

Sound of Care: A Body-Centred Perspective to Chronic Pain Self-Management Using Generative Sonification

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Abstract— We present the concept and framework of *Sound of Care*, a novel eHealth solution for chronic primary pain. We introduce early ideas and results, and show an innovative perspectives on the use of sound and sonification for real time chronic pain self-management.

Index Terms— Chronic Primary Pain, Sonification, Generative AI, Music Therapy, Soma Design

I. WHAT IS *Sound of Care*?

Sound of Care aims to address the real-time emotional dimensions of chronic primary pain (CPP) by using physiological signals to generate personalised music. CPP comprises various pain syndromes, considered as independent health conditions. CPP is particularly influenced by psychosocial determinants and procedural interventions have demonstrated limited efficacy.

II. THE DIGITAL PAIN COMPANION

Our interface moves toward the concept of Digital Pain Companion (DPC) [1]. In digital health, the relationship between the individual and technology is often perceived in a vertical dimension, where either the machine controls the human or vice versa. In contrast, the DPC aims to foster a horizontal relationship, a dialogue between trusted peers. The DPC operates within a co-operative care environment, a space where all the actors in the care process collaborate to a shared decision-making space for treatment and care. This approach allow them to facilitate and help each other, increasing the individual's agency over treatment.

III. A BODY-FIRST APPROACH TO SOUND GENERATION FOR SELF-MANAGEMENT THERAPY

Sound and music present the opportunity to be applied with a different perspective, looking for a connection with CBT-based self-management strategies [2]. We should not look for a direct correlation between sound and our psychosomatic experience, only targeted at eliciting a disembodied

effect on the listener with the risk of itemising sound and depriving the listener of ownership over their condition. Relying solely on automated monitoring also risks to result in a lower sense of ownership and control over treatment. Adding a direct, embodied physical interface can mitigate this issue by allowing the person to directly communicate their perception using their body.

IV. A GENERATIVE SONIFICATION FRAMEWORK

AI can serve a pivotal role, given its ability to adapt and directly generate tailor-made content. It can act as a bridge between the Human and the Computer, fostering a dynamic environment that safeguards the ongoing dialogue among the elements of care, therapy, and personal experience. Sonification, an already successful strategy in supporting chronic pain self-management [3], can function as both an expressive and therapeutic instrument. This will enable the person to listen to their own bodily sensations and self-management journey, while supporting this very same experience with tailored sounds aimed at empowering the individual, actively listening and responding to everyday needs and emotions.

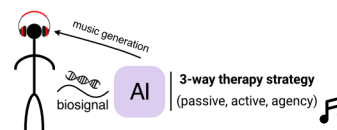


Figure 1: Exemplified diagram of the *Sound of Care* music generation framework

V. REFERENCES

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