Chapter 1

Implementation of a Visual Telerehabilitation Protocol During the COVID-19 Pandemic:
Patient Outcomes in an Italian Case Study

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ABSTRACT

In March 2020, the Italian Government declared a state of lockdown to curb the spread of the COVID-19 pandemic. This led to many challenges in the provision of rehabilitation services to people with disabilities. Consequently, there was a transition to the telematic provision of healthcare as an adaptive approach to the constraints posed by the pandemic. In the visual rehabilitation field, the lack of international

guidelines for telematic rehabilitation led to pioneering interventions, which were challenged by difficulties in the use of technological devices by visually impaired individuals. The purpose of this chapter is to identify the peculiar features that could enable the provision of visual telerehabilitation during the pandemic by analyzing the procedures followed in the implementation of a visual telerehabilitation protocol in Italy and the outcomes thereof.

INTRODUCTION

An international report on visual impairment prevalence (Bourne et al., 2020) shows that in 2020 49.1 million people all over the world were blind, 33.6 million people presented a severe visual impairment (VI), and 221.4 million people presented a moderate visual (VI) impairment. The prevalence of blind people increased by 42.8% from 1990 (34.4 million) to 2020 (49.1 million) (Bourne et al., 2020). Globally, the main causes for blindness and visual impairment are cataract, uncorrected refractive error, glaucoma, age-related macular degeneration, corneal opacity, trachoma, diabetic retinopathy (Ackland et al., 2017). Specifically, among the worldwide population, a significant increase in blindness percentage has risen between 2015 and 2020: 38.5 million individuals have acquired blindness from a previous cataract (from 13 million to 70 million), 13 million from uncorrected refractive error (2 million to 16 million), and 3 million from glaucoma (4 million to 11 million) (Flaxman et al., 2017).

In this field, rehabilitation protocols are addressed at preventing patients' vision loss and at supporting their autonomy and psychosocial wellbeing (Bittner et al., 2020). The spectrum of visual rehabilitation includes protocols to strengthening individual adaptive synaptic responses in terms of cortical plasticity (Karmarkar & Dan, 2006; Trauzettel-Klosinski, 2011) through training visual attention (Pilz et al., 2006), compensatory eye movements (White & Bedell, 1990), and eccentric fixation (Nilsson et al., 2003). Visual rehabilitation is a powerful tool to advocate for people with visual impairment social inclusion and autonomy (Shadrick, 2020), even during the Covid-19 pandemic and related socio-behavioral restrictions.

From March 2020, the healthcare system was globally challenged by the Covid-19 crisis to continue to provide rehabilitation for individuals with disabilities, notwithstanding lockdown and restrictive measures (Martinez et al., 2020). Professionals from many different rehabilitation areas and across different diagnoses needed to adapt their rehabilitation protocols to the telematic environment (Das & Christy, 2021; Salgueiro et al. 2021; Varela-Aldás et al., 2021). In the visual rehabilitation field, this was particularly challenging given the lack of international guidelines and the difficulties in the use of technology and digital devices by visually impaired or blind individuals (Murphy et al., 2008; Saltes, 2018; Senjam et al., 2021).

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