

Short Communication

Occupational Risks of Health Professionals and Perspectives In The Face of Pandemic Situations, a Narrative Review

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ABSTRACT

Objective: To explain the possible occupational risks of health professionals facing the pandemic situations.

Methods: this is a narrative review carried out by consulting the health databases and publications of the World Health Organization. Articles published from 1990 to 2020 were considered, for this purpose, we used the descriptors: "Health personnel, Occupational Risks and Pandemics". Narrative review: 28 articles and other documents and a consultation to a database were selected to substantiate the work, items such as "Known factors that contribute to the lack of security of health professionals in the face of pandemics and perspectives against

the new coronavirus", "Statistics related to contagion and death rates among health professionals" and "Possible motivations or not for carrying out work during periods of pandemics" were based on a sufficient bibliographic search explaining the main points of occupational safety of health professionals in the face of a pandemic situation.

Final considerations: There is a real need to ensure rights, supplies, equipment and vaccination for health professionals; they will be an essential force in the fight against pandemic as the actual against new Coronavirus.

Keywords: Health personnel; Occupational risks; Pandemics

Introduction

Influenza is a frequent health problem that presents itself on a seasonal basis and affects practically all countries in the world; depending on its severity it can cause significant socioeconomic damage to countries, generating long days of hospitalization for patients and subsequently permanent physical damage. The world has been facing major influenza pandemics for centuries, an example of which was the Spanish influenza pandemic that lasted from 1918 to 1919 with the greatest damage caused to Spain. The disease was responsible for causing the death of 1% of the entire population of Spain [1,2].

The outbreak of avian influenza that occurred in 2003 severely affected poultry production in several countries and raised questions about the effects of a larger scale pandemic, which could affect other sectors. Sanitary measures such as quarantine and isolation are questioned by many health experts and there is great difficulty in stopping the expansion of a disease due to the inability of governments to control the population [3,4].

Annually influenza is responsible for about 36 thousand deaths per year in the United States alone and about 226 thousand hospital admissions. Some groups such as the elderly, HIV patients, children and patients undergoing cancer treatment are a group more exposed to this disease, but health professionals are also a group to take care of patients [1,5].

It is a well-known fact that health professionals are a key point for Public Health Systems' capacity to respond to pandemics, thus the number of professionals, their training, availability

of individual protection materials and aptitude for work are a fundamental factor for disease control [6].

At the end of 2019, China reported to the World Health Organization the first case of pneumonia with no known cause. The first symptoms of the patients were very similar to pneumonia of viral cause, the country had a relative facility in detecting the cases and, with that, they carried out the early identification of the pathogen and the tests showed that it was a new virus among the group of coronavirus, this showed similarity of about 80% with the already known SARS-CoV1. On March 11, 2020 the World Health Organization declared a pandemic for the new coronavirus and all the world became focused in solving this new problem in addition an special worrying: the health of health professionals [7].

Methods

Data search was performed in the MEDLINE, LILACS and SCIELO databases, in Portuguese, Spanish and English, using the following descriptors: Health personnel, Occupational Risks and Pandemics. Articles published from 1990 to 2020 were considered. The literature review aimed to gather data about the risks that health professionals will have because of the pandemics. The bibliographic search concentrated on articles from scientific journals, editorials, official documents of the World Health Organization published until March 23, 2020 and a consultation was made to the database of the Mortality Information System of the Department of Informatics of the Unified System of Health-DATASUS.

Firstly, we read the abstracts of the articles for a more specific verification of their relevance for the present study and then a search was made for the articles that were considered relevant in their entirety. The number of selected articles and documents, which fulfilled the prerequisites listed below, were 28 and 3 more documents from the World Health Organization among these, and were considered guiding points:

Known factors that contribute to the lack of security of health professionals in the face of pandemics and perspectives against the new coronavirus: the topic observed deals with the level of recognition about the risks that health professionals suffer at the expense of the work performed.

Statistics related to the rates of contagions and deaths of health professionals: published works that had information about the contagions and risk that contaminated professionals could offer to the population served and world statistics that reveal the risk in terms of fatalities occurring in pandemics.

Possible motivations or not for carrying out work during periods of pandemics: works that demonstrate what are the reasons that make health professionals risk their lives at the expense of the lives of others, often unknown and factors that prevent them from providing care.

The items listed for the selection above aimed to problematize what are the real risks of health professionals in the face of a pandemic.

Literature Review

The ability to respond to a pandemic depends on several factors, an effective response guarantees the lives of many people and ideal social and economic conditions, adequate financing, management capacity, logistics and trained human resources are essential for this. One of the main critical points in relation to adequate responses to diseases of global impact is the lack of trained professionals and appropriate materials [8].

Known factors that contribute to the lack of security among health professionals in the face of pandemics and perspectives against the new Coronavirus

One of the known measures for the protection and prevention of health professionals is vaccination. During the outbreak of the H1N1 Influenza, a survey was carried out aiming at the professionals' knowledge about preventive measures, the results shows that for the health teams, most workers consider the individual protection equipment more important than vaccination. The fear of contracting the disease was the main motivator for the acceptance of the vaccine [9].

In a research carried out in a hospital, it was observed that after vaccination by the health team, there was a great reduction in the mortality of elderly people due to Influenza, this research attests the fact that one of the factors that contributes a lot to the protection of health professionals and even the protection of patients to be cared for by them is vaccination [10].

The current Coronavirus pandemic has no vaccination available, professionals are on the front lines and for this reason, more exposed. In addition to the risk of exposure to the pathogen due to the absence of vaccination, there are risks associated

with long hours of work, psychological stress and professional exhaustion [11].

In Spain published documents suggest that health professionals have been charged to the point of exhaustion, there is a shortage of trained professionals, measures such as canceling vacations and returning retired professionals to work are seen as insufficient to control the new pandemic, this situation worsens because many professionals have already been contaminated and are in quarantine, a fact that contributes to increasing the risk of the remaining professionals, as it is known that their insufficiency causes stress levels to increase and thus the risks [12].

Regarding the use of individual protection equipment, the current situation facing the world is a lack of these inputs, which may be insufficient for health professionals. The World Health Organization recently recommended that only people with respiratory symptoms should wear masks, already anticipating the lack of these materials for health professionals. The use of the mask by the entire population should only be considered if the quantity of available supplies is enough for health professionals [13].

Another point of risk for health professionals is for those who work in Intensive Care Units (ICUs), these were the professionals identified as the most exposed to pandemics, this factor is due to the high viral loads of critically ill patients, the most exposed team because of the performance of procedures that generate aerosols and the incorrect use of PPE (personal protective equipment) and hygiene [14].

Recent findings show that the new coronavirus is more dangerous for elderly patients, with pre-existing heart disease, diabetes, obesity and who face some problem related to low immunity. The provision of care by health professionals with this profile can put them at even greater risk, special care by health managers seems to be something fundamental as part of the response to this current crisis that the world is going through in the form of saving many lives and avoid unnecessary hospitalizations, with measures to remove professionals with this profile from the field of activity [15,16].

The improved understanding of how the disease is transmitted over time, more availability of PPE's and care for the most vulnerable worker populations can improve the perspective regarding the pandemic that the world is facing today [17].

Occupational risks: Statistics related to the rates of contagions and deaths of health professionals due to various causes

In a survey conducted with health professionals infected with the HIV virus, the data revealed that 20% of infections occurred in unpredictable situations, in emergency care where it was not previously known that the patients were infected, 11% of the infected professionals had no symptoms and 14% were affected even after receiving post-exposure prophylaxis, again the data is alarming and leads us to reflect on the pandemic of the new coronavirus in the sense that many patients (about 80%) do not have serious symptoms and may have their situations underestimated and the care not taken about the exposure of health professionals [18,19].

About 23% of health care workers at a hospital experienced

symptoms of influenza infection during a mild epidemic. If these data are compared to incidences of other similar diseases, it shows that only 0.15% to 0.2% of the patients had symptoms of other diseases. Regarding underreporting, 28% to 59% of influenza cases among health professionals are not notified, creating a risk to the population to be attended by these professionals [10].

In a study carried out during the H1N1 pandemic in 2009, the risk of infection of health professionals with a control group was measured, although many studies have shown no statistically evidence on the fact of being a health professional and this facilitate a contamination, corroborating with the data that we already observed about the recent pandemic, other factors must be observed, age and presence of pre-existing pathologies [14].

The Ebola outbreak that occurred in West Africa demonstrated to the world the great risk of deaths faced by the category of health professionals, there was a disproportionate concentration of deaths in that category. In May 2015, about 0.2% of Guinea's population had a defined outcome due to death because of the disease; however 1.45% of the entire category of doctors, nurses and midwives in the country had the same outcome. In Liberia and Sierra Leone, the differences are more frightening, 0.11% and 0.06% in the general population in each of the countries, against 8.07% and 6.85% of health professionals [7].

Data from the Mortality Information System (MIS) show that in the H1N1 outbreak in 2009 caused 968 deaths in Brazil, surpassed only in the year 2016, 998 deaths from the disease were reported, there is no data or research that shows the percentage of these deaths in health professionals but, if we consider that it is both a risk group and the fighting force in the face of pandemics, more protective measures must be taken so these professionals are protected and are able to carry out their task safely and effectively.

In the pandemic of the new coronavirus preliminary studies show that many health professionals were not contaminated in the hospital environment, which does not mean that there is no potential risk that they could present to patients and co-workers, in fact these results are interpreted as a result of late hospitalizations, other research shows that the rate of transmissibility of the new coronavirus is higher the more symptomatic the patients [17].

About 3,300 [19, Chinese health professionals were infected with the new coronavirus, at least 22 of which had the outcome determined by death, representing a percentage of 0.66% of infected health professionals. In Italy the numbers are similar; about 20% of health professionals who were in care were infected. The reports demonstrate that what favors the infection of healthcare teams in Italy is mainly the pressure for difficult decisions, physical and mental exhaustion [19,20].

In Spain, hospitals faced serious situations with contaminated health professionals and had to leave work because of contagions, further worsening the burden on the remaining professionals [21].

Possible motivations or not for carrying out work during periods of pandemics

Workers who are physically able to do the job may not be willing to do it. In Spain there have been widespread reports of fatigue on the part of health professionals and many professionals have asked to leave their jobs recently as a result of the new world pandemic. About 12% of nurses at a Medical Center in the city of

Pohan quit between February 29 and March 1, justifying personal reasons and overwork [6,11].

In a city in South Korea, a request for medical and nursing support was made. Only 250 doctors volunteered for the job, the team was asked to visit patients who are victims of the new coronavirus that are in quarantine, the procedures to be performed by the team are collection of samples and tests, one of the volunteers expresses his willingness to go providing care is related to the need to help the populations that need it most [21].

In the United Kingdom, a belief was identified in the population of health professionals that they had a duty to work even in the midst of the chaos installed by pandemics otherwise they would be doing something morally incorrect [6].

In a survey carried out trying to measure the risk of professionals facing the need to save lives, nurses and other professionals reported that they often used invasive measures such as resuscitation or mouth-to-mouth breathing, believing that the death of their patients was certain, therefore this fact would overcome the risk of becoming contaminated. The professional codes of ethics themselves do not define precise limits between the risk of the patient's life and the risk of contamination by health professionals when dealing with pandemic times [22,23].

In the avian flu epidemic, it was found that more than 58% of nurses considered hospital structures inadequate for the safety of professionals, this fact contributed to the fear and lack of willingness to care for infected patients [24].

Final Considerations

It is a proven fact worldwide that the preparation of health professionals through previous vaccination should be part of the pandemic preparedness plan. In the H1N1 pandemic in 2009, health education favored the numbers to have control; a possible explanation for this would be the real risk of damage to the financial sectors of the affected countries to force the development of preventive measures to prevent the spread of the disease [25,26].

The outbreak of COVID-19 is another opportunity to review the preparedness of all countries and apply important recommendations from other major public health emergencies to better protect the world against future health emergencies [16].

There is an absence of consistent research on which are the most important and definitive interventions for the health professionals' non-illness and consequently the guarantee of the front in the fight against pandemics, however several points considered in the present study must be taken into account as clarifications of professionals on contamination, statistics on contamination and mortality due to epidemic and seasonal diseases, possible motivations for carrying out the work. The development of work plans and policies to combat pandemics that follow a massive strategy that encompasses: case identification, prior vaccination, dispensing of sufficient medicines, availability of Personal Protective Equipment and a good plan for jobs, careers and salaries could guarantee the health and encouragement of professionals to perform their work safely and competently.

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