


Chapter 6


The Role of Tele–Health Approaches in Home Nutrition Support

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ABSTRACT

The integration of digital technologies into healthcare has transformed home-based nutrition support. Tele-health, especially tele-nutrition, has become essential for delivering personalised dietary counselling and monitoring by overcoming geographical and logistical barriers. This chapter examines the development and implementation of tele-nutrition, particularly in home enteral nutrition (HEN) and chronic disease contexts. Drawing on current evidence, it discusses how mobile applications, wearable technologies, AI-based systems, and hybrid care models improve clinical outcomes, patient engagement, and continuity of care. The chapter also addresses barriers such as limited digital literacy, regulatory inconsistencies, and social inequalities, alongside ethical concerns like informed consent and algorithmic transparency. Policy implications are analysed in relation to reimbursement systems, licensure frameworks, and the legal responsibilities of clinicians. The chapter concludes with strategic recommendations for integrating tele-nutrition into public health infrastructures and outlines research priorities focused on long-term effectiveness, patient-reported outcomes, and inclusive design. By synthesizing multidisciplinary

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evidence, this chapter provides a comprehensive roadmap for the sustainable integration of tele-health in home-based nutrition support, reinforcing its relevance in achieving equitable, person-centred, and technology-enabled dietary care.

1. INTRODUCTION

The digital health transformation has created a significant change in the delivery of healthcare services in recent years, and this transformation has required the integration of telehealth applications in specific areas such as nutritional support. Telehealth is a method of delivering healthcare services remotely, which has been critical, for example, in pandemics such as COVID-19 or similar situations (Mundi et al., 2021; Mulherin et al., 2020). Telehealth applications can reach more individuals and improve health outcomes by overcoming access barriers (Nelson et al., 2017).

Telehealth applications provide many advantages for individuals who need to receive nutritional support. In particular, patients who need home nutrition support (home enteral nutrition-HEN) can overcome the difficulties they face in traditional face-to-face examinations through telehealth applications. Ma et al. (2025) found that patients receiving enteral nutrition support at home have a high level of acceptance of telehealth applications. In addition, mobile telehealth applications have emerged as an important tool to increase health literacy during nutrition counselling (Bahshur et al., 2020).

Telehealth tools provide great benefits, especially for individuals suffering from chronic diseases. Nelson et al. (2017) present supporting data; research shows that telehealth applications can reach many patients at the same time and provide access to healthcare services. For example, during COVID-19, many people had difficulty accessing healthcare services due to social distancing; however, telehealth minimised these difficulties and enabled patients to receive the nutritional support they needed (Ma et al., 2025).

Customised nutritional support provided by telehealth applications helps individuals to feel better as it adopts a patient-oriented approach. In the study by Nelson et al. (2017), it is associated with the results that individuals receiving home parenteral nutrition (HPN) have high levels of satisfaction with the support provided through telehealth and feel better emotionally. Such support not only provides information about nutrition, but also strengthens the emotional connection between patients and caregivers (Mulherin et al., 2020).

Social support provided by telehealth applications is important in the care of individuals with chronic diseases. The applications allow patients to reduce the stress in their daily lives and receive emotional support (Persoon et al., 2005). This is especially critical for patients who follow dietary methods such as HPN, as these

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