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MEDICAL ERROR IN LIGHT OF THE SARS COV-2 PANDEMIC

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Abstract: *The global pandemic of COVID-19 has significantly changed our lives, and mostly doctors because of their direct participation in the management of the pandemic. The COVID-19 pandemic has had an extremely large impact on many aspects of health care. Doctors, who, more than the rest of the population infected with COVID, were in a situation where they were faced with the pandemic 24 hours a day, seven days a week, were faced with fatigue and exhaustion. Physician burnout and oversaturation can lead to decreased patient care, increased medical errors, and poor health. Oversaturation of frontline healthcare workers has become a major problem during the pandemic. On the other hand, doctors working in preclinical departments had a lack of interaction with patients, without much clinical professional work, i.e. they were faced with the fact that profession and work experience did not have a significant impact on the final outcomes in the treatment of those infected with COVID. Total workload and work during both the first and second waves were positively correlated with exhaustion. Factors that had a decisive influence on the level of stress for doctors were lack of knowledge and excessive responsibility, workload and work environment, ethical stress, organization and teamwork. Also, during the first wave of the pandemic, doctors who worked with COVID patients were faced with the fact that they were working without adequate protective equipment, which included masks, visors, gloves and protective overalls, which, in addition to all the previously mentioned facts and circumstances, represented maybe even the biggest pressure. This paper aims to describe the level of stress that medical workers were faced with and the impact of their exhaustion on possible errors during the treatment of patients during the SARS CoV-2 pandemic.*

Keywords: *Pandemic COVID-19, stress and exhaustion, medical error, oversaturation.*

INTRODUCTION

Medical practice is undoubtedly very meaningful, personally fulfilling and rewarding. However, at the same time, it can be demanding and stressful. The global pandemic of COVID-19 has significantly changed our lives, and mostly doctors because of their direct participation in the management of the pandemic. The COVID-19 pandemic has had an extremely large impact on many aspects of health care. Even in high-income countries such as Sweden, the number of patients far outstripped resources in affected areas, especially during the first wave. The medical profession is exposed to an extremely high level of stress during their work, and they are especially susceptible to dealing with oversaturation and burnout during their work, which culminated during the COVID-19 pandemic.

The high amount of stress in their daily work puts them at greater risk of depression, substance abuse, functioning problems, and even suicide. All this, as well as daily dealing with dying colleagues and patients, ultimately leads to general dissatisfaction and inadequate patient care. Medical errors pose a threat to patient safety as well as a serious public health problem. In addition to numerous researches on medical errors and numerous literature, several studies have defined “medical errors”. When the pandemic emerged, the symptoms of the disease and the details of how it was transmitted were not known. There are practical questions about whether, to whom, when and how to tell that a mistake has been made. In this paper, the medical error is analyzed, with the aim of determining how the pandemic affected the increase in medical errors and whether the increased death rate of people in the world is a consequence of the corona virus or it is increased due to the pandemic and medical errors.

1. TERM AND TYPES OF MEDICAL ERROR

The healthcare system is very complex and includes interaction between professionals and institutions, risky situations and depends on technology. System characteristics can exacerbate the consequences of these errors, as well as increase the risk of errors. In order to regulate patient safety, it is necessary to assess harm and risk to patients. According to the World Health Organization, the definition of patient safety states that potential harm or unnecessary harm related to health care should be minimized.

1.1. The concept of medical error

Medical errors can be defined as a preventable event that can lead to the unwanted use of medication or harm to the patient. The error may relate to health products, professional practice, procedures, communication problems (including prescribing, product labeling, packaging).

Recognizing errors is the best way to improve the safety and quality of healthcare facilities. When administering a drug, errors are usually detected if there are clinical

consequences that manifest in patients. According to the World Health Organization (WHO, 1972), an adverse reaction is any adverse or undesirable effect that occurs after the administration of drugs in doses normally used for the diagnosis or treatment of a disease. Adverse reactions cannot be prevented, although the possibility of an adverse reaction is known.

There are several definitions of medical malpractice. An error is defined as the failure of a planned action to complete as intended (i.e., an execution error) or the use of the wrong plan to achieve a goal (i.e., a planning error) (Kohn, Corrigan & Donaldson: 1999). Leape explains a mistake as “an unintentional act (or missed performance) or an act that does not achieve its intended outcome.” (Leape:1994). Reason explains it in a different way, as “the failure of a planned series of mental or physical activities to achieve an intended outcome when these failures cannot be attributed to chance.” (Reason:1990).

We categorize errors according to their way of creation. Systemic errors, also called latent (hidden) errors, originate primarily from deficiencies inherent in the system of medical practice. The health system is like a living organism that is constantly being upgraded. The comments of patients, doctors and other medical personnel must be taken into account and represent an important component in the construction of the health system. The healthcare system formed in this way largely prevents the occurrence of medical errors and violations of the patient's rights. In the Republic of Serbia, one of the basic pillars of the health system is solidarity. This means that a large number of our citizens (children, students, employees, pensioners) have health insurance, regardless of the level of health care they need. Such a large number of users of health services, as well as medical personnel, increases the possibility of medical errors. That is why the healthcare system is a living organism that must constantly be upgraded and improved. In contrast, individual errors are those that arise primarily from deficiencies in one's own knowledge, skill, or attention. For example, due to improperly maintained medical records, without having a good insight into the complete condition of the patient, the doctor may make a mistake by prescribing drugs that may endanger the patient. For a patient with kidney failure, the doctor may prescribe a drug that directly damages the kidney. In such a case of individual error, the physician has primary responsibility.

Currently, there are at least 4 definitions of diagnostic error in active use:

- Graber et al. define a diagnostic error as a diagnosis that is incorrect, significantly delayed, or completely missed (Graber, Franklin & Gordon: 2005).. This so-called “label” definition can only be applied retrospectively (for example, a final laboratory test) to confirm the correct diagnosis.
- There are two process-related definitions: Schiff et al. define a diagnostic error as any breakdown in the diagnostic process, including errors of omission and execution (Schiff et al: 2009). Similarly, Singh et al defined diagnostic error as a “missed opportunity” in the diagnostic process, based on a retrospective review (Singh: 2014).
- In its study, *Advancing Diagnosis in Health Care*, the National Academy of Medicine proposed a new definition: “Diagnostic error is the failure to establish an accurate

and timely explanation of a patient's health problem(s) or to communicate that explanation to the patient" (Bonini et al: 2002). This is the only definition that specifically includes the patient in the wording of the definition.

1.2. Types of medical error

If a doctor misdiagnoses a patient's condition or a primary care provider does not regularly arrange for diabetics to undergo eye examinations, it may be months or even years before we recognize that an error has occurred, mainly because recognizing the error is associated with unwanted event (eg in the case of diabetics, blindness or glaucoma) (Hoff et al: 2004).

We may never know that an error occurred in these patient care situations. These issues will be particularly difficult to address in the ambulatory care setting, where much of patient care is non-acute and focused on managing chronic conditions. Moreover, more and more procedures are currently performed in outpatient settings. New techniques, drugs and equipment that have been developed in the last ten years have made outpatient and office surgery (so-called minor surgery) effective. Errors can also be classified according to their outcome (Bonini et al: 2002), the setting in which they occur (hospital, ambulatory), the type of procedure (drugs, surgery, etc.), or the likelihood of their occurrence (high, low).

The classification of medical errors is always specific to certain specialties and are a direct product of errors in medical practice. Various classifications have been made to correspond to fields such as laboratory medicine, anesthesia, general practice, otorhinolaryngology. For example, in otorhinolaryngology, critical points that are the most common cause are: technical errors (19.3% of all errors), treatment errors (13.7%), testing errors (10.4%), errors arising during surgery planning (9.9%), errors related to medical equipment (9.4%), errors occurring after surgery (8.5%), wrong site surgery (6.1%).

There are four types of treatment errors:

- mistakes based on knowledge, that is, due to a lack of knowledge — for example, when a patient is given penicillin without determining whether the patient is allergic. In a study conducted in Australia, communication problems with senior staff as well as medication dosing errors contributed to knowledge-based prescribing errors.
- Rule errors (use of a bad rule or wrong use of a good rule) – for example, when insulin is applied to the skin of the abdomen where resorption is slower. In this way, good medicine is misused.
- Action errors (called slips) — for example, when we pick up a bottle containing diazepam (Bensedin) from the pharmacy shelf instead of one containing diltiazem (a heart medicine).
- Memory-based errors (called omissions)—for example, when we know a patient is allergic to penicillin, but we still give the drug because of the current. This is hard to avoid;

2. IMPACT OF THE PANDEMIC COVID-19 ON MEDICAL ERRORS

The COVID-19 pandemic is likely to be one of the biggest epidemics we will face in our lifetime. No infection has swept the entire globe at the same time. It is a great luck that the clinical picture was still milder than in plague epidemics, Spanish fever when hundreds of thousands of people died. Spatially speaking, COVID-19 is by far the most widespread pandemic in the world. Governments around the world are implementing strategies to reduce the number of deaths while trying to maintain economic functionality. Our healthcare system has established a rule that all patients with pneumonia, unilateral or bilateral, are generally hospitalized. This is why the Republic of Serbia has the largest number of hospitalized patients in relation to the total number of patients. This data is most likely the reason why our country has the lowest mortality in the region and beyond. This kind of system of health protection of the population against COVID-19 is expensive, but our health system can withstand this kind of pressure for now.

The disease itself is new and knowledge about its clinical manifestations is still being investigated. Both the physical and psychological safety of clinicians and the capacity of the health system are at risk and may affect clinical decision-making (Issbel et al: 2020). The treatment of patients with COVID-19 is carried out according to the protocol (currently in force 16th Protocol) which is being changed. Anesthesiologists and infectious disease specialists take the lead. Doctors of other specialties (ophthalmologists, psychiatrists, surgeons...) apply only the protocols provided to them. In such cases, there is a possibility of a medical error.

As the number of hospitalized patients with the coronavirus (COVID - 19) increases, revenues from simple procedures decrease, and healthcare workers experience endless stress. The pandemic is challenging the healthcare system in unimaginable ways. Due to the fact that the mentioned disease is new and insufficiently researched, therapeutic protocols are changing dramatically. Complete groups of drugs that were used before (chloroquine, antiarrhythmic) turned out to cause more problems with heart rhythm than they cure from COVID - 19. The use of such drugs at the beginning of the pandemic, from today's point of view, we could consider a medical error.

2.1. Impact of COVID-19 on usual patient care

The COVID-19 pandemic has greatly affected the provision of healthcare to patients. Healthcare workers and patients communicate at a distance and implement other prevention strategies to minimize the risk of getting sick. Healthcare facilities are faced with the difficult task of striking a balance between the need for elective procedures and the need to protect patients and staff from COVID-19 (Owen et al:2020). In addition, the health system must divide the complete health care into the Covid system (patients suffering from COVID-19) and patients suffering from other diseases: malignant, cardiovascular and others. For example, elective surgery is almost completely shut down during the pandemic. Healthcare providers and hospitals have seen a decline in patients

seeking emergency care for serious medical conditions. Fear of infection has prevented patients from seeking routine medical care, and research has shown a drop in hospitalizations, with some states seeing as many as 45% fewer emergency room visits per week. The World Health Organization estimates that more than 20 million routine preventive vaccinations will be missed due to the pandemic (Rosenbaum: 2020). Delaying treatment in patients with chronic conditions or acute illnesses may pose a greater health risk than with COVID-19. A cohort study published in September 2020 found that it is very rare for patients to become infected in hospital due to rigorous infection prevention measures. As hospitals resume active operations, they must demonstrate to patients their commitment to safety. For example, as hospitals provide and require patients to wear masks, they require their employees to wear masks at all times, limit the number of chairs in waiting rooms, and enforce the use of plexiglass partitions. To move forward, we should address a number of critical research priorities as the COVID-19 pandemic continues. Another unanswered question is the question of burnout of medical staff and how those who decide to leave the respective health facility located in the Covid system affect the operation of the remaining staff and their fulfillment of their obligations to patients.

CONSLUSION

Medical error is related to the medical aspect of COVID-19 (prevention measures, therapy, monitoring of consequences). However, the social aspect (opposition to vaccination, the inability to move people and goods), the economic aspect, the cultural aspect, the sports aspect show how much the pandemic has changed our lives in two years. Medical error in a pandemic is shown as a wrong therapeutic approach to the disease at the appropriate time. The therapy of the disease two years ago and the therapy that is applied today are different. The time factor is very important in this situation. Did we commit a medical error by applying the therapy two years ago? For this reason, the mutation of viruses, the application of vaccines, the invention of new antiviral drugs, the invention of new types of tests are processes that are constantly tested, supplemented and never finished. This living mechanism helps to maintain health systems in the fight against the virus, making fewer medical errors, all for the benefit of patients.

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