Gerontological perspectives
of Big Data analysis of mobile-based health data

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The mass proliferation of smartphones with the features of general purpose computers is a major challenge for the iPhone in 2007. Medical use of these devices started in 2009 and today there are around 350,000 health apps in the world, are available, with hundreds of hundreds of millions of them, and they have more than 10 million users. Studies show that users are becoming more open to health apps and related mobile phone peripherals, use of assets (e.g. activity trackers).

Mobile-based data collection is suitable for the assessment and monitoring of physical and psychological conditions, as well as diagnostics and prediction. The databases that have been created are suitable for the implementation of prevention and intervention goals either at the personal or community level, and they also hold enormous potential for medical and public health research. All these possibilities are also valid in the field of gerontology.

In the presentation, we organize and systematize the main forms of mobile-based health data collection opportunities and point out the drawbacks of treating the resulting data with isolated methods. Instead of the current approaches based on individual applications, we recommend a

complex, application organised into a network, system and an automated data collection method, which can be used to implement lifelong health monitoring.

This methodology, which detects health processes in real time but does not require direct medical intervention, is particularly important in the care of the elderly. In addition, Mobile Phone-Based MedTech can also be used to monitor ageing processes, with digital footprint analysis providing an indirect way of determining the biological age of different organs, organ systems or the whole organism, which can be used for research purposes and as a basis for individual intervention opportunities.

Database analytics built from mobile-based information has a strong competitive advantage over other approaches in terms of high cost-effectiveness, real-time datas the simple, latent operation and anonymity. All of these can represent an alternative to be considered not only in gerontology, but also in other areas of medicine and medical practice.

In the presentation we take a multidisciplinary approach, building heavily on the foundations of public health and on the results of modern computer science, Artificial Intelligence and machine learning, complemented by the interpretive and analytical inclusion of some economic and philosophical, ethical aspects.

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