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Design factors related to postpartum environments: Preferences for sense-sensitive spaces

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1. Introduction

Despite recent design improvements following person-centred care in hospital settings and birthing environments (Verderber, 2010; Stichler, 2007), the key elements for a restorative hospital postpartum environment are not known.

Building design can affect psychological-emotional and physiological wellbeing of women who have hospital births (Foureur, et al., 2010). In postpartum spaces women are increasingly faced with noise and multiple disruptions from healthcare providers (Boehm, & Morast, 2009), triggering lack of sleep and rest, due to not having a single room (Eberhard et al., 2000). This situation also contributes in shaping midwifery practice by creating cognitive and emotional responses, for midwives who work in such spaces (Hammond, et al., 2014; Hammond, et al., 2013).

In a different context, combinations of architectural considerations and therapeutic outcomes have been used for what are called sense-sensitive designs in healthcare environments (Mazauch, 2014; Mazauch, 2005). Very little is known about how interior postpartum environments affect women's physical restoration and wellbeing. The pertinent question is how to create a therapeutic postpartum environment for healthy women as increasingly more births occur in hospitals.

2. Research methodology

An on-line questionnaire surveys using Qualtrics (2017) was started from October to November 2017 to determine the specific physical restorative factors for postpartum spaces in New Zealand hospitals. 229 postpartum women and 58 midwives participated in the surveys.
Survey questions covered interior features and sensory comfort as shown in Tables 1 and 2.

3. Results and Discussions

An association of postpartum recovery and wellbeing was found with interior features and sensory comfort for the postpartum space design. Room restfulness, equal variances not assumed t (59.905) =1.43, p = 0.158; Natural daylighting, t (248) =.259, p =.796; Air quality and room freshness, t (241) = 0.44, p = 0.660; Hygiene/clean environment, t (241) = 0.26, p =0.796
There was a statistically significance difference in the opinion on privacy and noise control between women and midwives; Privacy: t (244) = 3.30, p < .001; Noise control: t (241) = 3.88, p <.001 (see Figures 1 to 6).

Table 1: Means and Standard Deviations of Preference Ratings for Interior Features

	Women		Midwives		
Category	Mean	SD	Mean	SD	*P*
Interior features					
A restful room is important to my birth recovery	4.88	0.38	4.77	0.52	.158
Appreciate a room daylighting can enter	4.50	0.62	4.52	0.58	.796
Be in a room where the door is closed for privacy	4.46	0.85	4. 00	0.97	.001

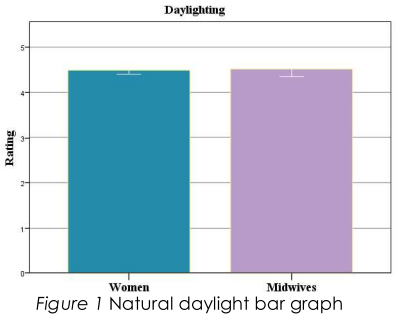

Figure 1 Natural daylight bar graph (with 95% CIs)

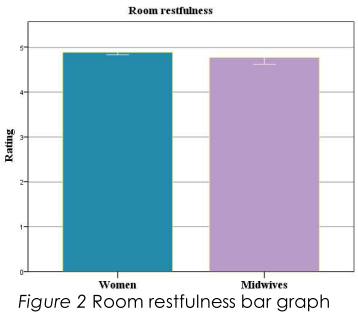

Figure 2 Room restfulness bar graph (with 95% CIs)

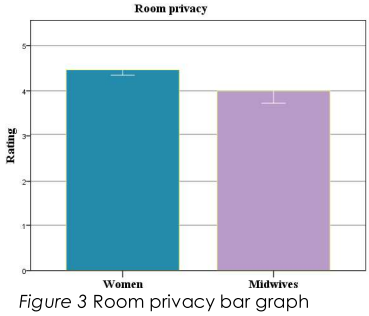

Figure 3 Room privacy bar graph (with 95% CIs)

Table 2: Means and Standard Deviations of Preference Ratings for Sensory Comfort Features

	Women		Midwives		
Category	Mean	SD	Mean	SD	*P*
Sensory comfort					
Air quality and room freshness	4.72	0.53	4.68	0.59	.660
Hygiene/clean environment	4.91	0.34	4.89	0.38	.796
Noise control from equipment	4.06	1.03	4.66	0.48	.001

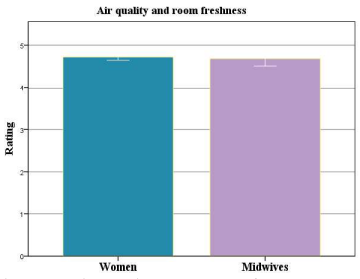

Figure 4 Air quality and room freshness

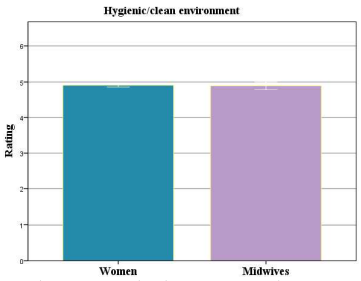

Figure 5 Hygienic/clean environment

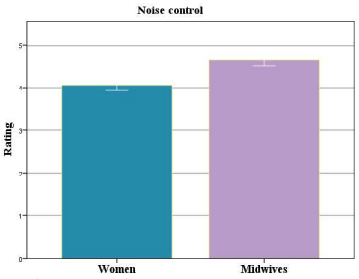

Figure 6 Noise control

4. Implications for Design and Neuroscience

The interior postpartum environment plays a pivotal role for the recovery process. Creating an indoor environment in which women and their caregivers can feel comfortable is vital in the postpartum environment. Daylighting in the interior environment is an important element, while a noise-free environment can foster good recovery. Developing restorative interior environment strategies that will address the noisiness and unconducive postpartum hospital environment will require an evidence-based design solution towards a wholistic improvement for both women and their caregivers.

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