Lebanese Doctors Facing the SARS-CoV-2 Pandemic: Practical and Ethical Issues

Nicole Gebara
Saint Joseph University
Georges Dabar
Saint Joseph University of Beirut
Roland Eid
Saint Joseph University of Beirut
Fady Ghassan Haddad
Saint Joseph University of Beirut
Hampig Raphael Kourie (hampig.kourie@hotmail.com)
Saint Joseph University of Beirut https://orcid.org/0000-0002-2502-5402
Joseph Kattan
Saint Joseph University of Beirut

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Abstract

***Background**:* In the light of the COVID-19 pandemic, the role of health care providers is essential to maintain the functioning of the health care system. Physicians accept a primary ethical duty to place the wellbeing and health of their patients above their own welfares. However, does the duty to patient well-being have any limit? Two ethical concerns are debated: public health's ethical principles and medical ethics values. We aimed in this study to assess Lebanese physicians' attitudes, practice and ethical considerations when treating their patients during the COVID-19 pandemic.

***Materials and methods**:* It's a cross-sectional study conducted in March 2020 among a random sample of Lebanese physicians, using a questionnaire based mainly on a five-point Likert numerical scale to make the answers more reliable and valid. The questionnaire focused on the medical practice during the pandemic and the ethical considerations in public health and in medical practice. It also evaluates the physicians' point of view toward the management of the pandemic in Lebanon.

***Results**:* A total of 318 physicians responded, with a mean age of 40 years. Five doctors of the total were affected by the COVID-19 infection (1.6%). 51.4% of medical specialists considered themselves to be at a higher risk of contracting the infection, while 52.3% of surgeons stated that they were at a lower risk. Doctors were neutral regarding treating patients according to any priority and discontinuing the ventilation of any patient with bad prognosis. The majority of doctors disagreed regarding the respect of the patient's autonomy in refusing COVID-19 treatment with a mean score of 1.7/5. Finally, doctors expressed a neutral opinion regarding the ability of the country to manage such a pandemic with a mean score of 3.1/5.

***Conclusion**:* Although physicians recognize that they are at high risk of contracting COVID-19, they assume their responsibilities and their duty to treat, and they were neutral against any prioritization in treatment approach. However, applying the four ethical principles (autonomy, beneficence, non-maleficence and justice) may become challenging. Hence, more medical and ethical recommendations are required to guide physicians during this pandemic.

Introduction

SARS-CoV-2 outbreak is a new highly transmissible viral illness caused by a new strain of the coronavirus family (1). Since December 2019, the world has been blasted with this biological hazard that initially arose in Wuhan-China to surpass all national barriers in a matter of weeks and thereafter became a pandemic as of Mach 12th, 2020 (2). This virus spreads quicly, leading to a transcontinental lockdown overwhelming various medical systems and slowing down global economy, disturbing social and societal values. Limiting contagion among its countrymen became the priority of every health care system around the globe (3).

To achieve this goal, health care providers participation is essential to maintain the functioning of the medical system during this crisis. Society spontaneously assumes that physicians, nurses, paramedical professionals and out-of-hospital personnel will get involved spontaneously, ignoring the risk to themselves and/or their families.

When it comes to doctors being in front line during pandemics, some questions arise: How will their medical practice be affected? Should they, and will they, accept to work rather than refuse it? How will ethics affect their attitude, judgment and decision when treating their patients?

In fact, physicians accept a primary ethical duty to place the well-being and health of their patients above their own welfares (4): in 1918, the Spanish flu pandemic killed more than 600 physicians in the United States and nearly two percent of South African physicians (5). During the Ebola outbreak in 2014, hundreds of health care workers died in West Africa (6). However, does the duty to patient wellbeing have any limit?

During a pandemic, two ethical concerns are debated. On the one hand, ethical principles of public health and preventive medicine guide government and health authorities to implement adequate and efficient measures in order to ensure an optimal protection of their society and healthcare professionals (7). On the other hand, the four ethical principles of medical practice (autonomy, beneficence, non-maleficence, and justice) originally proposed by Beauchamp and Childress guide clinicians to take morally sound decisions (8,9). Nevertheless, applying these principles in a pandemic situation may become challenging, especially when treating patients and ensuring physicians' safety overlap (7).

In the light of the COVID-19 pandemic, these ethical considerations are debated worldwide according to the social considerations, health care system and facilities in each country. Lebanon is no exception. Therefore, this study aims to highlight the factors that influence the medical practice during COVID-19 pandemic in Lebanon. It assesses the ethical considerations of Lebanese physicians when treating their patients, considering their duty to provide care despite personal risks.

Materials And Methods

Study design and data collection

A cross-sectional study was conducted during one week starting 29th of March 2020 among a random sample of Lebanese physicians registered at the Lebanese Order of Physicians (LOP) in Beirut and Tripoli from all specialties.

Data were collected via an anonymous online questionnaire, available in French (Appendix 1) and English (Appendix 2) in Google Forms® format and compiled into a protected database, only accessible to the research team. A link to the questionnaire was sent via WhatsApp® since its use a very prevalent in Lebanon and preferred over the mails. In fact, the mails are not regularly updated in the LOP's database, in contrary of the phone numbers

The first part of the questionnaire enquired about sociodemographic data and characteristics of the participants. The second part focused on the medical practice during the pandemic. The third and fourth part aimed to assess the ethical considerations in public health and in medical practice respectively. The last part evaluates the physicians' point of view toward the management of the pandemic in Lebanon. Respondents were asked to answer the items of the latter three sections by indicating their level of agreement using a five-point Likert numerical scale, ranging from complete disagreement (score of zero), to complete agreement (score of 5). The advantage of this method is that people are not forced to express an either-or opinion which makes their answer more reliable and valid.

Ethical approval

The study's protocol has been approved by the ethics committee of "Hotel Dieu de France Hospital".

Statistical analysis

Continuous variables will be described by their mean and range, and categorical variables by the numbers (N) and percentages (%) of each category. All continuous variables will be analyzed as such and not categorized. Chi-2 test will be used for the comparison of categorical variables between groups, and t-test when evaluating the difference means of two independent groups. All tests will be two-tailed and considered statistically significant for $p < 0.05$. SPSS Statistics version 25.0 (IBM Corporation, New York, USA) will be used for statistical analysis.

Results

A total of 318 physicians responded to the survey. The age of participants ranged from 24 to 80 years old with a mean age of 40 years, with 173 men (54.4%) and 145 women (45.6%). Among responders, 207 practiced in Beirut (65.1%), 135 in Mount Lebanon (42.5%), 19 in the North governorate (6%), 9 in Beqaa (2.8%), 8 in the South governorate (2.5%) and 4 worked abroad (1.3%). The majority of workplaces consisted of a university hospital in 247 cases (77.7%), clinics in 92 cases (28.9%), non-university hospital in 55 cases (17.3%), dispensary in 36 cases (11.3%) and non-governmental organizations in 12 cases (3.8%).

Table 1 shows that 148 participants had a medical specialty (46.5%), 65 had a surgical specialty (20.4%), 34 were family medicine specialists (10.7%), 31 anesthesiologists (9.7%), 18 pediatricians (5.7%), 8 psychiatrists (2.5%), 7 radiologists (2.2%), 6 pathologists (1.9%) and one radiotherapist (0.3%).

Table 1: Patient characteristics

Characteristics	N, (%)
Age, mean (range) – years	40 (24-80)
Gender	
Men	173 (54.5)
Women	145 (45.6)
Region of practice	
Beirut	207 (65.1)
Mount-Lebanon	135 (42.5)
North governorate	19 (6)
Beqaa	9 (2.8)
South governorate	8 (2.5)
Abroad	4 (1.3)
Workplaces	
University hospital	247 (77.7)
Clinics	92 (28.9)
Non-university hospital	55 (17.3)
Dispensary	36 (11.3)
Non-governmental organizations	12 (3.8)
Distribution of specialties	
Medical specialty	148 (46.5)
Surgical specialty	65 (20.4)
Family medicine	34 (10.7)
Anesthesiologists	31 (9.7)
Pediatricians	18 (5.7)
Others *	22 (7)

* Others, include psychiatrists, radiologists, pathologists and radiotherapists.

Five doctors out of 318 were affected by the COVID-19 virus (1.6%), 313 were not, out of whom 27 were quarantined (8.5%) after being in contact with a COVID-19 positive cases. Out of the 5 affected physicians, 3 had a medical specialty (2 cardiologists and 1 gastroenterologist), one was a family medicine specialist, and one was a general surgeon; hence a ratio of 4:1 for infected non-surgical specialists compared to surgical specialists. Among the 27 individuals who were quarantined, 17 had a medical specialty, 3 were family medicine specialists, 3 were anesthesiologists, 2 were pediatricians and 2 were surgeons. This leads to a ratio of 4.4:1 of quarantined non-surgical specialists compared to surgical specialists.

Participants were asked about the risk of contracting the COVID-19 virus depending on their respective specialty. Figure 1 shows that of the 148 medical specialists, 76 considered themselves at an increased risk of being infected (51.4%), 36 at a lower risk of being infected (24.3%), while 36 considered that all specialties had the same transmission risk (24.3%). Similarly, 25 out of 34 family medicine specialists thought that they are at an increased risk (73.5%), 5 at a lower risk (14.7%), and 4 considered that all specialties had the same transmission risk (11.8%). In addition, 27 out of 31 anesthesiologists viewed their specialty as being at a greater risk of virus transmission compared to others (87.1%), while 3 (9.7%) and 1 (3.2%) considered it at a lower risk and at the same risk relatively to other specialties, respectively. On the other hand, 34 out of 65 surgeons considered that they were at lower risk of contracting the coronavirus (52.3%), compared to 16 who considered themselves at a higher risk (24.6%), and 15 who thought that no specialty was at an increased or decreased risk compared to others (23.1%).

Fifty-nine of responders stated that they have had to treat patients affected by the coronavirus (18.6%). Figure 2 summarizes the fears of physicians when treating COVID-19-patients. In fact, 294 out of 318 participants were worried about transmitting the virus to their family (92.5%), 231 to their patients (72.6%) and 191 feared of contracting the virus themselves (60.1%), while 12 had no fear when dealing with sick patients (3.8%).

In Lebanon, some hospitals tended, when possible, to reduce the effective of health care professionals working at the same time in a way that half the professionals are at the hospital for consecutive days; the other half being quarantined at home. We evaluated the willingness of physicians of different specialties to adopt an “on call” system during the crisis period in order to minimize the number of staff in contact with infected patients, and found that the majority were ready to adopt this strategy with a score of 4 or 5 in 91.5% of cases and 8.5% in the remaining. Similarly, the majority of responders agreed with

the disclosure of the identities of all infected patients with the intent of protecting their contacts and the society, with a score of 4 or 5 in 70.4% of cases, and 1 or 2 in 17%.

Treating patients by priority has emerged during this pandemic and was observed in countries with a high incidence of new cases and deaths, attributed to the insufficiency of medical supplies for treating all affected patients, namely the severe cases. A disparity was noted among the participants in this survey regarding this subject, with a score of 4 or 5 in around half of cases (49.1%), a score of 3 in 23.9%, and a score of 1 or 2 in 27.1% of cases. 132 out of 318 (41.5%) stated that no patient should be prioritized over another one. Among the 186 physicians who agreed that patients should be selected according to a priority order during crisis, 157 (84.4%) considered that pregnant women should be prioritized, followed by immunosuppressed patients in 137 cases (73.7%), 94 (50.5%) and 91 (48.9%) favored young and elderly individuals, respectively, and patients with chronic stable disease were considered a priority in 87 cases (46.8%).

Among the 318 participants, 163 considered that it was their duty to treat COVID-19-patients (51.3%), while 108 considered it their medical mission (34%), 26 their obligation (8.2%), and 21 as a choice they can accept or refuse (6.6%).

Since the emergence of this pandemic with a high interindividual transmission rate and a risk of hospitalization and death that increased with age (10), the scientific committee worldwide launched many studies and trials of drugs for the treatment of this disease. However, some drugs were approved locally in some countries but not by the Food and Drug Administration (FDA) or the European Medicines Agency (EMA). The majority of physicians in this study stated that they would use a molecule, even though not FDA- or EMA-approved, for the treatment of critically-ill patients, with a score of 4 or 5 in 68.6% of cases, while 24.2% of physicians were indifferent with a score of 3.

During this pandemic, the frontline departments dealing with coronavirus patients (eg. the emergency, intensive care or infectious disease departments) frequently lacked of specialists to take care of infected patients. Our study showed that the majority of doctors agreed to assist anywhere, even if it's in a department that does not fall under their specialty (score of 4 or 5 in 82.1%).

With the increasing number of affected patients, more cases will need intensive care unit (ICU) monitoring and management; hence, these units may run short of mechanical ventilators. Physicians were asked if they would disconnect a patient with a very poor prognosis on a ventilator if the latter is needed to treat another patient that is considered to be a priority, and 36.5% were found to adopt a neutral position with no agreement or disagreement regarding this statement (score of 3), while 41.5% would disconnect the patient, if applicable, with a score of 4 or 5.

With COVID-19 pandemic representing a community threat, ethical questions arise such as the autonomy of an affected patient to refuse intrahospital care when needed, knowing that he might not be compliant to quarantine. Responders disagreed with the principle of autonomy and stated that it should not be respected in this case, with a score of 1 or 2 in 82.1% of cases.

Regarding the management of this crisis in Lebanon, physicians were indifferent regarding the ability of the country to manage such a pandemic, and did not adopt a supportive or a discouraging opinion in around half of cases (score of 3 in 47.2%), while 33.7% expressed a positive opinion (score of 4 or 5). Moreover, when judging the management of the medical crisis in Lebanon, 65.4% of participants considered that the medical crisis was managed correctly with a score of 4 or 5, while 27.7% were neutral in this regard (Figure 3).

Discussion

Major emergencies are always challenging for the health care workers in terms of increased demand and risk of shortage of available resources. When the emergency is caused by a viral outbreak, these challenges are intensified for the health professionals. During the H1N1, several studies highlighted the paradoxical situation between the physicians' and nurses' duty to care for patients and the personal duty to care for themselves and their families (11). The COVID-19 pandemic is no exception to this dilemma.

To our knowledge, our study is the first one to assess the factors that influence the medical practice during COVID-19 pandemic in Lebanon and the ethical considerations when treating patients.

This cross-sectional survey enrolled 318 Lebanese physicians, including men and women of different ages and specialties, practicing in many regions and having multiple socio-economic and cultural backgrounds.According to the literature, medical doctors, like the general population, may have an exaggerated perception of their personal risk during a pandemic (4). However, during this COVID-19 pandemic, a high proportion of healthcare workers became infected with the virus, with numbers reaching 20% in Italy, making this increased risk an alarming reality rather than a perception (11).

In this perspective, when asked about the risk of contracting COVID-19, the majority of family doctors or medical specialists considered themselves at higher risk of infection. Due to the diversity of symptoms and manifestations related to this viral infection, patients may seek consultation with any type of medical specialty: family medicine, internal medicine, infectious disease, pulmonology, emergency medicine…. At the same time, anesthesiologists considered themselves to be the most at risk during work compared to other specialties, which could be related to airway exposure during intubation in the operating, or intensive care unit. This is due to the fact that the COVID-19 wasn't mandatory before the hospitalization and any patient might be asymptomatic carrier of the virus and thus, transmit the disease to the anesthesiologist. Surgeons, however, considered themselves at a lower risk of contracting the virus relatively to other specialties, since elective surgery are postponed and they are often face covered with surgical mask when interacting with patients in the operating room. and this.

In general, the risk of infectious disease is an inevitable consequence of caring for patients who may be asymptomatic carriers (20%) or who do have mild disease. Over the years and during pandemics, many types of airborne infections have been transmitted to health care workers and many lives have been lost among the medical staff. For instance, the world still remembers Carlo Urbani, the World Health Organization physician who investigated and alarmed the world over the SARS epidemic before the virus killed him in 2003 (12). With that in mind, doctors have major concerns with airborne or air droplets epidemics, but as our study shows, the vast majority of them fear spreading the virus to their families first, then to their patients, and finally to themselves. Only 3.8% of physicians were not afraid when dealing with infected patients.

Therefore, faced with these real concerns, do healthcare workers have a choice and avoid treating infected patients in the perspective of limiting their personal risk and that of their families? In this survey, more than 90% of physicians considered that treating patients with COVID-19 was not an option it was an obligation. For them, this was widely seen as a duty, then a medical mission, then an obligation. In fact, these terms are often used interchangeably, but they do not mean the same (13). The duty to treat would mean at least that during ordinary days, the physician cannot refuse to treat any patient. Under this point of view of the duty, the risk to the physician would not be a limit to take care of patients. The dilemma appears when this duty expands from everyday work to pandemic situations. In this case, the community creates a more affirmative definition of the duty and enlarges it to imply obligation and responsibility to help others that are in need. For instance, obligation is considered to be, according to the society, a moral contract to treat patients without regard to the risk to doctors' own health. However, the definition of a mission comes from the physicians' point of view because altruism is the central of any physician-patient relationship and doctors cannot but help others who are in need of their knowledge and expertise. The duty to treat is considered to be the natural consequence of a social contract between doctors and the public. This contract empowers the medical professionals because they are in charge of the medical treatments (4). So, if we accept the duty to treat, could there be limitations to this duty (14)? During past pandemics such as the Spanish flu, doctors were considered to have a "mission". They were the "heroes" whose mission was to take care of patients and save the world. No single reason should have compromised their principle of altruism (4,14). Does this mean that it is an obligation, just as the military are most at risk in wartime? Don't doctors have the right to choose which patients to treat? After lengthy debate, the American Medical Association (AMA) implemented in 2004 new wording for "Physician's Obligation in Disaster Preparedness and Response" that gives physicians the "obligation to evaluate the risks of providing care to individual patients versus the need to be available to provide care in the future" (15). However, since no personal or professional duties are ever absolute, exceptions may apply. Specific examples were listed and divided into four themes: physical health, mental health, competing personal obligations and unacceptable levels of personal risk (14) . These exceptions can be somehow used as pretexts by doctors who refuse to treat patients during pandemics. According to Dr. Orentlicher "allowing physicians to take into account the risk to their own health would open the door to pretextual denials of care to unpopular patients" (4).

Nonetheless, as is widely seen, and in line with the beneficence ethical principle, physicians and health care professionals rarely refuse to provide care during a pandemic. In our survey, the vast majority of doctors declared that they were even willing to help if they were requisitioned in the event of a lack of specialists in the main specialties dealing with the disease, such as intensive care, emergencies and infectious diseases. In addition, the majority of doctors said they were ready to adopt an "on call" system during the crisis period. However, this "on call" system should be organized to limit the spread of the disease to all health care workers, but should not let the burden fall on a small number of physicians, nor encourage some of them to opt out from their duties (4).

To prevent patient harm, and thus respect the non-maleficence ethical principle, decisions need to be based on evidence, principles, and values. Regarding treatments, contrary to what is observed in other known diseases for which drugs have been approved after thorough clinical studies and requiring the FDA and/or EMA approval for prescription, the actual pandemic and crisis state shed light on the global need for immediate treatment which prompted doctors to prescribe drugs with a possible benefit, albeit small, for treating affected patients. In the era of evidence-based medicine, decisions for treating patients infected with COVID-19 are not always supported by evidence and recommendations but by expert opinion that demonstrate an efficacy of drugs that are proven safe in the treatment of another disease or that have well known adverse events. Doctors in this investigation were in favor of such an approach. However, in the absence of randomized control trials and clear-cut evidence, these drugs are usually used as a "last resort" or in the context of clinical trials. Therefore, beneficence and non-maleficence are two overlapping principles that can be argued from different angles (7,16).

Justice is also a debatable ethical principle during pandemics. Should we treat the patients by priority? Which means, should any patients be treated before others, or to a higher extent, instead of others? In which case, who would be the priority? The people most likely to recover, the patients suffering the most or the most commendable people (17)? In fact, although no doctor wants to see a patient not receiving the best medical care, in times of pandemic, contagion means additional pressure on limited medical resources which can become saturated, and physicians may find themselves obliged to choose which patient to treat. When asked in the survey, 60% of doctors stated that patients should be treated by priority, considering pregnant women as a first priority, then immunocompromised patients followed by young patients and the elderly. Still, 40% of them declared that no patient should be prioritized over another. To objectivize this decision, clinical scoring systems are widely used to prioritize scarce medical resources during a pandemic crisis. Most systems prioritize those patients most likely to benefit from treatment. Any system employed should by analyzed for prognostic accuracy as well as for ethical acceptability and fairness. These systems help physicians to evaluate and improve prognostic judgments as to which patients are likely to benefit through survival to discharge. Prachand et al. developed a scoring system to ethically and efficiently manage resource scarcity and provider risk during the covid-19 pandemic. This score takes into consideration resource limitations, COVID-19 transmission risk to providers and patients' characteristics using a 5-point scale for each item in every category, with a maximum of 105 points. There is no cut off values but the lower the score, the better the prognosis is and the safer the procedure can be. This score describes these operations as medically necessary, time-sensitive (MeNTS) procedures (18). On another note, in this questionnaire, physicians revealed a neutral position concerning the withdrawal of mechanical ventilation from a patient with a poor prognosis if the latter is needed to treat a higher "priority" patient. Again, the occurrences of the latter term are difficult to interpret and are based on personal values, but this largely shows the impact of societal, moral, and ethical issues that doctors face and that are hardly resolved by a simple answer or in a same manner by different physicians. In the context of this debate of withholding or withdrawing of the ventilation, many clinical guidelines have been published to help doctors in their decisions. All these documents try to differentiate between futility and benefit according to different perspectives. Orlowski et al, consider that "if a treatment is clearly futile in the sense that it will not achieve its physiological objective and so offers no benefit to the patient, there is no obligation to provide the treatment" (19).

However, Snyder and Swartz doesn't limit futility to the psychological aspects and enlarge its spectrum to include the physiological aspect without giving more precision (20). Winter and Cohen11 define the physiological futility as the dysfunction of three or more organs (21). The assessment of benefit is more controversial because it is fundamentally subjective, in fact, a small physiological amelioration might seem sufficiently beneficial to the patient, but not to the physician (22). That's why it is important to understand what is considered to be benefit and from whose perspective. Amidst this vagueness and in order to take their decision, doctors can be guided by the family or the family demand, the medical recommendation, and the ethical committee of the hospital (20,23).

Autonomy is another primordial issue always addressed, especially during pandemics. The patient-physician relationship is based on full trust and the physician has access to patient's privacy, only because of his professional status. Breaking medical privacy by disclosing the identity of sick patients is known to be discordant with the ethical principles of medical practice; however, concerns about patient autonomy are a key factor that prevents disease reporting. Few ethical guidelines allow us to marginalize the privacy of patients for the greater good of the population, whereas the other majority has a complete opposite opinion. On the one hand, Canadian laws permit disclosing personal health information for public health purposes without patient approval considering that during a pandemic, public good should supersede an individual's right to privacy (24). On the other hand, the AMA and US law limits this broad exception and précises that patient privacy may be violated only where imminent harm to an identifiable victim is known (25). In the latter case, during a pandemic, infected patients' identities can be reported to public health officials only, and contact tracing enabled, at minimal cost to patient privacy. In Lebanon, laws include incoherence and are subject to abuse (26). , In our study, the majority of physicians were in favor of revealing the identity of patients to public health officials who do contact tracing in order to protect their families and communities.

Perhaps the most concerning issue raised by this paper is the willingness of physicians to reveal "the identity of patients who refuse to adhere to strict recommendations in order to protect their families and communities" (page 13, line 14). The authors claim "this is indeed in accordance with the ethical guidelines and laws that allow and require us to marginalize the privacy of patients for the greater good of the population" (p 13 line 15). This in no way represents the ethical opinion of physicians in the United States or the UK. AMA Opinion 5.05 and the US case of Tarasoff v Regents of UC, 551 P.2d 334 (1976) agree that patient privacy may be violated only where imminent harm to an identifiable victim is known. This section of the paper needs to be rewritten to indicate either (1) it is in accordance with Lebanese and perhaps other nations' customs to severely limit the privacy rights of individuals; or (2) acknowledge that this approach to patient privacy protections is discordant with those of the AMA and US law and ethics.

Finally, concerning the management of the crisis in Lebanon, physicians seem to adopt a neutral position with regard to the country's capacity to manage such a pandemic, probably because of the uncertainty of the evolution of the disease, which remains a worldwide problem. The medical staff remains ethically responsible for putting the interests and well-being of the patient first.

Conclusion

To our knowledge, this is the first study that addressed the physicians' attitudes, practice and ethical considerations when treating their patients during the COVID-19 pandemic. As shown in our study, although physicians recognize that they are at high risk of contracting COVID-19, they assume, above all, their responsibilities and their duty to treat. However, when the welfare of the patient and the physician overlap, applying the four ethical principles (autonomy, beneficence, non-maleficence and justice) may become challenging which affect their attitude, judgment and decision when treating their patients. The uncertainty surrounding a pandemic of a new virus and the lack of clear clinical ethical guidelines can somehow forces the physician to put his welfare and the community's safety above the individual patient well-being. Hence, it is important to provide medical and self-protection equipments in order to minimize the risks on physicians so they can be able to take care of infected patients during the different waves of the pandemic (4). With this said, more medical and ethical recommendations should be published to guide physicians during this pandemic to "stay and fight" (12,17,27).

Declarations

Ethical approval and consent to participate : The approval for this study was obtained by the "ethics committee of Hôtel Dieu de France Hospital"

Consent for publication: Not applicable

Availability of data and materials: The datasets generated and analyzed are not publicly available for institutional purposes but are available from the corresponding author on reasonable request.

Competing interests: The authors declare that they have no competing interests

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Authors' contribution : HRK and JK conceived and designed the study. NG, FH AND RE wrote the manuscript. All authors have read and approved the manuscript.

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Figures

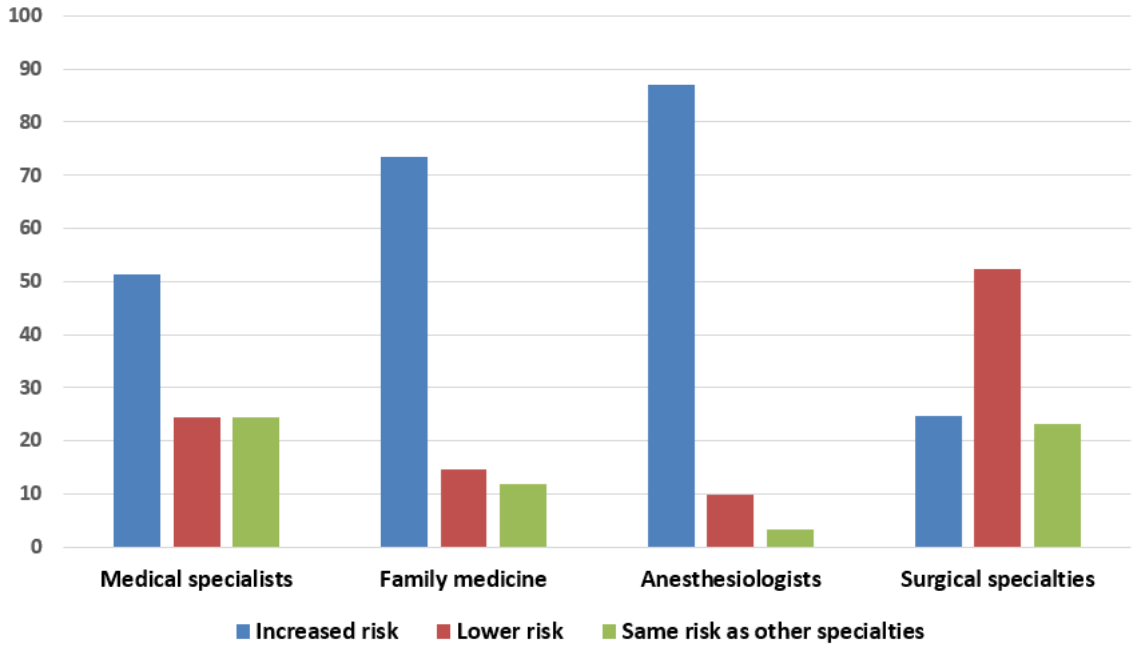
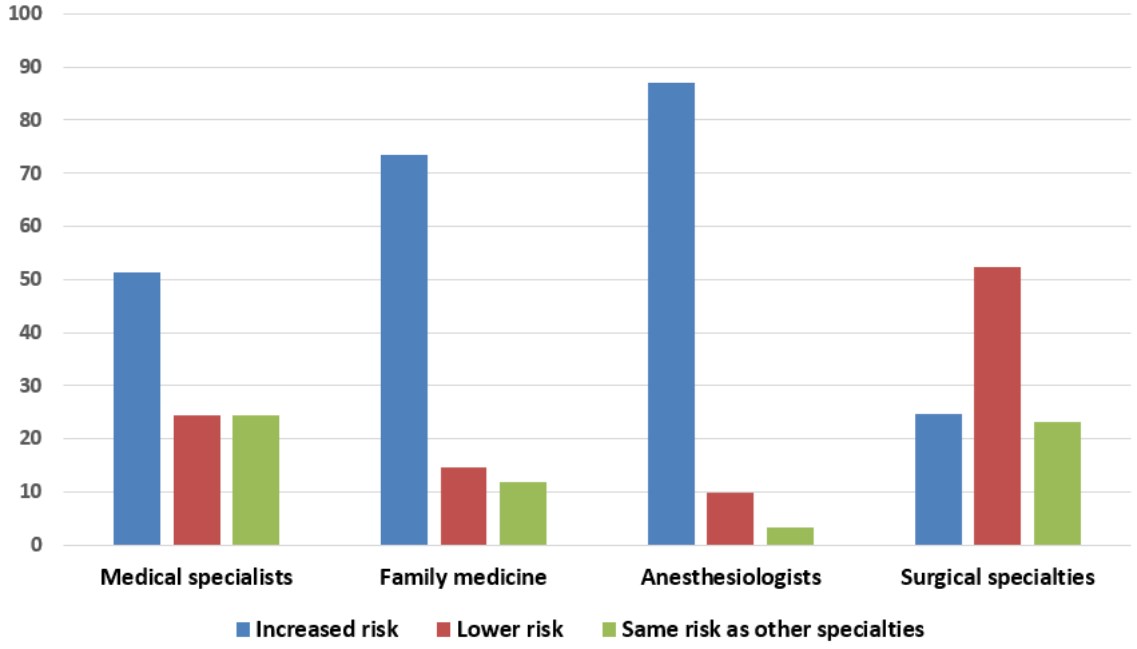


Figure 1

Comparison of the risk of virus transmission according to doctors of different specialties



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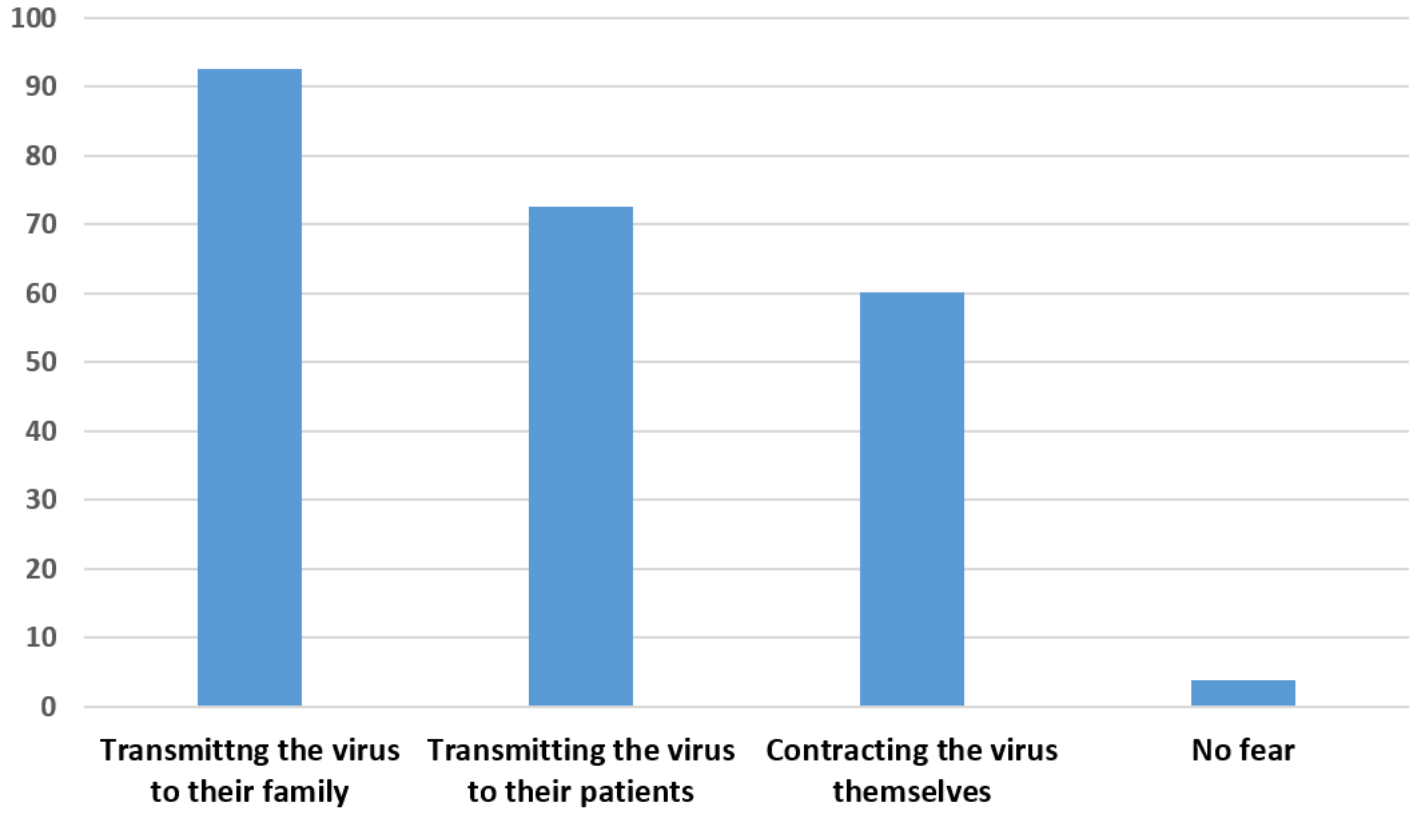
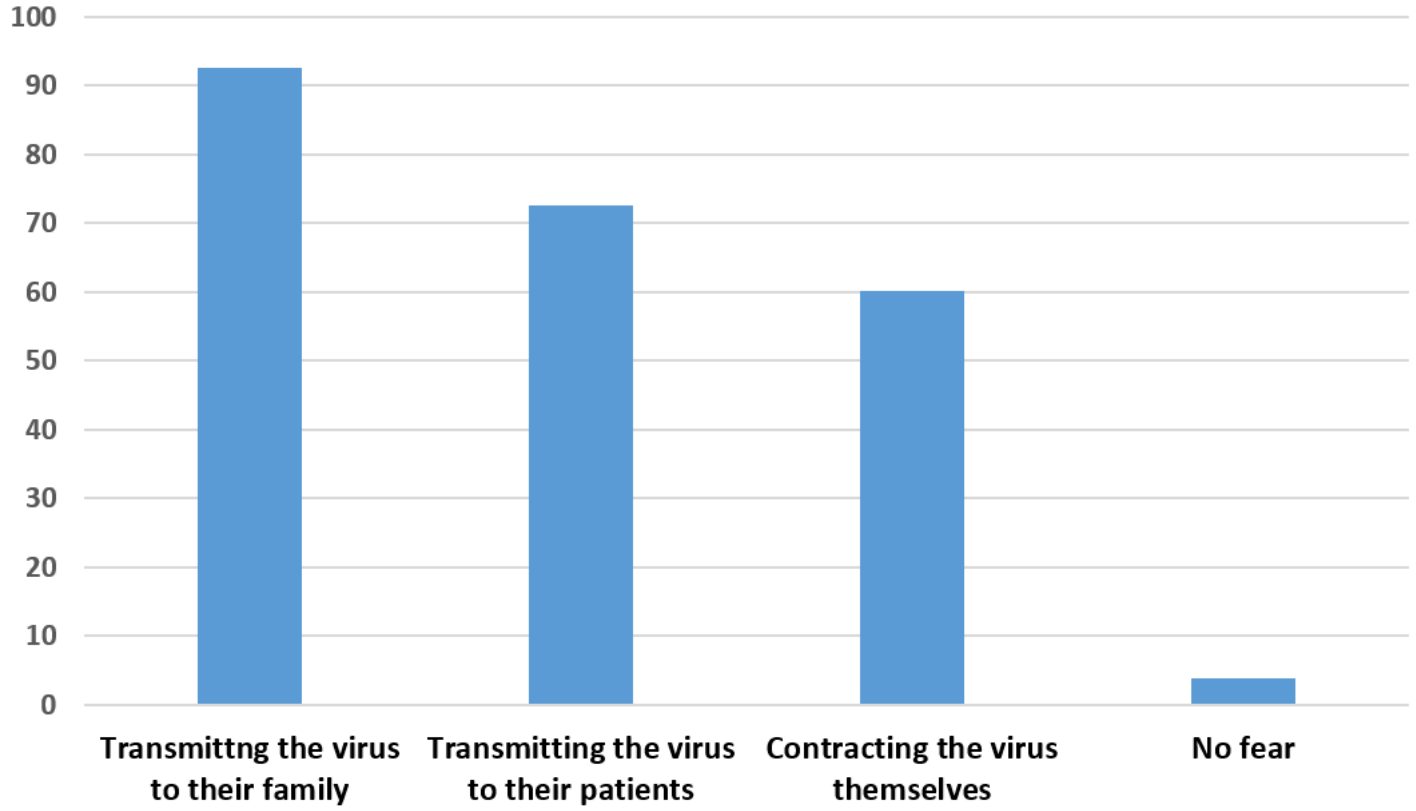


Figure 2

Fear of physicians when treating COVID-19 patients



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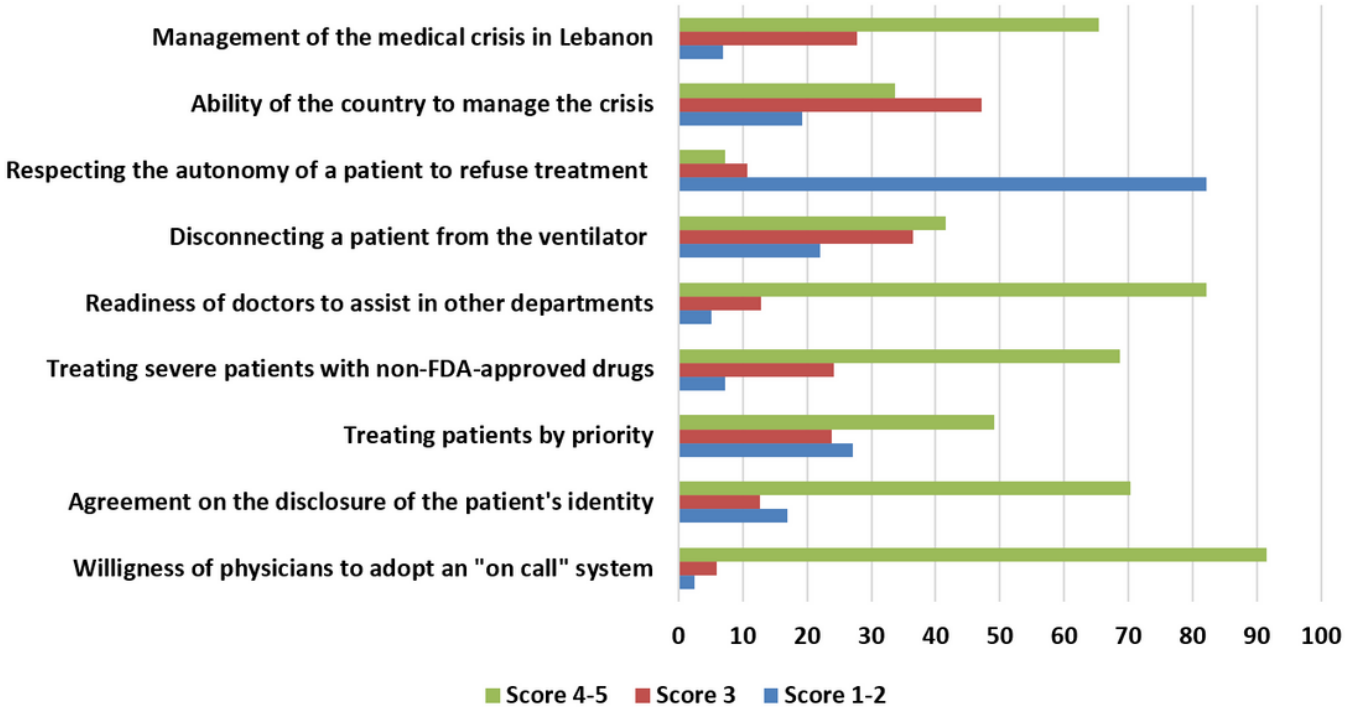
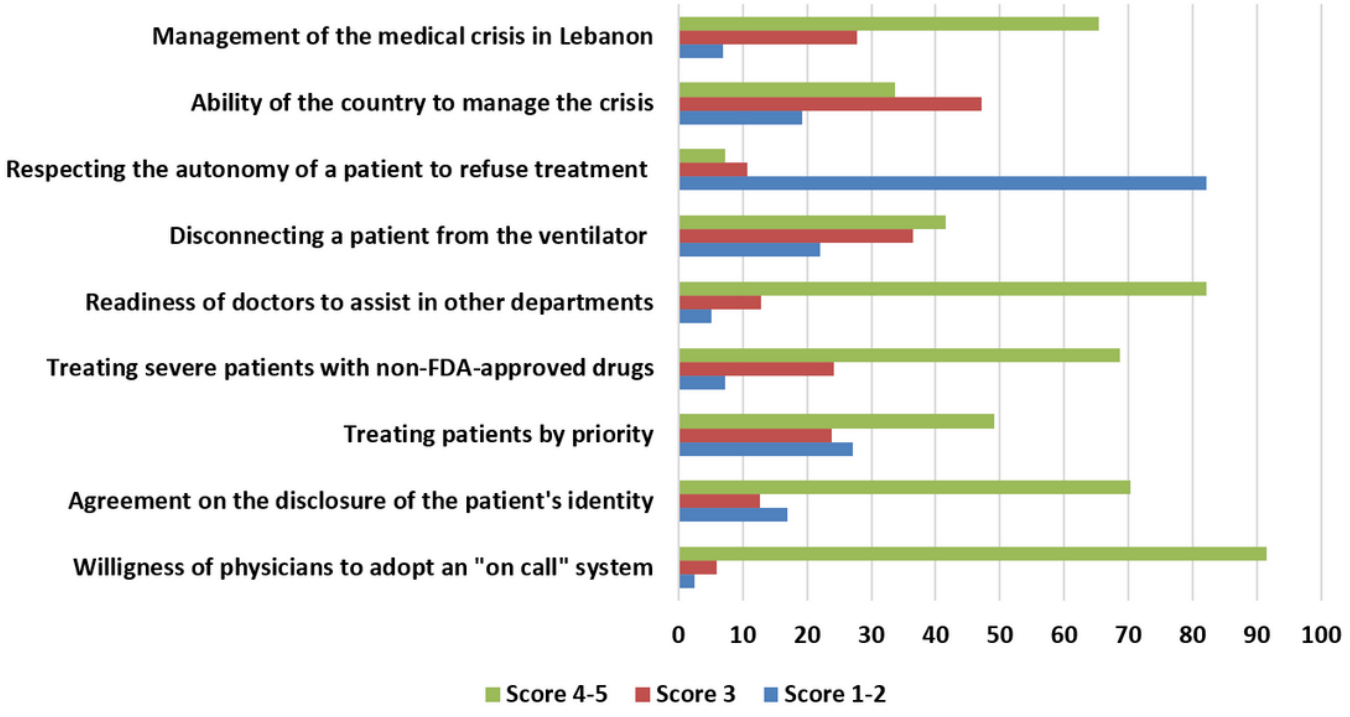


Figure 3

Percentages of responses in each category of scores



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