



Telemedicine in COVID-19 pandemic: presentation of the special series

We have witnessed and are witnessing a shocking development of digital technologies due to the COVID-19 pandemic and a large increase in its use starting from the world of consumption to that of health. The citizen of every place has been called to face important sacrifices, isolation and social distancing have been imposed on them and digital technologies have represented a valid support both for the continuation of everyday life, through e-banking, smart working and e-learning both for the continuity of therapies and treatments through eHealth and mHealth on which telemedicine is based.

For telemedicine it was an opportunity to come out and demonstrate its potential. In fact, in applications it was often relegated to minor roles linked to research projects and discontinuous employment. Thanks to incisive actions by many governments, strong initiatives have been taken for the development of this sector and to enhance its use, and long-standing problems have been addressed, from regulatory and legal ones to those of reimbursement of the service, also using exceptions where necessary. However, this boom was not homogeneous, at least at the beginning, but it was patchy, however, with the passage of time and the continuation of the emergency in many countries important initiatives have been taken to facilitate effective use.

The first contribution entitled “Telemedicine in COVID-19 pandemic: a truly exceptional development?” (1) gives the example of the use of telemedicine in Italy during the pandemic; after an initial disorientation, many initiatives have been taken by stakeholders and actors in general and telemedicine has begun to run in.

In this period, mobile technology has had a frontline role for communication between individuals and indirectly as a psychological support (limiting the psychological problems as anxiety and depression caused by the loneliness) and has been the engine in mHealth for the consolidation of apps for remote care (for example for self-therapy, monitoring and therapy) and for the development of new apps for pandemic monitoring and control through the so-called digital contact tracing.

The second contribution “The mobile-born and the COVID-19 pandemic: opportunities, problems and the role of the telemedicine and e-health” (2) focuses on mobile-born, particularly accustomed to the use of mobile technology and questions how he or she has dealt with the pandemic due to its familiarity with technology and the related emerging problems due to possible abuse of technology and potential solutions in this period

The third contribution “A map point on the role of the telemedicine and e-Health in the digital contact tracing during the COVID-19 pandemic” (3) focuses on a new potential of mHealth of this period, the digital contact tracing, discusses its functionalities, the technological aspects, the different speeds of development at an international level and any limits of use found.

Surely mHealth has represented an important potential also with regard to the possibility of providing training courses at a distance, not in person. In fact, in all countries, during the pandemic, important government initiatives have been witnessed and are being witnessed, which have forced the transition of teaching from distance learning and/or hybrid types to distance and face-to-face teaching. University training courses focused on health issues have had to face important critical issues due to this change. In particular, the critical issues related to important aspects such as those relating to the setting up of internship activities which are generally fundamental, but are even more so as regards health professionals and doctors who have to do with the issue of health. The contribution “WhatsApp in mHealth: an e-learning tool in the COVID-19 era to share dynamic images in hemodynamics” (4) presents an opportunity for mHealth in the exchange of imaging in hemodynamics and discusses its possible introduction in distance learning with e-learning methods through the use of a specific survey. mHealth, as we have anticipated, has had and continues to play an important role in providing apps for medical use for self-monitoring, for remote therapy, for fitness, for wellness and for many other types of medical support.

The limitation of movement and the closure of gyms and the inability to access centers for motor rehabilitation has in general made us look more carefully towards the use of these apps and for example to perform gymnastics and also towards wearable sensor systems in able to give an indication of the degree of physical activity performed (metabolic consumption, number of steps, etc.). Two contributions specifically address this issue.

A first contribution “Step-counters for clinical use in mHealth at the time of the COVID-19 pandemic: the recovery of

pre-smartphone experience” (5) reports two wearable pedometer systems for clinical use developed in the pre-smartphone era and discusses their perspectives and potentialities in the pandemic period. The first is based on the use of a sensor that monitors the gait by measuring the expansion of the gastrocnemius; the second is an integrated pedometer on a very common orthosis (Codivilla spring) used as a support for walking in many disabilities. A second contribution “A survey based investigation into the figure of the digital physiotherapist in the COVID-19 era” (6) focuses critically on these apps and highlights in the first place the risk of a do-it-yourself use of rehabilitation and/or gymnastics carried out at a distance without adequate support from a wise and specifically formed guide; subsequently, this contribution addresses what should be the leading figure for home motion rehabilitation in the COVID-19 era and once this figure has been identified in the augmented physiotherapist, it launches a survey among the workers in the sector and presents and discusses the results. The special series closes by addressing in an indirect way the problems connected to the health of a way of working that has had a boom in this period: the smart working or otherwise called agile work and it does so through the seventh contribution entitled “An investigation into the smart working in the COVID-19 era: proposal of an electronic survey to examine the critical issues” (7). This type of work carried out at home is often played without an accurate assessment of one’s workstation with regard to the work risks from visual display units (VDUs); in light of this, the study deals with a survey on workers who make use of this mode of interaction using a survey dedicated to the purpose. The results of the survey aim to raise awareness among stakeholders about initiatives that address the problem.

With this contribution, the special series closes which naturally cannot touch all the possible problems connected to telemedicine in the period of COVID-19 but which in any case tries to touch on some relevant ones that, as we have tried to illustrate here, are connected by a single thread between the thousands that with simple exercise can be identified in this period.

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