



**PhD student:**

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**Research project:**

Telerehabilitation smoking cessation program assisted by wearable remote monitoring devices (smartwatch type) for improving oral, general health, and quality of life of frail patients

**Abstract:**

Tobacco use remains a leading modifiable risk factor for non-communicable diseases, including cardiovascular, pulmonary, oncological, and oral pathologies. Traditional smoking cessation services often face challenges related to cost, accessibility, and patient adherence. This PhD project investigates the effectiveness of an innovative telemedicine-based smoking cessation program using wearable remote monitoring devices (e.g., smartwatches) among frail patients. The study adopts a randomized, controlled, monocentric design involving 100 smokers, divided into a telerehabilitation intervention group and two conventional rehabilitation control groups (behavioral only vs. behavioral plus pharmacological). Participants in the intervention group will follow a 12-month, personalized, multimodal program that includes behavioral-psychological support and real-time remote monitoring of smoking gestures, cardiovascular, pulmonary, and oral parameters through integrated digital platforms. The study aims to evaluate the impact of smoking cessation on systemic and oral health, quality of life, and patient satisfaction, comparing in-person and digital care pathways. Expected outcomes include improved smoking cessation rates, better cardiovascular and periodontal health, enhanced quality of life, and increased patient adherence and satisfaction in the telerehabilitation group. This research will offer evidence on the usability and effectiveness of integrated e-health technologies and promote a multidisciplinary, patient-centered model for managing tobacco dependence. Results will contribute to the development of scalable, low-cost, and personalized interventions to support public health strategies in tobacco control, especially for vulnerable populations.