



KEY POINT SUMMARY

OBJECTIVES

The authors reviewed the effect of two dimensions of sound, music and noise, from emotional and functional aspects of dental office design.

The effect of sound in the dental office: Practices and recommendations for quality assurance: A narrative review

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Key Concepts/Context

Research shows that the dental office environment exposes individuals to a high degree of sound during care. Sound can be perceived negatively, called noise, or can be considered positive, such as music therapy. The dental office can be an environment of high anxiety for patients. The use of positive sound may lessen unease during dental visits. Through collected literature, this narrative review suggests that music may improve patient mood while also positively affecting workplace productivity.

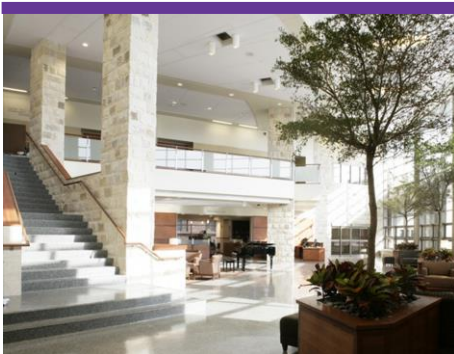
Methods

PubMed and Google Scholar were the databases used for the literature search, employing the following keywords: 'noise,' 'dental office,' 'sound effect,' 'healthcare,' 'healing music,' 'occupational noise,' 'dentistry,' and 'music in healthcare.' Citation searching and organizational searches for literature were also conducted. No inclusion or exclusion criteria for initial screening were described. Articles were excluded, however, on the general basis of being insufficient, irrelevant, or considered ambiguous in their conclusions or data presentation. If the authors deemed the article to be well documented and included scientific references, it was included in the final literature grouping.

Findings

Of the original 261 articles derived using the keywords mentioned, 165 were excluded, resulting in a remaining 96 articles. Of the 96 articles, 45 were performed in hospital settings while 41 were performed in dental settings.

- **Sound Types and Levels in the Dental Office:** Non-dental external sources of noise included traffic and roadwork. Dental sources of noise included phones



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ringing, conversations between patients and staff, the air conditioning unit, computer printers, and television. Articles described the various laws and international standards for decibel thresholds in hospital environments, pivoting these standards to daily exposure of noise in dental offices.

- **Effect of Noise in the Dental Office:** In particular, child and youth describe dental office noise as inducing unpleasant feelings and discomfort, which may cascade to dental anxiety. Staff describe physical effects of high-volume noise exposure, such as tension headaches and lack of concentration.
- **Positive Aspects of Sound in the Dental Office:** Anxiolytic effects of music were noted, supporting ease of concentration and decreasing anxiety. Staff reported higher levels of satisfaction and work enjoyment when music is introduced into the workplace environment.
- **Mechanism of Healing Effect of Sound and Music in the Dental Office:** Creating or listening to music engages regions of the brain which dominate emotion regulation and production of certain hormones that promote healing.
- **Options of Sound Control Design in the Dental Office:** Consider utilization of service corridors with sound isolation walls to distinguish noise-heavy versus noise-reduced areas. Another recommendation is the creation of a stress-free area with soft music from hidden sound sources.

Limitations

This was not a systematic review and was limited to a restricted listing of databases searched. Literature was evaluated for relevance via the authors' experiences and determination of article organization, scientific value, and currency of publication date. Thus, there is low replicability of this literature search and high probability of lack of exhaustive article capture pertaining to this topic. Finally, the authors did not include a description of how the articles were evaluated or how the five topic areas were developed.

Design Implications

To avoid negative environmental noise, it is recommended to implement strategic noise mapping, determining noise exposure, informing the public of harmful levels of noise, and adopting action plans when necessary to reduce noise or protect areas of good environmental noise quality.

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