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Evaluation of medical decision errors during the transition period to telemedicine

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ABSTRACT

The context of the Coronavirus pandemic has fundamentally changed the way we approach medical services. Beyond setting up new technological possibilities, it has propelled telemedicine to become a reality, bringing undeniable practical benefits. The questions that arise are both justified and worrying: can digitalization replace a direct interpersonal relationship that involves a physical examination, while preserving the quality of the medical act and the degree of patient satisfaction? Isn't there a risk that the digitization of the medical record will cancel out the deep human character of classical medicine that has evolved since the time of Hippocrates? Should the implementation of telemedicine be "the state-of-art" of modern medicine, in accordance with the co-evolution of digital technology? It is hard to believe that once used in this period, telemedicine will be abandoned. However, telemedicine must be analyzed not only in the short term but also in the long term, in order to be able to evaluate both its usefulness and possible deficiencies.

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Introduction

Reduced access of patients with chronic diseases to medical facilities during the Coronavirus pandemic led to a booming evolution of virtual medicine [1]. In general, telemedicine applications can be suited to a wide variety of chronic conditions [2]. Many studies have approached the utility and applicability of telemedicine for monitoring chronic conditions related to cardiovascular diseases [3], geriatrics [4-6], oncology [7], obesity or diabetes mellitus (DM) [8], dermatology [9], dental health [10], neuro-degenerative diseases [11,12], etc. Virtual medicine can therefore be used in screening, monitorization, prevention or treatment. Telemedicine can break barriers such as distance, costs or even social anxiety, and can offer medical support where classic approaches failed to occur because of different reasons. Remote examination as a suitable method to convey a medical act, to ensure high reliability and quality of the therapeutic process, while reducing the risk for erroneous decision and maintaining the interpersonal empathy, has not yet been demonstrated to a large extent [10,13].

The lack of humanistic approach and the instability of the patient-doctor relationship

In order to define the wrong decision, we would need clearly formulated criteria to standardize the terminology. Sometimes it is necessary to have a series of questions at the level of a theoretical concept that would represent the promoter of subtle mechanisms that will lead to the confirmation or refutation of the hypotheses and, finally, to

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solutions. The literature does not refer to this type of risk focusing only on what is generically called medical error [14]. The two notions are distinct and somewhat complementary, being in a bidirectional relationship: a diagnostic medical error can be a factor for the risk of an erroneous prognostic decision, but in turn, the risk of an incorrect decision can be decisive for a diagnostic medical error or therapeutic, for example. For this reason, discrimination and nuanced analysis of the meaning of the two notions is necessary at a conceptual level.

Certainly, the subtle consequences have ethical implications in both situations, with immediate and direct reference to the degree of satisfaction of the patient but also of the doctor and/or to the impairment of the therapeutic relationship by the appearance of the escalating antagonism [15,16].

Following the same reasoning, there is another risk determined by the existence of "the cult of guilt, shame and punishment" (see malpractice) namely the practice of the type of defensive medicine [14].

A clear outline of the theoretical framework of the notion of error is required. The Merriam-Webster dictionary defines the word error as “the involvement of an unintentional deviation from the truth or accuracy during a general act”, or one can choose a meaning more appropriate to the context of the discussion, such as the one that there is a need for the existence of a standard or guide and a deviation from the correct course by failure effective of this, in order to be able to suggest an error [17].

This article aims to analyze a fundamental aspect of medical consultations, namely the risk of erroneous decisions in formulating the clinical diagnosis. The approach is made from a hermeneutical perspective and in an eclectic, medical manner with emphasis on the psychology of the doctor-patient relationship. The risk of a wrong decision is a component of any medical consultation. Given the lack of clinical examination and decode of non - verbal and paraverbal language, does the risk of erroneous decision increases in the case of long-distance consultations?

Discussions

Types of errors

In this situation we reach a delicate problem, fundamental and difficult to solve in clinical practice: the medical act is only a standardized approach through practice guidelines or is “the culmination of the relationship between art” as Hippocrates called it, “and science”, in the current sense (only) of evidence-based medicine, for the benefit of the patient, undoubtedly.

Clinical reasoning is a complex process, resulting from the corroboration of certain stages, which can lead to a medical, diagnostic or therapeutic decision. Its elaboration requires clinical data - which in the case of telemedicine are missing due to the impossibility of performing the remote clinical examination and paraclinical data - easily obtained by developing and increasing the accessibility to laboratory and paraclinical investigations. This equation lacks an essential term, crucial in making a decision with low risk, namely, the "humanist" factor that cannot be removed from the list of elements which are indispensable to the success of any therapeutic approach. A contradiction or perhaps a paradox appears here. Modern medicine has emphasized the importance of the therapeutic relationship in order to increase the quality of the medical act and to reduce its decision-associated risk. In this sense, there have been trends in medicine that have influenced without a doubt the concept of medical act; we mention two concepts taken from psychology “the doctor as medicine” founded by M. Balint [18] and “patient-centered therapy” theory elaborated by Carl Rogers [19], later taken over by medicine in the holistic approach from a biopsychosocial perspective. This paradigm shift in the concept of therapeutic relationship imposed by the need for refinement and adaptation to contemporary needs in medicine is in the case of distance consultations in a stalemate and in a contradictory situation. It is not just about communication as the process of transmitting words from sender to receiver, which can certainly be done at the level of telemedicine at high standards. It remains to cover the defining and determining aspect of the medical act having as its central, the deep humanistic element, namely the therapeutic relationship. Classical medicine defines the therapeutic relationship as a special type of social relationship precisely through the existence of particularities that do not exist in any other type of social relationship. Analyzing in depth these particularities we find that they are the basis of the level of trust with which the doctor is invested by the patient and which will ultimately lead to a correct and beneficial decision for the patient. What is special about medical consultations is the possibility of abstracting the age, sex, religion, social position or status of the patient. At the psychological level, the proof of the patient's trust consists in this "abandonment" possible due to the investment of the doctor with authority and which will ultimately lead to the adoption of a correct decision. The question is whether we can standardize what is correct in patient-centered medicine, given the situational uniqueness of each case, which will generate the need to adopt individualized therapeutic solutions and assume an individual degree of risk for each patient?

However, increasing the proportion in which the diagnosis is based on paraclinical data leads to a paradox where the therapeutic relationship may lose its consistency of deeply humanistic activity.

This article is not a plea against distance medicine. In the current pandemic context, the practice of this type of

medical act was a viable and life-saving alternative given the restrictions imposed by the medical crisis in an epidemiological context [20,21]. For this reason, it would be unfair and incorrect to criticize or abandon a life-saving alternative in special situations [22,23]. The question is different: how can we find a series of alternatives that do not minimize the deeply humanistic nature of the medical act, how can we replace the objective examination, at least at this time of technological evolution so as to find a substitute for the clinical examination, how can we increase the degree of trust and the authority of the doctor in the case of telemedicine consultations, how to observe and decipher the body language and to integrate it in the context? [24].

The classic medical approach is validated by the test of time. Telemedicine confers the mirage of easy distance communication. However, given the intricate nature of the medical act coming from interindividual particularities, high caution to details and thorough examination (at maximum allowed by the technological means) should be taken in order to minimize the risk of erroneous decisions [25].

It is necessary to refine this notion by implementing additional terms. In this regard, it was introduced the formulation of "critical risk that refers to the existence of a vulnerability that could cause damage to the proper emotional, social and adaptation to the situation" [15].

There are particular situations as it happens in the case of patients with psychosomatic disorders or anxiety-depressive disorders, in which the fear of death is so marked that the patient's presence in the office in a face-to-face consultation is sometimes the only viable option. "In psychosomatics, the risk of erroneous decisions reaches high levels, because the factors underlying the diagnosis are psychological variables, which involve a certain degree of subjectivism" [15].

Increased risk of classical medical errors in telemedicine

Returning to the risk of erroneous decisions, it is necessary to emphasize that there are different perspectives of this risk, namely, the patient does not have a mirror image of the risk predicted by the doctor. The doctor's decision is one based on scientifically substantiated medical evidence and supported by the medical data provided by the anamnesis, the methods of investigation, the scientific knowledge available at that time, access to information or means of investigation, professional experience.

The patient's decision is based primarily on the mutual trust which develops with the doctor and on the quality of the therapeutic relationship established with him.

It is natural for this to occur because the quantification of risk and how it is assessed are passed through different filters related to medical knowledge, personal beliefs, context, age, education, financial status, sometimes secondary benefits. Different perspectives on risk can really lead to wrong decisions [26]. The notion of decisional risk refers both to the attitude adopted by the doctor during the medical act, with reference to the established diagnosis and to the indications of therapy, and to the attitude adopted by the patient, regarding the decision to accept the diagnosis and therapy. From a hermeneutic-philosophical point of view, any decision involves taking risks.

The range of medical errors, in a didactic, structural classification is wide. Thus, we can fall into the category of medical errors: delaying a definite diagnosis, delaying the initiation of therapy, conducting an investigation [27], misinterpretation of test results, etc. In the same category we include the wrong reasoning which is followed by choosing an inappropriate treatment, non-recognition of signs and symptoms, lack of recommendation of investigations, inefficient communication, anamnestic omissions, inadequate relationship, giving too short a time for consultation [28].

Despite the fact that erroneous decisions are common, multiple and complex causes, their attribution to both doctors and patients, lead to a reduced knowledge of the intrinsic mechanisms of this phenomenon. It is impossible to separate any medical decision from the existence of this risk because the two members of the dyad - the doctor and the patient - participate in establishing a diagnosis and choosing the therapy [29]. Moreover, in many situations reaching the escalating duet of antagonism and given the degree of subjectivism of a choice with different starting points and perspectives, there are disruptive factors of the right decision. Informed consent also assigns to the patient a part of the responsibility of the medical act. In the same way, it offers him the possibility to choose the therapy or some options regarding the means of investigation. "Second opinion" solicitation, information tools such as the Internet [30], sometimes restrict the doctor's choices, and the relationship with the relatives is occasionally an element that increases the risk of erroneous decisions. Particular situations such as those of pediatric patients, with cognitive impairment, hearing loss, psychiatric disorders with lack of discernment increase the risk of erroneous decision [31,32].

It is important to report that, sometimes, telemedicine proves to be as efficient as face-to-face medical act, but the absence of the possibility to undergo the physical examination, may lead to a low rate of interrater reliability. A solution to this situation may be the implementation of some standardized scales [33].

Because telemedicine predisposes to medical errors, which are evaluated only by studies that compares two different methods, is important that in the medical process of examination, diagnosing and treating the patients to add

several mechanisms, in order to improve paraverbal communication, such as video-calls, rather than phone-calls and other application that can help scanning the body, in order to offer a better treatment for our patients [34].

For instance, psychotherapy in which the reconceptualization for normalization and bringing the patient into a state of positive affectivity corroborated with the approach in a "classical" manner by using laboratory investigations in dynamics, can lead to good results in the therapy of patients with psychosomatic conditions but also in the case of those with anxiety-depressive disorder [35]. In addition, the way of monitoring through laboratory investigations can increase the patient's level of confidence, strengthening the therapeutic relationship by providing a concrete, tangible feedback characteristic of evidence-based medicine. Thus, we can use the synergistic action of the therapy and the medical approach per se, in which the way of "meeting" with the patient face to face combined with the online one will mutually potentiate each other, thus diminishing the possible impediments due to the contact mediated by the computed interface, and implicitly, the risk of an erroneous decision.

Communication errors and obtaining informed consent

The solution in such situations consists in effective communication and establishment of a stable therapeutic relationship, based on trust and mutual respect.

"The doctor's communication skills are necessary both to manage the anamnesis (objectives: obtaining complete and correct medical information, efficient time management, establishing a solid therapeutic relationship, conceptualizing the case), but especially to build a therapeutic relationship. The patient's approach in individualized, personalized medicine is done in an integrative, eclectic manner. The paternalistic style in the doctor-patient relationship is increasingly replaced by the collaborative style, in which the patient is an active participant and responsible in decision making. In this context, informing the patient plays a key role" [30].

"Communication will take into account the two components, cognitive and emotional. It is necessary to give due importance to the emotional aspect of communication, because the patient's emotional balance will determine a correct approach to the situation, facilitating the correct understanding of (medical) information provided by the doctor, but also the decision-making capacity and the satisfaction index regarding the therapeutic relationship" [30].

Probably the ideal option would be one in which the individualized medical approach is the standard type of consultation. It is important to integrate and choose the benefits of the two ways of conducting consultations, face to face or at distance, in order to obtain the best option for the patient [36] and to emphasize the idea of a motivational interview [37].

A decade ago, remote consultations were viewed with either suspicion or enthusiasm. However, the possibilities of use were quite low and there was an increased dose of skepticism [38]. The current pandemic situation has created a favorable context for the use of this method, especially considering the impressive present technological support. Telemedicine undergoes a large "in vivo" test, and although benefits are already noted, there is still a lot to study, to draw conclusions to improve and to find optimal solutions [39]. Regardless of the manner in which the consultations will be granted, most likely in a combined, mixed manner [24,40], it would be appropriate not to slip on the slope of technology by giving up classical medicine nor to remain followers of a conservatism inadequate to the age in which we live, without recognizing the benefits of the technology we have at our disposal [39,41].

It is mandatory for the medical world to access information that is indispensable for a quality clinical practice and at the same time to interact with patients to maintain the humanistic spirit of the medical profession [42-45]. And this is because the ultimate goal of any medical act is patient satisfaction and safety [46] under the great umbrella of interpersonal connection and empathy, in the pattern of which need is increasingly recognized as patient-centered medicine in a biopsychosocial approach [47].

Human ingenuity, the desire for self-improvement and the urge to save lives where the spring that triggered the finding of solutions adapted to contextual needs [48]. All these were doubled by the technical possibilities offered by current technology [49,50].

Tiwary et al. emphasize the importance of proper communication between healthcare professionals and patients. Doctors, nurses, and pharmacists should attend communication training programs to improve their communication skills and raise the chances for better patient well-being results [51]. Such strategies would improve the adherence of patients and would involve them in the medical act.

There is another burning topic, which may be challenging for some doctors- communicating about medical errors. On the one hand, informing the patient or the family about a medical error could help in adopting new treatment strategies and achieving greater outcomes. On the other hand, one of the biggest concerns in admitting the medical errors is the implication of malpractice litigation, which can retain the doctor from acknowledging the error and address it [52].

Conclusions

While keeping in mind the delicate balance of risk and benefits between classic medicine versus telemedicine, it is worth investing intelligence and effort in order to establish

clear coordinates and reduce in any situation the risk of erroneous decisions while using virtual care medicine. Telemedicine evolved fast and allowed increased accessibility to medical services during the Coronavirus pandemic, which was of major support. It can be further used and developed in order to offer medical care in various fields such as prevention, general screening or rehabilitation, provided that maximum attention is paid to compensate for the lack of direct physical examination and to reduce the risk of erroneous decisions. Last but not least, we must not lose sight of the interpersonal relationship which develops by direct clinical examination that not only provides essential data for diagnosis, but also allows physical closeness subjectively transposed into the empathy felt by the patient.

Compliance with ethical standards

Any aspect of the work covered in this manuscript has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

Conflict of interest disclosure

There are no known conflicts of interest in the publication of this article. The manuscript was read and approved by all authors.

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