...] The very essence of the lived experience is moulded by unconscious haptic imagery and unfocused peripheral vision. Focused vision confronts us with the world, whereas peripheral vision envelops us in the flesh of the world. (p.14)*

Pallasmaa (2012, p.14) is concerned with the extent to which architectural theories and practices pay attention to the 'collaboration of the various sensory realms' and the 'preconscious perceptual realm, which is experienced outside the sphere of focused vision' (2012, p. 14). The distinction he operates helps us understand nursing staff's perceptions of the space they work in and the ways in which this space may affect their sensory experiences at work.

Our examination here of nursing staff's experiences of working in a medical admission unit and a general surgical ward before and after the move to all-single room accommodation has two main aims: 1) to explore how ward design affected the sensory dimension of nursing staff's experience of their working practices, and 2) examine the implications of this for staff-patient and staff-staff relationships on the wards. We use Pallasmaa's distinction between 'focused' and 'peripheral' visual perception to draw a parallel with the modes of seeing/being seen and hearing/being heard described by nursing staff in reference to caring for patients in the open-plan and all-single room ward environment. Paying attention to the experiences of seeing and hearing that are made possible, constrained, and/or transformed in/by different ward environments, illuminates the types of interactions that different ward designs make possible and the power dynamics these designs either reinforce or challenge.

## 2. Methods

In our original study (Maben et al., 2015a, 2015b; Simon et al.,

**Table 1**  
Staff interviews pre and post move.

Staff group	Phase	Staff interviews		Total interviews
		(photo elicitation in brackets)		
		AAU	Surgical	
Nurses	Pre	5 (3)	4 (2)	<b>9</b> <b>(5)</b>
	Post	5 (3)	6 (3)	<b>11</b> <b>(6)</b>
Healthcare assistants	Pre	1 (0)	2 (1)	<b>3</b> <b>(1)</b>
	Post	1 (0)	1 (1)	<b>2</b> <b>(1)</b>
<b>Total interviews</b>	<b>All</b>	<b>12</b>	<b>13</b>	<b>25</b>

2016), four case study adult in-patient wards were selected on the basis of variation in patient populations and length of stay (acute assessment unit [AAU]; general surgery; medical [older people]; and maternity). The aim of the our original study was to explore the impact of the move to a newly built acute hospital with all single rooms on care delivery, working practices, staff and patient experience, safety outcomes and costs. We undertook a mixed-methods study to inform a pre-/post-'move' comparison within a single hospital, a quasi-experimental study in two control hospitals and analysis of capital and operational costs associated with single rooms.

For this paper we carried out a secondary analysis of 25 one-to-one interviews (12 before and 13 after the move to 100% single rooms) with nursing staff from two of the original four ward case studies: the Acute Assessment Unit (AAU) and the general surgical ward (see Table 1 for details). As part of the original study these interviews explored staff experiences of working differently/new ways of working, ward layout (including layout of single rooms and en-suites), staff communication and teamwork, and perceptions of patient experience. These two settings were selected because they present similarities as well as differences: both are general units and have comparable patient dependency with high dependency patients requiring frequent monitoring; and both have similar ward design, although the AAU does not have a double handed corridor (with rooms on both sides) (see Fig. 1). However, they differ in terms of patient turnover (which is, at least in principle, faster in the AAU at 48 hours) and organisation and management of work practices, allowing for a wider range of experiences of nursing practice. The other two wards examined in our original study – a postnatal unit and a care of the elderly ward – were excluded as they presented peculiarities in terms of surveillance needs and organisation of work (care of the elderly environments requiring enhanced surveillance and postnatal wards dealing largely with the care of women who are not ill) that might emphasise aspects of working practices which translate less well to other contexts.

For both the AAU and the general surgical ward examined, the old accommodation was open plan with bays (AAU) and Nightingale style wards (large room without subdivisions with 9–12 beds arranged along the sides of the ward) (see Fig. 2 for plans of the wards before the move). Between October 2010 and September 2011, twelve interviews (6 on each ward) were undertaken on these wards before the move; and 13 interviews were undertaken after the move to the new all-single room hospital building (6 on AAU and 7 on the surgical ward) between September 2012 and June 2013. Staff participation was voluntary. Participants were recruited via the ward managers and by the researcher while conducting observation on the wards. Interviews were conducted on the wards in a private room or quiet area, and lasted between 30 and 60 minutes. The study included the use of photography to aid participants' reflection upon and discussion of working practices. Half of participants were asked to take photographs of their work

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