



Review

The role of noise in clinical environments with particular reference to mental health care: A narrative review



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ARTICLE INFO

Article history:

Received 6 October 2014

Received in revised form 13 April 2015

Accepted 28 April 2015

Keywords:

Noise

Soundscape

Mental health

Acoustic community

ABSTRACT

Background: There is a large literature suggesting that noise can be detrimental to health and numerous policy documents have promoted noise abatement in clinical settings.

Objectives: This paper documents the role of noise in clinical environments and its deleterious effects with a particular focus on mental health care. Our intention however, is to go beyond the notion that noise is simply undesirable and examine the extent to which researchers have explored the meaning of sound in hospital settings and identify new opportunities for research and practice.

Data sources and review methods: This is a narrative review which has grouped the literature and issues in the field into themes concerning the general issues of noise in health care; sleep noise and hospital environments; noise in intensive care units; implications for service users and staff; and suggestions for new ways of conceptualising and researching clinical soundscapes. Data sources comprised relevant UK policy documents and the results of a literature search of Pubmed, Scopus and Web of Knowledge using terms such as noise, health, hospital, soundscape and relevant additional terms derived from the papers retrieved. In addition the references of retrieved articles were scanned for additional relevant material and historical items significant in shaping the field.

Results: Excess unwanted noise can clearly be detrimental to health and impede recovery, and this is clearly recognised by policymakers especially in the UK context. We use the literature surveyed to argue that it is important also to see the noise in clinical environments in terms of the meaning it conveys and rather than merely containing unwanted sound, clinical environments have a 'soundscape'. This comprises noises which convey meaning, for example about the activities of other people, the rhythms of the day and the nature of the auditory community of the hospital. Unwanted sound may have unwanted effects, especially on those who are most vulnerable, yet this does not necessarily mean that silence is the better option. Therefore it is our contention that it is important to begin thinking about the social functions of sound in the mental health environment.

Conclusions: Whilst it can be stressful, sound can also be soothing, reassuring and a rich source of information about the environment as well. It may be used to secure a degree of

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privacy for oneself, to exclude others or as a source of solidarity among friends and colleagues. The challenge then is to understand the work that sound does in its ecological context in health care settings.

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What is already known about the topic?

- Noise in clinical settings has been noted to have a variety of undesirable effects, such as elevating stress, disturbing sleep and impeding recovery.

What this paper adds

- In this review paper we extend this analysis to consider other roles sound in clinical settings might fulfil. The clinical environment is best thought of as having a 'soundscape' which conveys a good deal of information about the human world of the hospital. Rather than simply reducing noise, it may also be fruitful to consider how the soundscape may be made legible and intelligible.

1. Introduction and background

In this paper we will explore an important yet frequently neglected aspect of the health care environment. We have termed this the soundscape of health care, a term we have adopted because it connotes more than merely 'noise' but which enables us to consider how the distinctive sounds of health care may not only cause annoyance but also contribute to the social meaning, pattern of life and structures of authority found in health care settings. In other words, the noise, as we shall see, is often patterned and meaningful.

Our particular interest is in mental health care, though in exploring the literature we have drawn on different disciplines such as psychology, built environment studies and sociology as well as nursing. The issue of noise in health care settings has been raised in a variety of settings including intensive care and neonatal care as well as in psychiatry and all these diverse literatures will be drawn upon in the current article.

The situation is particularly in need of attention because hospitals may be getting noisier. For example, [West and Busch-Vishniac \(2005\)](#) report that where hospital noise has been studied, since 1960 the average noise levels in hospitals has increased an average of 0.38 dB per year during daytime hours and 0.42 dB during the night.

In *Healthcare Environment* the [Department of Health \(2007a, p. 33\)](#) states: 'Noise can increase heart rate, blood pressure, respiration rate and even blood cholesterol levels. It can reduce weight gain, disturb sleep patterns and negatively affect hormonal balances... Wounds take longer to heal when patients are exposed to noise for long periods.' Furthermore: 'Noise should be controlled at source. Sources can include telephones, trolleys, interactive toys, alarm panels and monitors. These should be monitored and policies should be in place to turn down tones on phones and nurse call systems at night. Designers

should ensure that patient areas are located away from external sources of noise, such as road traffic. Noisy spaces, such as restaurants and day rooms, should not be located next to quiet spaces, such as bed areas.'

Unwanted sound, or noise, has long been acknowledged by researchers and policy makers to have detrimental effects, but it is only very occasionally that this concern has been translated into investigations of the health care environment. In 1996 the European Commission issued a Green Paper in which it was stated that an estimated 20% of the EU citizens were exposed to noise levels that scientists and health experts considered to be unacceptable, at which most people become annoyed, sleep is disturbed and health may be at risk. In the UK, *The National Service Framework for Mental Health (Department of Health, 1999)* set out the need for improvements in inpatient care, including physical environment. In response, The UK's King's Fund's *Enhancing the Healing Environment (EHE)* Program was launched in 2000 and by the end of 2006, 120 NHS trusts across England had participated, with more than 1200 staff and patients involved in improving their hospital environments ([Department of Health/King's Fund, 2006](#)). However, apart from a brief case example for environmental improvement that refers to noise reduction, the issue of soundscapes in mental health settings is largely unaddressed. The need for this issue to be tackled is implicit in policy guidance, which calls for a code of conduct of service user behaviour to be in place that covers the issue of 'management of noise (TVs, radios, etc.) and how disputes over such matters are to be resolved' ([Department of Health, 2002, p. 13](#)). The [Department of Health's \(2007a\) Healthcare Environment](#), revisits the issues of physical environment, stating: 'Good healthcare environments are key drivers of patient experience. Good environments matter to patients, their visitors and carers and to staff' ([Department of Health, 2007a, p. 3](#)). This document deals in part with the need for privacy, dignity and a healing environment. Under privacy and dignity, it states: 'When we are ill, we want care, rest and comfort in pleasant hospital surroundings and to know that healthcare staff will do all that they can to protect our privacy and dignity.' In the key section on healing environment, it states: 'Good environments have a powerful effect on patients and staff. They can enhance clinical outcomes and patient recovery and improve staff working lives. Careful use of colour, light, texture and sound combine to create a healing environment' ([Department of Health, 2007a, p. 23](#)). Whilst this focus on sound is welcome it is limited to a single dimension of the environment, rather than dealing with the complex matter of managing existing soundscapes in mental health settings. Given a recent emphasis and recognition that '[n]oise can be stressful' and '[r]eduction in noise levels can reduce the risk of violence' ([Department of Health, 2007b](#)),

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