

Afgestudeerd



FYSIEK

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Project: Sound Cultures of Critical Care: how design could tune sound-related practices of intensive care nurses
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Introduction

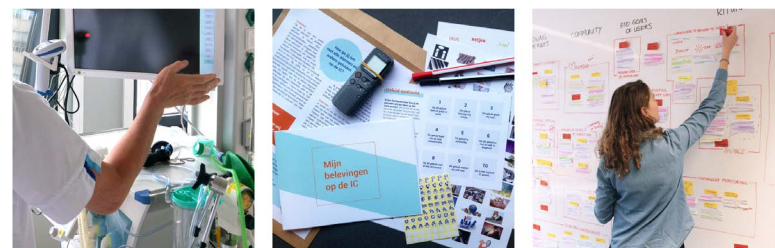
At the intensive care unit (ICU) patients are monitored and supported by medical equipment as well as by a team of intensivists, nurses and other medical staff members 24/7. Due to the audible alarms of the devices, but also because of conversations of people and other machinery and incidental sounds, the ICU transformed into an acoustically hostile environment (Redert, 2018). As a consequence, clinicians become less sensitive to the alarms (called 'alarm fatigue') and do not act upon them (Kristensen et al., 2016). Additionally, patients' sleep patterns are disturbed or may even have a delirium. So, ironically, the ICU's excessive amount of sounds threatens both patient safety and clinicians' wellbeing and work efficiency.

Assignment & Method

Though sound issues in the ICU are a universal problem, little is known about how different ICUs and the people being present deal with all the sounds and what can be done with that. Therefore, the first aim of this graduation project was to capture the sound-related values and practices of ICU nurses' (regarded as the backbones of the ICU) and understand the phenomenon of sound in a sociocultural context; the so-called 'ICU sound culture' (Sanders & Stappers, 2012). This aim was addressed in a field research study (Figure 1): during an on-the-wall-analysis (with qualitative data collected through observing six different ICUs and interviewing a varied selection of nine ICU nurses) I developed an understanding of the existing ICU sound cultures. In the second phase of the project, I looked for design solutions in order to quiet down the ICU whilst taking into account the sound cultures that I found.

Results

After the on-the-wall-analysis, I discovered that all the observed and interviewed nursing teams consisted of three nurse types, which I translated into 'personas' (Figure 2). Generally speaking, each nurse type has a certain way of coping with and acting upon the sounds, depending, for example, on his or her sensitivity to sounds, working experience or role in the team.



OBSERVING

SENSITISING & INTERVIEWING

DATA ANALYSIS



Figure 1: Field research study: Steps taken to get to know the ICU nurses and the ICU sound culture via observing, sensitising and interviewing nurses who were the centre of attention.

Though different sound cultures and coping strategies with the sounds exist, I found a commonality regarding the excessive amount of sounds in an ICU: in all ICUs, the sounds (or even issues with them) are accepted to a greater or lesser extent due to nurses not knowing why (by being ignorant or indifferent) or not knowing

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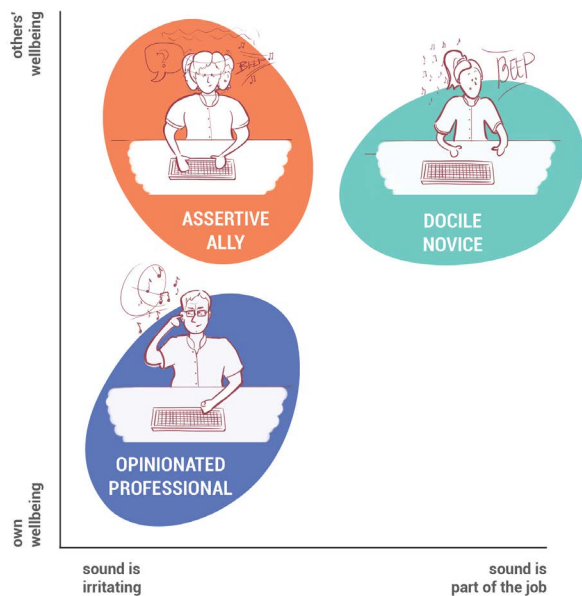


Figure 2: Visualisation of the segmentation among the nursing team and how nurses experience the sounds. The segmentation is led by two driving forces: the nurses' orientation of wellbeing (vertical axis) and their sensitivity to sounds (horizontal axis).

how to reduce sounds (which is specific to each type). Additionally, the existing sound-reducing efforts are often taken individually, ad-hoc and these have a short-term impact. When ICUs want to reduce sounds with a long-term impact, the nurses should become aware of the (issues with the) excessive and irrelevant sounds and be motivated to act accordingly. To do so, I iteratively developed a campaign consisting of three tools that challenges the ICU management team and nurses to establish a 'collectivistic sound culture', in which every individual nurse commits to the group effort and goal to create a more peaceful ICU sound environment (see Figure 3 for one of the tools).

Conclusion

This project provided a good basis for understanding the ICU sound cultures and nurses, and how this understanding could help in looking for opportunities for quieting down the ICU. However, the understanding of the ICU (sound) culture not only forms inspirational means for tackling the sound issues, but also for other

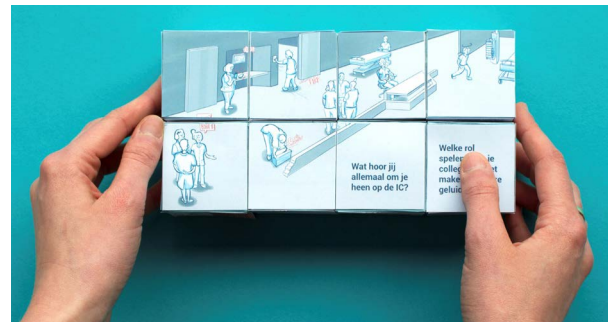


Figure 3: The magical cube that makes the nurses aware of the sound problem through a step-by-step story by folding the little cubes in a particular way. This side lets the user reflect upon the current auditory situation and how he or she contributes to that.

organizational or technological changes, either induced by designers, the ICU management team or nurses themselves.

Reflection

During the field research study and design phase, I took a cultural-conscious approach (Van Boeijen, 2011). Van Boeijen's (2011) and Hao's (2017) playful tools helped me to immerse myself in a cultural context and to approach matters more from a 'group perspective' instead of from an individual one. Doing so, gave me a good understanding of how people's behaviour is highly shaped by the beliefs and needs of other people around them and the physical world in which they interact.

References

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