Chapter 10
Personalized Therapeutic Music:
Artificial Intelligence at the Intersection of Femtech and Mental Wellbeing

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ABSTRACT

This study investigates the role of artificial intelligence–driven music interventions within femtech platforms and their impact on mental wellbeing outcomes. Using a quantitative, cross-sectional design, data were collected from 157 women aged 18–55 with prior exposure to AI or app-mediated music applications. A structured

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questionnaire measured five independent variables—AI music personalization, delivery platform, biometric integration, listening duration/frequency, and music modality—against the dependent construct of mental wellbeing. Multiple regression analysis revealed that biometric integration was the strongest predictor, followed by delivery platform and modality, while personalization and duration contributed modest yet significant effects. The model accounted for 66.2% of the variance in wellbeing outcomes, with diagnostic checks confirming validity through acceptable VIF values, Durbin–Watson test results, and residual normality.

INTRODUCTION

In the contemporary epoch of technological acceleration, the conflation of artificial intelligence (AI) with the most intimate facets of human existence has generated unprecedented modalities for enhancing psychosomatic health and subjective wellbeing. Among these emergent domains, the intersection of algorithmically generated music and the rapidly proliferating sector of femtech occupies a particularly provocative niche, suggesting an epistemological reconfiguration of how sound, cognition, and embodied female experiences might coalesce within a digitally mediated therapeutic framework (Ansari & Mainard, 2023). Whereas music has, since antiquity, functioned as both an aesthetic artifact and a curative practice, oscillating between ritualistic invocation, affective regulation, and psychosocial cohesion, its algorithmic reconstitution through AI systems inaugurates novel avenues for personalization that transcend the traditional strictures of compositional authorship (Chakrabarty et al., 2023). In particular, when tethered to the biotechnological innovations of femtech, an umbrella term encompassing digital health technologies specifically designed to address the physiologic, reproductive, and psychological dimensions of women's health, AI-driven music production portends a radical recalibration of both mental health interventions and the commodification of female-oriented wellness (Amaro et al., 2023).

The advent of AI-generated soundscapes signifies more than a technological curiosity; it constitutes an ontological shift in how we conceptualize therapeutic stimuli. Machine learning algorithms are now capable of constructing auditory environments dynamically responsive to biometric fluctuations, emotional valences, and contextual preferences, thereby enabling a form of hyper-personalized sonification that is neither static nor universal but rather incessantly adaptive (Zamanifar & Faezipour, 2025). Such capabilities resonate with the ethos of femtech, which predicates its interventions on the principle of individuation: acknowledging the heterogeneity of female bodies, cycles, and affective rhythms rather than subsuming them under androcentric medical paradigms. By embedding AI-generated music within femtech