



The Hygieia, 3rd century A.D., Roman copy after Greek original of about 300 B.C., William F. and Josephine H. H. Collection, Wikipedia, Source: Art at the Louvre, Louvre Museum of Art, https://commons.wikimedia.org/wiki/File:Hygieia_Louvre.jpg

Telehealth, telemedicine & telepsychology: an explorative overview

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Abstract

Telecommunication and Information Technologies progress allowed the improvement of telemedicine, overcoming past difficulties due to poor real-time media. In fact, while in the past early examples of telemedicine were delivered by telephone, radio and fax, today it is possible to exchange either medical, imaging and biodata with high fidelity through distributed client/server applications and high band communication. The remote monitoring of patients on the one hand can reduce the need for in-presence visits and, in general, the cost of medical care, on the other hand it may also improve the efficiency of performance, prompting the staff to an efficient organization of their work. However, the sensitivity of the data, the costs of telecommunications, data management and staff training suggests the need to develop efficient solutions, easy-to-use and with high level of security. The interfaces themselves should have a cognitive-driven design, in order not to involve loss of efficiency in the use, both by patients and operators. Among the disciplines of cognitive science, for example, the study of human-machine interfaces (HCI) fits into this framework. This discipline involves not only the consideration of artificial intelligence adaptive and advanced algorithms (AUI – Adaptive User Interface), but also the study of individual cognitive mechanisms, because the proposed solutions are usable according to the abilities of each individual. I also wish to recall that there are other terms used alternatively to “telemedicine”, such as “telehealth” and “eHealth”, which express better the complex universe of the disciplines involved. In fact, these terms recall a broader definition of remote healthcare intervention, referring not only to clinical services, but also education, administration and research and, last

but not least, psychological support to patients and their relatives. The close relationship, within the cognitive sciences, between the psychology of the mind and artificial intelligence, can provide an important new impetus to innovation in telemedicine. It should be remembered that the artificial intelligence gave an early boost to cognitive sciences and received a further boost later. The most promising application of telemedicine is the so-called mHealth, where “m” stands for “mobile” indicating the provision of health services through mobile communication technology. The reason why this issue has a great importance in the telemedicine scenario is in the broad diffusion of mobile technology if compared to other ICTs. In fact, the Internet or other advanced technologies are not equally available in all world locations, especially in remote or rural sites or in resource poor settings. Mobile phones, instead, represent an exception, because they reached even remote areas in the so-called LMIC (low- and middle-income countries). Moreover, mobile phones are now low cost and the coverage of mobile networks is rapidly increasing. These facts open new possibilities for remote health services; actually, a number of mHealth projects have been already developed especially in LMIC. Projects are related to several applications, such as health education, treatment controls, opinions and so on. The services provide calls or text/voice messages related to the purpose of the health application, giving continuous support to patients and also the possibility, for health workers, to organize visits, consulting or, in advanced project, transport to health services. The aim of this seminar is to deepen explore telemedicine, telehealth and telepsychology in their most common application. We will discuss not only the patients’ opinion but also the healthcare assistants’ one.

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