Sound Personalisation in Counselling: Bridging Creative Sound Design and Mental Health Support

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Abstract

Sound personalisation represents a promising approach in the design of therapeutic environments, particularly in mental health and counselling contexts. This paper proposes a conceptual framework for integrating creative sound design with personalised ambient soundscapes to support emotional regulation, relaxation, and client engagement. Drawing on theories from soundscape ecology, user-centred design, and sound therapy, the paper outlines how personalised sound environments can enhance the counselling experience. Although the deliberate use of sound in therapy is gaining attention, it remains underexplored, particularly in Southeast Asian contexts. Personalised sound interventions offer a non-pharmacological and culturally adaptable means of enriching therapeutic settings, yet they also present challenges in terms of implementation and interdisciplinary collaboration. This paper aims to establish a conceptual foundation for future research and practice in this area. By reviewing key literature and proposing a framework, it seeks to guide the development of tools, environments, and sound-based interventions that support mental well-being through user-responsive audio experiences.

Keywords: ambient sound design, counselling environment, mental health, personalised sound-making, soundscape

Introduction

University students' mental health has become an increasing concern as rates of anxiety, depression, and other challenges continue to rise within this demographic (WHO, 2021). Research indicates that university students in Malaysia face significantly higher levels of depression, anxiety, and stress compared to their peers in other countries, such as the UK (Kotera et al., 2020). These issues are compounded by the transition from high school to university and academic pressures, which can negatively impact academic performance when stress and anxiety are excessive (Li et al., 2023). Despite the critical role of university counselling centres in supporting student well-being, many students do not seek professional help, highlighting the need for accessible, effective mental health interventions (Lawrence et al., 2016).

In Malaysia, initiatives like the National Strategic Mental Health Action Plan and the National Counselling Policy (2023) reflect a growing commitment to improving student mental health services. The former Director General of Health emphasized the importance of integrating art and hospitality into healing environments, a principle that can be extended to the design of counselling rooms.

The sensory and physical environment of counselling rooms is increasingly recognized for its potential to enhance therapeutic experiences. Specifically, ambient sound has been shown to promote relaxation, reduce stress, and improve overall well-being (Giordano, 2022; Sereda et al., 2018). While soundscapes have been utilized in medical and commercial settings, their deliberate application in counselling environments remains underexplored (Munro & Searchfield, 2019; Hargreaves & Krause, 2016; Krause & Hewitt, 2014). Early studies (Prueter & Mezzano, 1973, 1974; Hilton Devlin, 1987; Ortiz & Johnson, 1991) examined the effects of background music in counselling but did not address the use of nature sounds or the personalization of soundscapes through user-centred approaches.

Recent studies on nature-based solutions (NBS) and biophilic design highlight the benefits of integrating natural sensory cues such as sounds of water or birdsong into educational and therapeutic environments to promote emotional restoration (Spano et al., 2021; Boyd, 2022). In this context, personalised ambient sound design can be viewed as a digital extension of these principles, supporting relaxation and enhancing focus within enclosed spaces like counselling rooms. This paper aims to introduce and contextualise the concept of "sound personalisation" as an innovative design strategy for therapeutic environments. Rather than reporting empirical findings, this proceeding presents a conceptual foundation grounded in interdisciplinary literature, laying the groundwork for future implementation.

Theoretical Foundation

Sound and Emotion Regulation

Sound stimuli influence physiological and emotional responses, with ambient sounds shown to reduce anxiety, lower heart rate, and support emotional grounding (Sereda et al., 2018; Alvarsson et al., 2010). Nature-based sounds and slow-tempo ambient music can create calming atmospheres, supporting clients who experience stress, agitation, or emotional fatigue. The genre of ambient music, as shaped by artists like Brian Eno, was designed to be both ignorable and engaging, creating a meditative state conducive to stillness and reflection (Till, 2017). Empirical studies have also shown that exposure to nature-based sound therapy can significantly lower stress levels and improve physiological markers in clinical settings (Fatehimoghadam et al., 2023)

Soundscapes and Environment Design

The concept of the "soundscape," introduced by Schafer (1977) and expanded by Truax (2001), emphasizes how everyday environmental sounds affect perception and well-being. In therapeutic spaces, controlling auditory input can help create an

immersive, intentional atmosphere that supports communication and emotional presence. Biophilic design literature supports incorporating such auditory elements into indoor environments to mimic the restorative effects of nature (Peters & D'Penna, 2020).

Personalisation in Sound Design

User-centered sound design allows individuals to modify auditory environments based on their emotional needs. Personalisation increases agency, comfort, and relevance (North et al., 2016). Unlike generic background music, personalised soundscapes can align with therapeutic goals, adapting to specific client responses and session dynamics. This concept aligns with broader campus and mental health strategies that promote autonomy and sensory connection through environmental control (DeLauer et al., 2022).

Conceptual Framework

This paper proposes a conceptual framework consisting of two integrated models: (1) the research design framework and (2) the design pillar model for personalised ambient sound in therapeutic settings.

Research Framework

The research framework considers:

i. Independent Variable: Ambient sound elements (natural, instrumental, layered)
ii. Moderating Variables: User preferences, interface design, emotional state
iii. Dependent Variables: User relaxation, emotional engagement, counselling atmosphere
iv. Design Approach: User-centred design principles
v. Contextual Setting: University counselling rooms, mental health support services

Design Framework: The Four Pillars

The following four pillars inform the conceptual design of personalised sound environments in counselling:

i. Simplicity: The system should be intuitive and non-intrusive, minimizing distractions for both client and therapist.
ii. Personalisation: Users must be able to curate, layer, and adjust sound elements to suit emotional and contextual needs.
iii. Therapeutic Relevance: Sounds must support emotional regulation and avoid content that disrupts the therapeutic atmosphere.
iv. Adaptability: The sound system should work across various therapeutic contexts and user demographics.

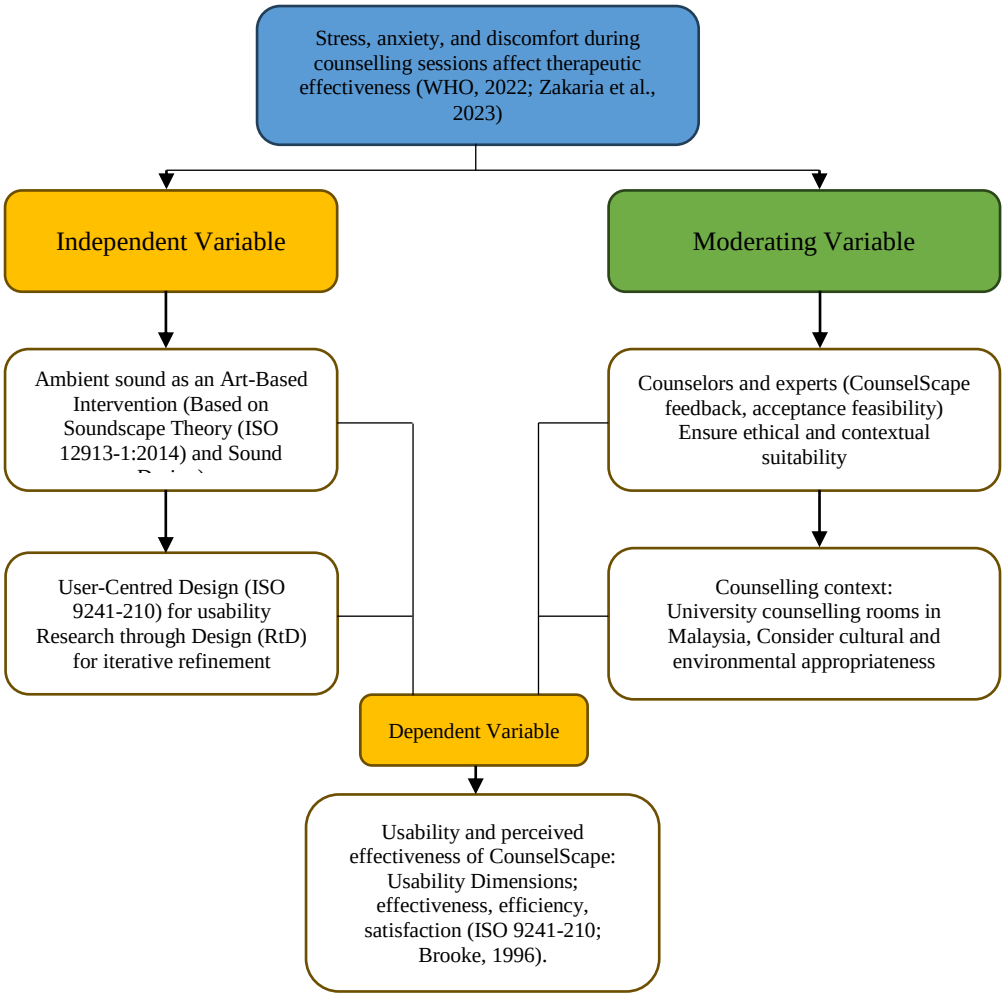

Figure 1. The Conceptual Framework for Personalisation in Therapeutic Settings

Figure 1 Conceptual Framework for Sound Personalisation in Therapeutic Settings. The model outlines four key design pillars: Simplicity, Personalisation, Therapeutic Relevance, and Adaptability. These elements guide the implementation of ambient sound systems in mental health contexts. These principles guide the development of digital tools, physical installations, or hybrid approaches in counselling spaces.

Applications and Implications

The framework can inform the design of mobile apps, interactive sound installations, and counselling room enhancements. For example, an app allowing therapists to curate ambient soundscapes can offer an alternative to commercial platforms like YouTube or Spotify, which may include ads or unrelated content. Sound personalisation offers a non-pharmacological, culturally adaptable tool that

supports diverse therapeutic practices. Its implementation calls for interdisciplinary collaboration between sound designers, therapists, mental health researchers, and software developers. Integrating ambient sound in university and residential settings may also support broader institutional efforts to create biophilic and restorative spaces that address student mental health needs (Boyd, 2022; Spano et al., 2021). Given that the therapeutic relationship (rapport between therapist and client) is strongly predictive of treatment outcomes (Opland & Torrico, 2024), the ability to personalise soundscapes may strengthen client comfort, trust, and session engagement in counselling contexts.

Conclusion

Sound personalisation represents a promising direction in the integration of creative sound design with mental health support. This conceptual framework outlines essential design considerations for developing responsive, meaningful, and user-centered sound environments in therapy. Future work should include pilot testing, participatory design, and cross-disciplinary validation to refine practical applications.

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