

COVID-19 Teleassistance and Teleconsultation: a matched case-control study (MIRATO project, Lombardy, Italy)

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ABSTRACT

Background. Lombardy was one of the regions in Europe most hit by the COVID-19 pandemic. The MIRATO project was a 3-month multicenter Home-Based Teleassistance and Teleconsultation (HBTT) program conducted between July 2020 and January 2022 to support COVID-19 patients in Lombardy after discharge from the hospital. The primary aim of this study was to compare the incidence of severe events (hospital admissions and mortality) in the 3 months after discharge between HBTT patients and usual care (non-HBTT) patients. Further, in the HBTT group, we analyzed clinical data, instrumental assessments used, and patients' satisfaction with the program (e.g., changes in patients' symptoms and quality of life (SF-12)).

Methods. Four hospitals in Lombardy enrolled patients in the HBTT group while three other hospitals collected data on non-HBTT patients who were matched with the HBTT group for sex, age, presence of COVID-19 pneumonia and number of comorbidities.

Results. Four hundred twenty-two patients per group were identified for comparison. The median age in both groups was 70 ± 11 years (62% males). One or more comorbidities were present in 86% of the HBTT and 89% of the non-HBTT group ($p=ns$). The total number of severe events occurring in the two groups was 17 (14 hospitalizations and 3 deaths) in the HBTT group and 40 (26 hospitalizations and 16 deaths) in the non-HBTT group ($p=0.0007$). The risk of hospital readmission or death 3 months after hospital discharge was significantly lower in HBTT patients (Log-rank Test $P=0.0002$). In the HBTT group, during the 3-month follow-up, in the HBTT group, a total of 5355 teleassistance contacts (13 ± 4 per patient) were performed. The number of patients with one or more symptoms declined significantly: from 338 (78%) to 183 (45%) ($p<0.00001$). Both the physical ($\Delta PCS12: 5.9\pm 11.4$) component and the mental ($\Delta MCS12: 4.4\pm 12.7$) component of SF-12 improved significantly ($p<0.0001$). Patient satisfaction with the program was very high in all participants.

Conclusions. When compared to usual care, an HBTT program can reduce, at 3 months from discharge, severe events (hospital admissions/mortality) improving symptoms and quality of life.