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The American University in Cairo
School of Global Affairs and Public Policy

**Effect of COVID-19 on the Wellbeing of Healthcare
Professionals in Public Isolation Hospitals in Egypt**

A Thesis Submitted to the

Public Policy and Administration Department

**in partial fulfillment of the requirements for the degree of Master of Public
Administration**

By

Shaimaa Mahmoud Sabbah Mohamed

Spring 2022

The American University in Cairo

School of Global Affairs and Public Policy

Department of Public Policy and Administration

Effect of COVID-19 on the Wellbeing of Healthcare Professionals in Public Isolation

Hospitals in Egypt

Shaimaa Mahmoud Sabbah Mohamed

Supervised by Professor Laila El Baradei

ABSTRACT

One of the most vulnerable groups severely hit by the COVID-19 pandemic has been the Healthcare Professionals (HCPs), especially the physicians, pharmacists, and nurses who work in public Isolation hospitals. The Egyptian medical syndicate declared the death of more than 600 physicians from February 2020 till January 2022. In the meantime, the Egyptian government has worked on different policies for relieving the negative effects of the pandemic on this vulnerable group; however, easing restrictions, no total lockdown implementation, and monitoring bureaucracy has negatively affected the wellbeing of those HCPs. The study aims to figure out recommended policies to protect HCPs' wellbeing during the current pandemic and help us be better prepared for future upcoming pandemics that we may face. Based on seventeen in-depth semi-structured interviews with a purposive sample of HCPs, occupying different positions and located in different geographical areas in Egypt, the study assesses the extent of the effect of the COVID-19 pandemic as a mass causality incident on HCPs perceived sense of wellbeing and its different dimensions, as defined by the Centers for Disease Control and Prevention (CDC) and relating them to different needs levels according to the Maslow's Hierarchy of needs for recommending policies depending on their needs. Findings show that although HCPs felt a sense of pride with their work and were somehow satisfied with their financial compensation, all other

dimensions of their well-being were compromised, including the physical, psychological, emotional, social, developmental, and work domain-related aspects. Physical, social, and economic wellbeing aspects were deteriorated due to the lack of basic needs. Furthermore, Emotional, psychological, development and activity, and domain specific satisfaction aspects were worsened because of depletion of the psychological needs. Accordingly, life satisfaction, and engaging activities and work aspects collapsed after the diminishing of the self-fulfillment needs. Finally, Egyptian government has learned a lesson from the COVID-19 pandemic and started to prepare for management of the future pandemic that we may face by issuing a new law (Law no. 152/2021) for combating pandemics and epidemics, which covers the first step of the disaster cycle management.

Keywords: Healthcare Professionals, COVID-19, Wellbeing, Centers for Diseases Control, Infection, Medical Syndicate, Ministry of Health and Population, Pandemic, Physicians, PPEs, Random Testing

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“Every life is a unique story; thanks to everyone for being part of my story and adding value to it.”

Shaimaa Mahmoud Sabbah

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List of Acronyms:

HCPs: Healthcare Professionals

MCI: Mass Casualty Incident

MOH: Minister of Health

MOHP: Ministry of Health and Population

WHO: World Health Organization

ICU: Intensive Care Unit

PPEs: Personal Protective Equipment

SDGs: Sustainable Development Goals

ILO: International Labor Organization

CDC: Centers for Disease Control and Prevention

COVID-19: Coronavirus Disease

CAPMAS: Central Agency for Public Mobilization and Statistics

CHAPTER ONE: INTRODUCTION AND BACKGROUND:

1.1. Introduction:

Ever since the first COVID-19 case was discovered in Egypt in February 2020, the most vulnerable group affected was the Healthcare Professionals (HCPs), especially those working in public hospitals, where resources are relatively limited, and protective gear is not always sufficient. Healthcare professionals are those who get in direct contact with patients and provide service for those patients (Medical Dictionary, 2021). They are responsible for maintaining patients' health, diagnosing diseases, and treating them through evidence-based medicine. They include medical doctors, pharmacists, dentists, nurses, physiotherapists, and other therapy-related professions (WHO, 2013). More than a year and a half into the pandemic, the Medical Syndicate in Egypt announced the death of more than 600 physicians as a result of COVID-19 infections (El Guindy, 2021, 26 September). The reports by the Medical Syndicate were insensitively and repeatedly contested by the Minister of Health (MOH), claiming that the actual number of physicians' fatalities was much less. According to the Minister of Health, in April 2021, only 115 physicians working in Isolation hospitals were recorded as fatalities due to contracting the virus during their work. Meanwhile, it was claimed that the remaining reported cases may have contracted the virus from their general interactions in society (Gomaa, 2021, 25 April). The Medical Syndicate had earlier called upon the government to speed up the vaccination roll-out for HCPs and be more transparent about the details of the vaccination plan (Ahram Online, 2021, 19 April). Egypt does not implement either COVID-19 mass or random testing, so the official reported figures are severely underestimated. Globally, 277,548,860 Coronavirus cases have been reported, with 5,394,345 deaths and 248,714,031 recoveries (Worldometer, December 23, 20212021).

Many countries worldwide have tried to support their health care professionals during these difficult times. Support efforts ranged between financial bonuses, mental health support, and providing them with additional benefits such as additional paid leave, childcare facilities, free transportation, and free accommodation away from their families to protect them from infection (Williams et al., 2020). However, the level and extent of support vary widely between developed and developing countries, depending mainly on the availability of resources. A report published in Eurohealth in 2020 summarized many of these measures implemented in 36 countries in Europe and Canada to support HCPs. Support ranged from mental health support through the establishment of hotlines and offering remote counseling sessions to childcare support for healthcare professionals, allowances for childcare costs, financial compensations to HCPs, free isolation accommodation to those HCPs away from their families, and free transportation access (Williams et al., 2020).

The issue is not only about fatality rates, but on a global level, the *wellbeing* of healthcare professionals, especially those who work in COVID-19 hospital wards, has been negatively affected. The healthcare professionals who work in COVID-19 wards have suffered from higher incidences of depressive symptoms and post-traumatic stress symptoms than those who work in other healthcare units (Di Tella et al., 2020). HCPs working to take care of COVID-19 infected patients were commonly reported to suffer from anxiety and fear of spreading the virus to their families (Wu et al., 2020). Additionally, the concern about the availability of protective gear, social distancing requirements, ambiguity surrounding the duration of the Covid-19 pandemic, and recurrent waves have all added to the severity of the problem (Wong et al., 2020). To further complicate the situation, it was found that poor levels of wellbeing and moderate to high levels of burnout by the HCPs may have a negative impact on patients' safety (Hall et al., 2016). Thus, it is

not only a concern for HCPs' wellbeing, but the issue is that if the wellbeing of HCPs is not well taken care of, the patients' safety may be compromised.

This study tried to fill the gap in research identifying the challenges healthcare professionals, working at Public Isolation Hospitals in Egypt, faced during the COVID-19 pandemic, and affecting their different aspects of wellbeing consequently affecting their work at the Egyptian Public Isolation Hospitals. Documentation of different governmental policies, affecting these aspects, and Ministry of Health policy responses during the period from the beginning of the pandemic i.e., from February 2020 till the end of the study i.e., January 2022 to display a realistic picture for what this "White Army" suffered; besides, interviewing different specialties of HCPs working at different public isolation hospitals during this specified period. Finally, concluding the best recommendations to be implemented for making their lives at the Egyptian public isolation hospitals better during the pandemic.

1.2. Background: Egyptian Context:

On 11 March 2020, the WHO Director announced the COVID-19 to be a pandemic: “We have therefore made the assessment that COVID-19 can be characterized as a pandemic” (WHO Director, 2020). This was stated during his media briefing on COVID-19 after numbers had reached more than 118,000 infected cases and 4291 deaths worldwide, and the pandemic had spread over 114 countries (WHO Director, 2020). In Egypt, on 14 March 2020, the Minister of Health and Population issued a decree, number 145 for the year 2020, to add COVID-19 to the first section of the contagious diseases table for the law number 137 for the year 1958 and to deal with it same as other infectious diseases, and this has been effective since 2 April 2020.

1.2.1. Isolation Hospitals:

Ever since the start of the pandemic in Egypt, many public hospitals were converted to isolation hospitals, and the numbers increased over time. On 17 February 2020, the Egyptian Ministry of Health and Population (MOHP) started by converting Al-Negila public hospital in Marsa Matrouh, one of Egypt’s remote governorates, to be the first Isolation hospital in Egypt to receive COVID-19 patients, with a capacity of 52 Intensive Care Unit (ICU) beds and 49 ventilators (Nafady, 2020, 13 June). Next, the Ministry of Health and Population converted Abo-Khalifa hospital in Ismailia governorate to an Isolation hospital; the hospital had a total capacity of 127 beds (Falah, 2020, 2 June). Right after, in May 2020, a third isolation hospital was equipped and prepared to receive COVID-19 patients, this time in Alexandria’s University Dorms (Ramadan, 2020, 4 May). Over time, the number of Isolation hospitals and wards increased exponentially, reaching 30 Isolation hospitals in December 2020 in Cairo only (Abdel Salam, 2020, 20 Dec.), and capacity alternated with the experienced peaks and drops of the pandemic.

1.2.2. No Random Testing:

The Egyptian government decided from the beginning that it was not going to conduct any random testing for Egyptians. Only those citizens who went to the public hospitals and were admitted were recorded and reported. This meant that the reported COVID-19 cases were an underestimation of the actual cases and that there was a possible overestimation of the number of related fatalities (Hassany et al., 2020).

This underestimation of the actual number of cases caused a conflict between the medical syndicate and the Egyptian Ministry of Health and Population. They differed in reporting the exact number of cases of the medical doctors who died because of getting infected with COVID-19. On the 3rd of May 20, 2021, the Medical Syndicate had announced the death of 500 physicians with Coronavirus; however, the Egyptian Minister of health had only declared the death of 115 physicians with Coronavirus infection and stated that others had gotten the infection from what she named "Community Infection" and not due to their work at isolation, triage, or sorting hospitals (Egyptian Initiative for Personal Rights, 2021). The Egyptian Initiative for Personal Rights described the Minister of Health's declaration as 'inaccurate.' From their perspective, the numbers were lacking. The numbers only covered those working at isolation hospitals and excluded those working at other hospitals dealing with COVID-19 patients, like Chest Hospitals and Fever hospitals. They also criticized the Ministry's announcement that the pandemic had reached the community infection level, and it is now difficult to identify the source of infection (2021).

However, a different perspective on the recording of numbers of COVID-19 infected physicians was provided by a health policy consultant interviewed by the researcher on November 28th, 2021, at 6 PM (Personal, Interview, 2021). The health policy consultant explained that the Minister of Health's declaration of this number is an example of "Monitoring Bureaucracy." He clarified this terminology by mentioning that declaring an official statement with COVID-19

infections and deaths should be based only on officially recorded numbers. He further illustrated by saying that if we have about 100 COVID-19 patients, about 80 of them suffer from mild or asymptomatic disease, they will not be counted, as they will not carry out PCR tests or will not carry out the tests in the Central Labs of the Ministry. Twenty cases will remain, about 15 got moderate conditions, and almost only 5 out of the 20 need to be isolated. Not all the five recommended for isolation actually end up being isolated. Some go to public isolation hospitals; some go to private, or military, or other hospitals. Only the ones admitted to public isolation hospitals are the ones counted and recorded. Thus, about 2-3 out of the 100 infected COVID-19 patients get counted, registered, and declared. This also applies while counting, recording, and reporting the deaths of COVID-19 cases. Thus, we just need to know how the numbers were counted and recorded.

1.2.3. Policies for Combatting the Pandemic:

A number of policies were formulated and pursued by the Egyptian government in its effort to combat COVID-19 and limit its spread. As a first step to combat this highly transmissible virus, the prime minister released a decree for suspending international aviation in all Egyptian Airports on March 16th, 2020, to be executed from March 19th, 2020, till March 31st, 2020 (Decree no. 718/ 2020). On 19 March 2020, the Prime Minister imposed a curfew from 7 pm to 6 am that continued until 31 March 2020. Malls, shops, restaurants, and coffee shops had to shut down, but exceptions were given for delivery services, supermarkets, and pharmacies (Decree no. 739/2020). Besides, imposing fines reaching EGP 4000 were imposed on those who violated the curfew. Schools and universities were closed and suspended (Decree no. 717/2020). More than EGP 1 billion was allocated to hospitals to provide them with protective gear (Ahram Online, 2020). The cabinet issued another decree on 15 April 2020 to control the prices of some products used in

combating COVID-19, such as alcohol with 70% concentration, surgical masks, and gloves. Strict fines were imposed on those who violated the price control decree, reaching EGP 2 million and/or imprisonment (Decree no. 17/2020).

Following these preliminary decrees and policy interventions, the Egyptian Ministry of Health started paying attention to the psychological welfare of HCPs working at isolation hospitals in an attempt to prevent any physical or mental health problems that they may face due to the curfew and isolation; and to alleviate any fear and/or anxiety they may suffer from in case they got infected by COVID-19. A number of policy interventions, decrees, and laws were issued with the aim of positively affecting HCPs' wellbeing. This included the establishment of two hotlines to respond to any queries related to Covid-19, which were managed by a fleet of 150 mental health specialists (Ahram Online, 2020). Moreover, Law no. 184/ 2020 was issued on 5 September 2020, modifying the earlier law no. 14/ 2014 regulating HCPs affairs and stipulating the development of a risk compensation fund for HCPs (Law no. 184/2020).

Unfortunately, other policies pursued by the Egyptian government ended up having a negative impact on the wellbeing of HCPs. Most importantly, the fact that Egypt did not implement a total lockdown policy, as other countries did, led to an increase in the number of confirmed cases and fatalities. The justification given by the Minister of Health and Population, Hala Zayed, for not implementing a total lock-down was that we have to take into consideration the socio-economic conditions and not base our decisions only on the infection rates (Cairo Review, 2020). Consequently, modifying the curfew hours and easing restrictions according to the Prime Minister's decree no. 1469 for the year 2020, on July 25th, 2020, was for the purpose of ensuring the continued smooth operation of national economic activities. However, hospitals were not supplied with sufficient PPEs. Despite the Minister of Health and Population's assertions that huge

financial allocations were made to the health sector over the first year of the pandemic, amounting to 5-6 billion EGP (Cairo Review, 2020), yet statements by the Medical Syndicate revealed otherwise. The Egyptian public hospitals lacked PPEs, and there was a shortage in the number of needed beds to accommodate infected HCPs, and this was the main reason for the near-collapse of the system at one point in time (BBC, 2020). On 26 May 2020, the Medical Syndicate announced that 19 doctors had died from Covid-19 infections and that more than 350 others had contracted the virus (BBC, 2020). In response to these allegations, the Ministry of Health tried to rectify the situation by deciding to assign a 20-bed capacity floor in every hospital for the treatment of the infected HCPs (BBC,2020).

1.2.4. Deteriorating Conditions:

On 5 May 2020, the president of the Egyptian medical syndicate and the Cairo medical syndicate sent a letter to the Prime Minister Mostafa Madbouly calling for a “Hit and Run” policy to combat the COVID-19 pandemic by applying a total lockdown for two weeks. However, no response was received from Dr. Madbouly (Egyptian Streets, 2020). An examination of the Government of Egypt’s social media communication strategies during the pandemic concluded that, although the government did well in informing and alerting the citizens about the threat of the pandemic, there was very little transparency about the actual numbers of infected cases (El Baradei et al., 2021). What exacerbated the situation and alarmed the medical syndicate the most was that the ratio of physicians per capita in Egypt was relatively low compared to other countries in the MENA region (WHO, 2018). There were about 445,000 physicians in Egypt, with a ratio of 5 doctors per 10,000 citizens, compared to 26 physicians for every 10,000 citizens in Saudi Arabia, and 23 in Jordan, 17 in Turkey, and 7 in Iraq and Morocco (WHO, 2018). This placed Egypt at a comparatively low level in the region as regards the number of physicians available per citizen

(Nature Middle East, 2020). According to the Sustainable Development Goals (SDGs), the optimum ratio for achieving the health and wellbeing goal is about 4.45 skilled health workers (physicians, nurses, and midwives) for 1000 citizens, so Egypt is way below that SDG threshold (WHO, 2016).

Ever since the declaration of the start of the pandemic in Egypt, providing protection to the relatively scarce medical staff, at least by supporting the frontlines with the proper PPEs, alcohol, and masks, was not well implemented, and applied. The Egyptian Ministry of Health and Population was blamed, by many members of the medical profession, for being one of the first countries, which provided medical aid to support other countries, including Italy, China, and the USA, which were the first countries to receive medical aid from Egypt in combating the pandemic (Ali, 2021, February 10). The external medical aid provided by Egypt to other countries took place simultaneously with a reported deficiency in the supply of PPEs, alcohol, and masks within public hospitals in Egypt, and the problem was announced by different medical teams at different various hospitals. Many Healthcare professionals were buying protective equipment with their own money due to the shortage of this protective equipment in the hospitals (The Guardian, 2020). Moreover, these shortages lead to a terrific increase in the price of protective gear for both the medical staff and the public (Morsy, 2020, February 13).

Not only did the Ministry of Health disregard the warnings and callings from the medical syndicates, but on June 27th, 2020, the government decided to further ease COVID-19 restriction policies (Library of Congress, 2020). At that point, on 22 June 2020, the total number of confirmed cases had reached 10,165 cases, and the total number of deaths was 602 (WHO, 2020). All these

actions and policies had a potentially negative impact on the overall health and wellbeing of HCPs in Egypt.

1.3. Research Problem:

The Egyptian healthcare system suffers from many problems, making it relatively fragile in its fight against the COVID-19 pandemic “The effectiveness of Egypt’s response was impacted by the limited preparedness of its health infrastructure to deal with increased cases” (Policy and Institutional Responses to COVID-19 in the Middle East and North Africa: Egypt, 2021). Well-being is essential for healthcare professionals, and this is especially important during a pandemic, Hall et al. 2016 have stated that poor wellbeing for healthcare professionals is associated with more medical errors. We need to protect the healthcare professionals in the frontlines from acquiring the infection and enable them to fight their battle. Therefore, this research is carried out for the purpose of carrying out an in-depth analysis of how the pandemic may affect HCPs’ wellbeing, a matter that may not only have a direct bearing on their own safety but also on patients’ safety.

1.4. Research Objectives:

Many studies developed over the past two years about the impact of Covid-19 on HCPs, very little was written about the Egyptian context. Moreover, what was published about the impact of the COVID-19 pandemic and HCPs in Egypt was mostly tackled from a medical perspective. The current research is hence filling a gap in the literature by tackling the issue of HCPs wellbeing from a comprehensive perspective, examining all its different dimensions, not only the physical or health-related, and implementing a qualitative study based on in-depth interviews with the HCPs

in Public Isolation hospitals in various Egyptian governorates. Protection of the frontlines and their wellbeing is crucial during a pandemic for better healthcare service to be delivered with higher safety for both patients and HCPs. The study aims to figure out recommended policies to protect HCPs' wellbeing during the current pandemic and help us be better prepared for future upcoming pandemics that we may face.

1.5. Main Research Question and Specific Research Question:

1.5.1. Main Research Question:

- How does the COVID-19 pandemic affect the Wellbeing of Healthcare Professionals working in Public Isolation Hospitals in Egypt since the discovery of the first COVID-19 case in Egypt in February 2020 till January 2022?

1.5.2. Specific Research Questions:

- What policies were pursued by the Egyptian government in its fight against the COVID-19 pandemic?
- What are best practices internationally in ensuring the wellbeing of HCPs during the pandemic?
- How do HCPs in public isolation hospitals perceive the various dimensions of wellbeing?
- What are the main challenges faced by HCPs working in public Isolation hospitals in Egypt?
- What are suggested public policies that can be implemented to help improve the wellbeing of HCPs in public hospitals in Egypt?

1.6. Research Outline:

This research is divided into five chapters. Starting with chapter one, which gives a brief introduction about the topic; besides, the Egyptian context and background presenting the isolation hospitals, the random testing, the policies of combating the pandemic carried by the Egyptian government, and the conditions getting deteriorated. Chapter two focuses on presenting COVID-19 as a Mass Casualty Incident and the impact of this disaster on HCPs, the causes of affection of HCPs' wellbeing with the best practices done at different countries for combating the pandemic,

and the policy recommendations by different international organizations and researchers. Chapter three presents the conceptual framework, the perception, and conceptualization of the topic by the researcher through defining the different aspects of wellbeing and relating it to Maslow's hierarchy of needs. Chapter four includes the field results and analysis of the in-depth interview findings and the recommendations of different HCPs on the way forward. Finally, chapter five consists of the conclusion and policy recommendations for alleviating the impact of the COVID-19 on HCPs.

CHAPTER TWO: LITERATURE REVIEW

The researcher worked on checking different electronic databases of peer reviewed articles, books, and reports, for the purpose of getting a clear understanding of the impact of the pandemic on the different aspects of the wellbeing of healthcare professionals, who have worked in different isolation hospitals all over the world. She started by searching for studies tackling the emergence of the COVID-19 pandemic and how it can be well managed for the better wellbeing of healthcare workers. Next, she tried to get an informative definition of wellbeing and its different aspects. After that, the search focused on identifying the impacts of the pandemic on those healthcare workers and the different causes of deterioration of their wellbeing, and the results of the deterioration of their wellbeing on their safety and/ or patient safety. Moreover, the researcher continued with exploring the best practices for combating the pandemic and investigating different policy recommendations. It is noteworthy that the main bulk of the material reviewed was published during the pandemic in 2020 and 2021.

The themes depend on the definition of wellbeing and the CDCs' wellbeing aspects. Each aspect is conceptualized as a theme; therefore, the themes are Physical wellbeing, Economic wellbeing, social wellbeing, Development and activity, Emotional wellbeing, Psychological wellbeing, Life satisfaction, Domain-specific satisfaction, Engaging activities and work. Under these themes, there are subthemes including defining wellbeing from HCPs point of view, relating these different aspects of wellbeing to the proposed level of needs on Maslow's hierarchy of needs, finally recommending policies depending on HCPs needs and aspects of wellbeing.

2.1. Mass Casualty Incident:

COVID-19 was a typical Mass Casualty Incident (MCI) that needed to be managed by the disaster cycle management steps. According to the American College of Emergency Physicians, MCI is defined as the situation: “when the destructive effects of natural or man-made forces overwhelm the ability of a given area or community to meet the demand for health care” (Coccolini et al., 2020). Coccolini et al. (2020) have mentioned different characteristics of MCI: it affects the community's everyday life, the capacity of the community to manage it effectively, and assistance is always needed to cope with this MCI or disaster. Disaster cycle management involves Mitigation, Planning, Response, and Recovery. The mitigation phase involves reducing the disaster's effects before it happens through proper and planned measures. The planning phase involves being up to date in continuous practicing and exercising for putting general plans. The response phase is to react and deal with the disaster effectively. Finally, the recovery phase focuses on the management of the affected community, relieving stress and other mental health problems, and working to improve the process during future pandemics.

All countries have started from the third step, the response (Coccolini et al, 2020), which was mainly a reactive one, not a proactive one. The most affected population were the healthcare professionals with long working hours, shortages of PPEs, fear of infection, and missing the mitigation and planning steps for managing this disaster have affected their well-being negatively.

2.2. Impact of COVID-19 on HCPs:

Academics and researchers have been active during the pandemic. Accordingly, there is a good number of published studies dealing with the impact of COVID-19 on HCPs in different parts of the world. Different research approaches and different methodologies were utilized.

Adopting a cross-sectional approach, a study focusing on the impact of COVID-19 on forty HCPs who contracted the virus, while working in a tertiary healthcare facility designated for treating COVID-19 patients in India, reported that the HCPs suffered from “anxiety, fear, anger, irritability, and insomnia”, and that about 15% of HCPs surveyed had considered leaving their jobs due to the fear of infection and the fear of infecting their loved ones (Dabholkar et al, 2020). Another study by Ivbijaro et al. (2020) utilized a comparative approach in surveying participants from seventeen countries with the aim of assessing the impact of COVID-19 on patients suffering from mental problems and indirectly evaluated the effect of the pandemic on their Healthcare providers, revealing the great fear and anxiety experienced by the HCPs, especially of passing on the viral infection to their families and friends. Others, like Bajo et al (2021) utilized quantitative methods and modeling to check the impact of Covid-19 on the mental health of HCPs, and through a sample of 232 HCPs working directly with Covid-19 patients in Spain, reported that HCPS were experiencing high levels of anxiety and low levels of wellbeing indicators and that the availability of PPEs to the HCPs helped moderate their anxiety levels.

Scholars also adopted various entry points in researching the impact of COVID-19 on HCPs. For example, a study by Mahajan & Sharma (2020) zoomed in on how radiologists responsible for dealing with COVID-19 patients in India are affected and gave some guidelines for how this specific group of HCPs should use PPEs, sanitize equipment, and avoid manual handling of forms to avoid getting infected. Another study by Elbarbary et al. (2020) focused on HCPs dealing with pediatric diabetes during COVID-19, implemented surveys in 75 countries, including Egypt, checked HCPs perceptions, and showed how HCPs used telemedicine as the main adaptation strategy. Other studies, like that by Poonian et al (2020), implemented in Australia,

went right to the point and presented a plan for maintaining the wellbeing of HCPs working in the Emergency care unit during the pandemic.

2.3. Factors behind the negative effect of COVID-19 on HCPs:

Wellbeing is defined as “a state of being where all members of a community have economic security; are respected, valued and have personal worth; feel connected to those around them; are able to access necessary resources, and are able to participate in the decision-making process affecting them” (Marshall et al., 1995). Different researchers have related the negative impacts of COVID-19 to not fulfilling the physiological needs and/ or the psychological needs, which in turn affects the psychological and mental wellbeing of healthcare professionals during the COVID-19. Zaka et al. have reported four significant issues related to different needs that triggered HCPs to ask for psychological support. The first is their fear of infection on their families and being away from them (2020). The second is to be able to manage COVID-19 patients suffering from anxiety and fear, and the third one is the psychological impact of COVID-19 on HCPs, finally, there are the high mortality and morbidity rates of the COVID-19 virus, which lead to burnout and stress of these HCPs (Zaka et al., 2020). Another study identified how the basic needs of nurses had been negatively impacted during the pandemic. This study has stated how meeting the needs of Maslow's hierarchy helped in supporting the healthcare professionals during the COVID-19 pandemic (Hyre-Kwan et al., 2021).

Many studies carried out during the COVID-19 pandemic have highlighted the causes and manifestations of deterioration of HCPs' wellbeing during the pandemic. One alarming study by Jahan et al. (2021) delved into the reasons behind suicides committed by HCPs who got infected with COVID-19, as reported in the media on a global level, and identified fear of COVID-19,

work-load stress, and pre-existing medical conditions to be amongst the factors leading to suicide. Less shocking studies, such as that by Hennein et al. (2021), focused on categorizing the socio-ecological predictors of mental health outcomes among frontline workers; and using quantitative analysis identified social support as an effective protective measure against mental health problems under examination. On the other hand, younger age, female gender, and preexisting mental health conditions were identified as individual risk factors for the mental health problems, while institutional-level factors, peers', and supervisors' support, were found effective in decreasing the mental health outcomes (Hennein, 2021).

To deliver service with a high patient safety system, we should work to ensure HCP's wellbeing. Once HCPs' wellbeing is affected, either their mental or physical health is concerned, which in turn affects their availability at work. In a world suffering from a scarcity of HCPs, and in the time of a pandemic, and where HCPs are considered the central protective shield against the incoming hazard, the mental health of HCPs is of prime importance, or else patients themselves would be negatively impacted (Bennet P. et al., 2020). The literature has discussed this point and stated the directly proportional relationship between poor HCPs' wellbeing and patient safety. The qualitative study by Bennet et al. (2020), highlighted how the pandemic led to the infection of HCPs and made them incapable of working and taking care of patients. Another systematic review (Hall et al., 2016) indicated the relationship between healthcare staff wellbeing, burnout, and patient safety.

2.4. Best Practices for combating the Pandemic:

Countries all over the world were not prepared for receiving such a pandemic. They have worked on different policies to combat and overcome the pandemic and decrease its negative

impacts on the healthcare system and HCPs to be able to face this monster. The Chinese government worked on implementing effective, resilient policies to combat the pandemic compared to those implemented in Egypt. This was mainly due to the higher human-human transmissibility of COVID-19 compared to other viruses, as within three months, the confirmed cases have reached 1, 133, 758 with 62, 784 deaths (WHO, 2019).

The first step the Chinese government started with was to strengthen the epidemic response capacity by preventing further infections. This was done by tracing the origin of the outbreak and closure of the sourced market; besides, identifying the virus for developing the diagnostic kits and implementing different preventive measures. The second step was to work on large-scale surveillance and case identification by implementing large-scale follow-up and screening for cases and contacts; besides, a high technology tracking system. The third one was Social distancing and lockdown with a large-scale quarantine, suspending all activities, and in turn, affecting the economy badly. The national reporting system was applied as the fourth measure to combat the pandemic, which helped in generating epidemic curves to detect the epicentral areas requiring further steps. Building a hospital within ten days to relieve the burden on the healthcare system in China was an important lesson to be learned in crisis management as part of healthcare facilities and medical team preparations in China (AlTakarli, 2020). These policies help greatly in decreasing the negative impact of COVID-19 on HCP's wellbeing during the pandemic. Finally, the situation improved with reducing the numbers of infected patients after months from thousands to tens reaching zero during the period of 19th- 22nd March 2020; besides, a 95% recovery rate. These all encouraged the Chinese government to release the lockdown policies and restart the economy; moreover, supporting other countries suffering from this pandemic like Italy, and the USA (AlTarakli, 2020).

A Cross Country Analysis carried out by B. Maier et al. (2020) found that many other Countries have worked on expanding the health workforce as a crucial step to be able to combat the pandemic; however, they did not consider HCPs wellbeing or mental health. About 17 countries have implemented shifting from part-time to full-time work hours, in addition, working more hours and prohibiting leave of absence. These policies were applied here in Egypt as well to overcome the shortage of HCPs as compared to other countries in the region.

Other countries have worked on recruiting nursing and medical students to join the workforce and support the white army. Ireland, Italy, the UK, and Germany have recalled retired HCPs to support the healthcare system. Moreover, Italy, the UK, and Germany have redeployed HCPs from the private sector and army; besides, asking for volunteers to support HCPs in different non-medical procedures as data inputting, tracing, and testing services (B. Maier et al, 2020). Thus, we see that different countries tried to deal with the pandemic in different ways and implemented a variety of measures in their attempt at alleviating the impact of the pandemic on HCPs.

2.5. Policy Recommendations:

Reviewed literature did not stop emphasizing the pandemic's negative impact on HCPs, but also provided advice and recommendations for ensuring HCPs' safety and well-being during the pandemic. The International Labor Organization (ILO) recommended some solutions for the promotion of workers' wellbeing through effective leadership, effective communication with top management, continuous development, and training (ILO, 2021). The same three variables: leadership, effective communication, and peer support, were identified among the main recommendations, which have a positive effect on the frontlines' wellbeing during the pandemic

by Poniaan et al. (2020). Additionally, having clearly defined and announced guidelines and governmental policies for managing the pandemic were perceived as vital (Hennein et al, 2021). Poniaan et al.'s study (2020) listed a number of clear policies to overcome and prevent the negative impacts of the COVID-19 on HCPs. These policies covered: leadership and communication, physical safety needs, safe rest area, training and education, peer support, and wellbeing drop-in sessions (Poniaan et al., 2020). The study by Dabholkar et al. (2020) added to the list of recommended protective and preventive policies the following: staff support, proper planning, availability of personal protective equipment, provision of safe non-clinical rest areas with proper social distancing, rotation among healthcare professionals for the lower and higher stress work areas, continuous training and education, training peers to provide support, organizing sessions for elevating wellbeing and maintaining resilience. Finally, the implementation of telemedicine and mental health care for HCPs have proven effective in positively affecting HCPs' wellbeing (Dabholkar et al., 2020).

Finally, strategies to overcome these negative impacts were categorized into two main types: the individual strategies covering: exercise, connecting with families, and self-care (Dabholkar et al., 2020), and system-based strategies covering the provision of clear guidelines for managing and combating the pandemic, appropriate working hours and shifts, paid leave for COVID-19 infection, sufficient PPEs and provision of accurate information about the pandemic (Poniaan et al., 2020; Wang et al., 2020).

The COVID-19 pandemic is very new to the world at large. Although there is a relative abundance of literature that emerged over a concise time duration discussing various aspects of the pandemic, yet still very few studies were identified that dealt with the impact of COVID-19 on HCPs in Egypt. In one of the studies reviewed, Egypt was one amongst 75 other countries

surveyed, and the focus was explicitly on pediatric diabetes (El Barbary, 2020). Another study focused on the mental health of the HCPs working in isolation hospitals in Egypt through an online survey and a snowball sampling technique (Youssef et al, 2020). A very recent policy paper was recently developed by Ghannam & Sebae in 2021 that through a desk research, tried to examine the impact of the pandemic on the new health insurance system being piloted in Egypt, and in doing so, listed among its recommendations the need for better infection control in health facilities in general. Accordingly, there is still a need for more fieldwork to investigate how the COVID-19 pandemic has affected the wellbeing of HCPs in Egypt and what policies can be pursued to alleviate any resulting negative impacts. The current study aims at filling this identified gap.

CHAPTER THREE: CONCEPTUAL FRAMEWORK AND METHODOLOGY:

3.1. Conceptual Framework:

3.1.1 Definition of Wellbeing:

Well-being has been discussed at length in the literature and defined in many different ways. Definitions varied in terms of scope, focus, context, and level of detail. One simple definition for workers' well-being is related mainly to their safety and the level of protection for their health while on the job (Schulte et al, 2015). Other more sophisticated definitions tried to develop typologies for wellbeing. For example, some scholars classified wellbeing into three main types: objective, subjective, and composite wellbeing. Objective wellbeing focuses on tangible aspects such as employment, job opportunity, income, health, and basic survival. Subjective wellbeing focuses on less tangible issues, such as employees' perceptions, feelings, and emotions. Meanwhile, composite wellbeing, according to the Gallup-Healthways Index, compiles both tangible and intangible variables and tries to measure different wellbeing aspects related to physical health, emotional health, work environment, life evaluation, and access to basic goods and services (Schulte et al., 2015; Xing and Chu, 2011; Harter JK, 2003).

In association with healthcare workers, many definitions, again with various levels of sophistication, were presented. Some studies, like that by O'Dowd et al (2018), adopted a narrow perspective through focusing on their understanding of physicians' wellbeing on the degree of psychological resilience, as defined by the ability of physicians to cope with job stressors. Teoh et al (2021) described positive wellbeing for HCPs as that associated with acceptable degrees of work engagement, job satisfaction, and motivation. Meanwhile, specific measures that tried to assess the wellbeing of healthcare professionals looked into criteria like physical functioning, bodily pain,

general health perceptions, the impact of individuals' physical and emotional health on the ability to perform work and meet social obligations, plus mental health and vitality (Soares & Chan, 2016). Some features of well-being on which there is an agreement have been listed as having positive emotions like happiness or contentment, not being depressed or anxious, being satisfied with life, feeling fulfilled, and being productive (CDC, n.d.).

3.1.2 Aspects of Wellbeing according to CDC:

Wellbeing has also been perceived as an outcome that is achieved after fulfilling and satisfying different aspects required for physical and mental health. According to the CDC, well-being is known to be identified with the presence of positive emotions and the absence of negative emotions, which in turn helps in the prevention of diseases and promotion of health (CDC, 2018). In addition, the WHO defines health to be: “the state of complete physical, mental, and social wellbeing, and not merely the absence of a disease or infirmity” (World Health Organization, 1948).

Meanwhile, the Centers for Disease Control and Prevention (CDC) developed a comprehensive wellbeing definition that collates perspectives from different disciplines and covers the following nine dimensions: physical wellbeing, economic wellbeing, social wellbeing, development and activity, emotional wellbeing, psychological wellbeing, life satisfaction, domain-specific satisfaction and engaging activities and work (CDC, 2018). See Figure 1 with a full description and explanation of the nine dimensions of wellbeing.

Table 1: A Comprehensive Definition of Wellbeing for Healthcare Professionals

<p>CDC Wellbeing Dimensions</p>	<p>Wellbeing Dimensions as Operationalized by the researcher for the purpose of the Research Focusing on HCPs in Isolation Hospitals</p>
<p>Physical Wellbeing: It is defined as our ability to practice our daily activities in the absence of exhaustion or physical stress.</p>	<p>Free from Disease, Availability of regular healthy meals, Access to Vitamins and Immunity Boosters, Access to Personal Protective Equipment, Good Accommodation.</p>
<p>Economic Wellbeing: It is defined as financial security for providing basic life needs, financial satisfaction, and future financial security.</p>	<p>Satisfactory Compensation recognizing additional effort exerted.</p>
<p>Social Wellbeing: It is defined as living peacefully with satisfying all the basic needs with development opportunities.</p>	<p>Good relations with peers, patients, and family members; besides, feeling appreciated.</p>
<p>Development and Activity: It is defined as building skills to pursue our interests and values.</p>	<p>Opportunity for training and capacity development.</p>

<p align="center">CDC Wellbeing Dimensions</p>	<p align="center">Wellbeing Dimensions as Operationalized by the researcher for the purpose of the Research Focusing on HCPs in Isolation Hospitals</p>
<p>Emotional Wellbeing: It is defined as the positive emotions related to love and belongings, leaving people with good mental health with the ability to overcome illnesses.</p>	<p>Feeling safe, at peace, and calm.</p>
<p>Psychological Wellbeing: It is defined as the inter and intra positive emotions related to dealing with others and mastering our attitudes and personal growth.</p>	<p>Access to psychological counseling and psychiatric services when needed.</p>
<p>Life Satisfaction: It is defined as a complete evaluation of our quality of life. It can be defined as happiness with something or fulfillment of expectations.</p>	<p>Feeling satisfied with life in general.</p>
<p>Domain-Specific Satisfaction: It is defined as being satisfied and appreciating a specific life aspect as a job and health.</p>	<p>Achieving a sense of accomplishment at work.</p>

CDC Wellbeing Dimensions	Wellbeing Dimensions as Operationalized by the researcher for the purpose of the Research Focusing on HCPs in Isolation Hospitals
Engaging Activities and Work: It is defined as engaging in meaningful activities associated with life satisfaction and life purpose.	Opportunity for enjoying your time at work and with colleagues and managers.

Source: Centers for Disease Control and Prevention (2018).

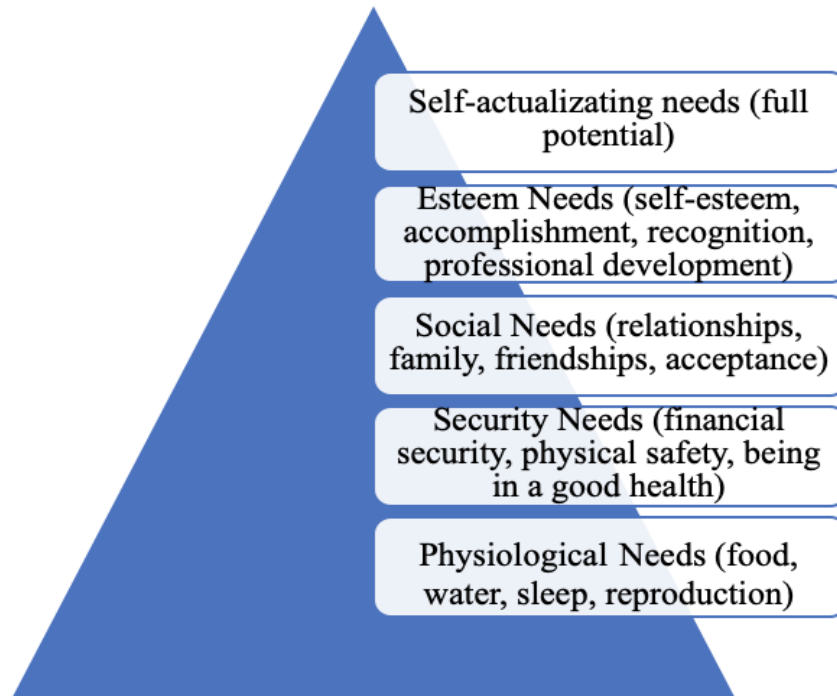
Therefore, depending on the previous table defining different aspects of wellbeing, according to the CDC, the researcher proposed that each aspect depends on different needs, which require fulfillment to reach and achieve this aspect of wellbeing. Identifying the needs is the main base of satisfying those needs; moreover, needs satisfaction leads to motivation and enhances the work behavior of HCPs. Wellbeing of HCPs and satisfaction of HCPs needs directly proportional affect the organizational performance; thus, the researcher proposed Maslow’s hierarchy of needs to be the framework, which could help in identifying those needs and help in achieving the different aspects of wellbeing leading to the motivation of those HCPs during their work at public isolation hospitals during the pandemic.

3.2. Maslow's Hierarchy of Needs:

In 1943 Abraham Maslow introduced the "Theory of Human Motivation" and based it on five main levels that all human beings need to be fulfilled and satisfied. These are the leading causes behind motivation (Mawere et al., 2016). The five levels are presented in a pyramid. The basic physiological needs are at the bottom of it, with the other four needs coming over it,

consequently, safety, social, esteem, and self-actualization. Mawere et al. (2016) have stated that to move from lower levels to upper levels, people have to satisfy the lower levels first.

Figure 1. Maslow's Hierarchy of Needs



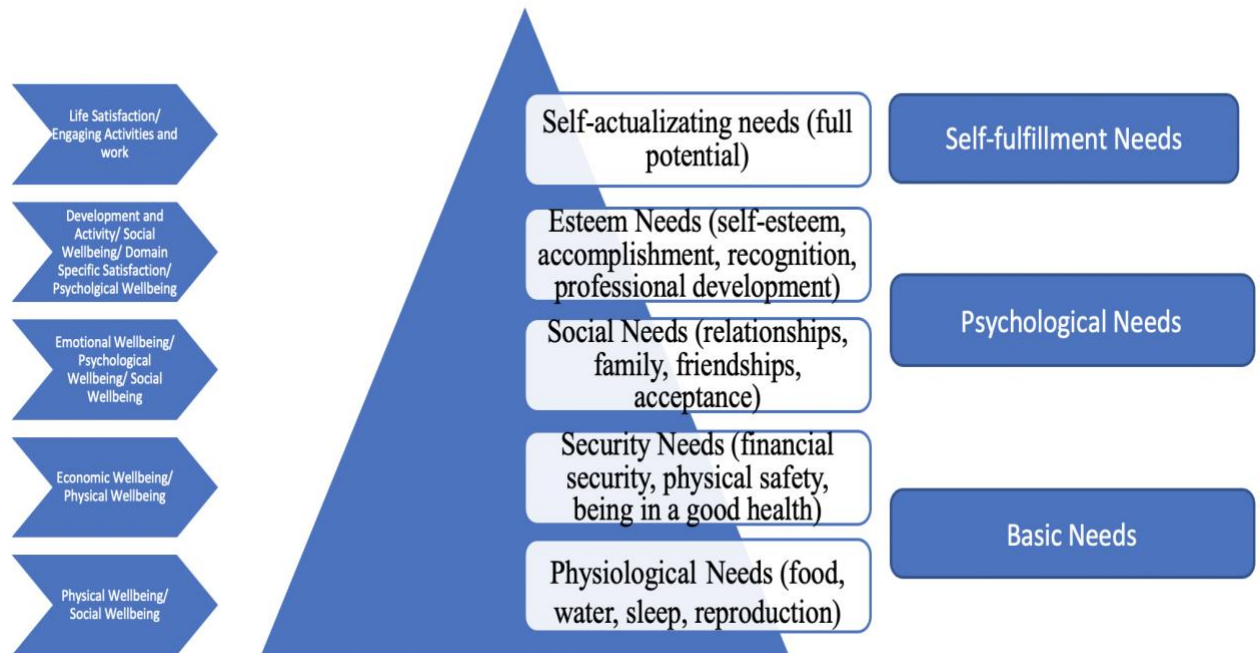
Source: Maslow's Needs Theory (1943).

Maslow's needs theory has been targeting employees' motivation for better organizational performance. The researcher has depended on this theory to identify the motivating factors for HCPs working at public isolation hospitals in Egypt and relate it to different aspects of wellbeing identified by the CDC. This relation could help in the promotion of the wellbeing of those HCPs during the pandemic by the satisfaction of their defined needs, which in turn leads to motivating them and finally achieving these different aspects of wellbeing.

3.2. Researcher's conceptualization:

After reviewing the literature, the researcher decided to adopt the definition by the Centers for Disease Control and Prevention (CDC, 2018), and relating it to Maslow's Hierarchy of needs, use it as the guiding conceptual framework for the analysis of wellbeing by HCPs during the pandemic, and the assessment of the different aspects of wellbeing sought during their work in public isolation hospitals in Cairo.

Figure 2. The Conceptual Framework



Source: The researcher's perception for the relationship between the fulfillment of needs levels for Maslow's hierarchy of needs and achieving different aspects of wellbeing.

This framework has merged both Maslow's hierarchy of needs with different aspects of wellbeing to identify what kind and level of needs, according to Maslow's hierarchy of needs, affect these different aspects and in turn affect the wellbeing of healthcare professionals.

Identifying those needs affecting various aspects can be helpful in developing and recommending policies that would help in overcoming the impact of COVID-19 on the wellbeing of those healthcare professionals working at public isolation hospitals. Depending on the definition of different aspects of well-being, the researcher has proposed that these aspects are covered by different levels of needs and conceptualized in the above conceptual framework.

3.3. Methodology:

A qualitative research approach was adopted. In-depth semi-structured interviews were held with a targeted sample of HCPs in Egypt's public Covid-19 hospitals. Seventeen interviews were carried out in order to delve into the impact of the pandemic on the status of the HCP's wellbeing, understand the causes of their suffering, what and how the hospital management is doing to deal with it, and where the gaps lie. Interviews continued until no further insights were derived. Interviewees were targeted based on a purposive sampling technique to represent different hierarchical levels and positions as much as possible. Due to the pandemic, the interviews were conducted either through Zoom or via phone, and the discussions were recorded after obtaining the informed consent of the participants. This complied with the guidelines of the Institutional Review Board at the American University in Cairo. Table 1 shows the field study sample parameters. According to specialization, HCPs were divided into four physicians, nine pharmacists, a physiotherapist, a dentist, a healthcare policy consultant, and a nurse. There were seven males and ten females; twelve were married with children, and five were single, and they were dispersed over five different governorates in Lower and Upper Egypt.

Table 2: Field Study Sample Parameters:

Interview no.	Gender	Age	Status	Specialty	Governorate/ Type of Hospital
1	Female	28	Married/ 1 Child	Pharmacist/ Infection Control	Aswan/ Fever Hospital
2	Female	36	Married/ 3 Children	Pharmacist/ Infection Control	Ismailia/ Chest Hospital
3	Female	34	Single	Pharmacist/ Dispensing, Clinical	Cairo/ University Field Hospital
4	Female	30	Single	Pharmacist/ Infection Control	Cairo/ Fever Hospital
5	Male	40	Married/ 2 Children	Physician/ Digestive system and liver	Aswan/ Specialized Hospital
6	Female	40	Married/ 2 children and got pregnant during the 1 st wave	Pharmacist/ Manager of the isolation Hospital	Kaha/ Specialized Hospital
7	Female	28	Single	Pharmacist/ Clinical	Aswan/ Specialized Hospital
8	Male	30	Single	Physician/ Neonate	Luxor/ Specialized Hospital
9	Male	40	Married/ 2 Children	Physician/ Psychiatrist	Cairo/ University Hospital
10	Female	45	Married/ 4 children	Pharmacist/ Vice- President of the isolation hospital	Cairo/ Specialized Hospital
11	Male	38	Married/ 2 children	Physician/ Geriatrician	Cairo/ University Geriatric Hospital

Interview no.	Gender	Age	Status	Specialty	Governorate/ Type of Hospital
12	Male	34	Married/ 2 children	Physiotherapist	Aswan/ Specialized Hospital
13	Male	34	Married/ 2 children and his wife got pregnant during his work at the isolation hospital	Dentist	Cairo/ Giza Medical Directorate
14	Male	40	Married/ 2 Children	Pharmacist	Cairo/ Health Policy Consultant
15	Female	34	Married/ 2 Children	Dispensing Pharmacist	Cairo/ Fever Hospital
16	Female	35	Married/ 1 Child	ICU Pharmacist	Cairo/ Fever Hospital
17	Female	25	Married	ICU Nurse	Luxor/ Obstetrics and Gynecology Hospital

Source: The researcher

3.3.1. Design:

This research is conducted to detect the impacts of the COVID-19 pandemic on the different aspects of HCPs, working in public isolation hospitals in Egypt, wellbeing as defined and stated by CDC; besides, the causes of these impacts and the results. This was carried to identify the problems those HCPs have faced during the pandemic in order to work on recommendations for the prevention of these problems during the upcoming pandemics that we may face in the future. The researcher is a pharmacist working at the Egyptian Ministry of Health and Population and has worked during the pandemic as a Warehouse Pharmacist at the Regional Warehouse of a Medical Area, and used to dispense medications to public isolation hospitals and primary healthcare centers; in addition, to home isolated patients during this time. She has contacts at different governorates of Egypt, with different specialties for the medical profession.

3.3.2. Methods:

Data collection was performed by a qualitative research approach. Seventeen in-depth semi-structured interviews were carried out with different specialties of HCPs, distributed in various governorates all over Egypt, presenting rural and urban areas; besides, different marital statuses and ages for better representation and data collection. Interviews were conducted virtually whether on phone or via zoom this was according to the IRB approval form due to the pandemic, and for the safety of the researcher and the interviewees. The researcher depended on flexibility allowed by the semi-structured questions that enabled her to add additional probing questions as the need arises during the interview for better clarification or more information to be added for better in-depth data collection. Finally, the researcher transcribed the interviews and coded them.

3.3.3. Sampling:

Sampling was based on a purposive sampling technique to get an in-depth understanding of the situation during the pandemic. Different specialties and background interviewees at different hierarchical positions, ages, and marital statuses were selected to identify how the pandemic affected HCPs' well-being and later be capable of recommending effective policies to alleviate this crisis.

3.3.4. Interviews:

In-depth semi-structured interviews were conducted with seventeen interviewees, about 4 four physicians, nine pharmacists including infection control specialists, dispensing pharmacist, ICU pharmacist, Manager and Vice-president for isolation hospital, a physiotherapist, a Dentist, a Healthcare Policy Consultant, and an ICU nurse were interviewed. There were seven males and ten females; 12 were married with children and five singles, and they were dispersed over five different governorates in both Lower and Upper Egypt. This was after taking the approval of the Institutional Review Board of the American University in Cairo.

3.3.5. Data Analysis:

Interviews were carried out in Arabic and then translated into English by the researcher. Transcripts were then sorted into themes dividing the interviews into several sections. After that, the most representative illustrative quotes were highlighted to be incorporated into the findings and field analysis. The researcher has interviewed different specialties of HCPs with different medical backgrounds at different healthcare facilities providing different healthcare services before being shifted to isolation hospitals. Besides, interviewing a healthcare policy consultant to evaluate the findings and recommendations concluded.

3.3.6. Ethical Considerations:

All interviewees participated in this research voluntarily after being informed about the study and its purpose; besides, informing them of their rights, including the right to leave the interview whenever they wanted. The informed consent was sent via email, signed by the interviewees, and then sent back to the researcher via email. Their approval was taken to record the interviews and they were informed that their identity will be kept anonymous, and the records and transcripts will be kept on the researcher's laptop, which is password protected. The interviews were conducted in the period between August 2021 and December 2021 after the American University of Cairo IRB approval. The results were then analyzed by the researcher.

3.3.7. Limitations of the Study:

The interviews were conducted during the pandemic between August 2021 to December 2021. They were done via phone or zoom, which was considered as a barrier to detect other possible body language-related reactions of the interviewees that could have been recorded for further in-depth analysis to augment the findings of this study period. In addition, when some of the interviews were carried out via phone, the interviewees were not totally concentrating. At times, they may have been doing other things like driving their cars, walking, or even working at their hospitals. Only 17 interviews were carried out, and although much was revealed during these interviews, the results cannot be generalizable, which is a limitation with most qualitative studies.

3.3.8. Delimitations of the Study:

Many HCPs refused to participate in this research after being informed that this research is AUC IRB approved, i.e., knowing that it belongs to the American University in Cairo. In

addition, the study did not cover all the Egyptian governorates, which means that some data may be missing regarding the research problem.

CHAPTER FOUR: FIELD RESULTS AND ANALYSIS:

The following section deals with the findings from the fieldwork involving the in-depth interviews held with HCPs working in public isolation hospitals in Egypt. The chapter is organized to cover the following themes covered during the interviews: the definition of wellbeing from the HCPs perspective, the physical, economic, and social wellbeing of the interviewees, their development and capacity building options, their emotional and psychological wellbeing, life satisfaction, domain-specific satisfaction, engaging activities and work; besides, recommendations stated by interviewed healthcare professionals for achieving better wellbeing of those HCPs working at public isolation hospitals.

The researcher started the interviews with identifying the interviewees perception about wellbeing definition from their own point of view. Accordingly, this could be beneficial in identifying the gap of what those healthcare professionals needed to achieve their sense of wellbeing and what was present on the real ground during their work at public isolation hospitals.

4.1 Definition of Wellbeing from HCPs point of view:

HCPs with different specialties, gender, and socio-demographics have defined wellbeing differently; however, what they all agreed to, was that additional to the essential elements of wellbeing, it is definitely related to mental health and positive emotions

- *Good mental health with a clear mind, the perfect mind in a healthy body, and vice versa (Female Infection control specialist, Interview 2, 2021).*

- *Being healthy and safe... Mental health has been considered after the COVID-19 as we suffered from depression due to isolation and loneliness (Female Clinical pharmacist, interview 3, 2021).*

In the literature reviewed, wellbeing is defined as “a state of being where all members of a community have economic security; are respected, valued and have personal worth; feel connected to those around them; are able to access necessary resources, and are able to participate in the decision-making process affecting them” (Marshall et al., 1995). The interviewees seemed to agree with the literature definitions. They all mentioned the basic physiological needs as an essential part of their wellbeing. According to Maslow’s hierarchy of needs, physiological needs are the base of the hierarchy of needs that requires to be fulfilled to achieve satisfaction. Once those basic needs are satisfied, some of the interviewees related that to their feeling dignified and appreciated, reaching the fourth level on Maslow’s hierarchy.

- *The basic needs, you sleep well, eat well, you feel your dignity, you feel happy (Male Psychiatrist, interview 9, 2021).*
- *Can sleep, eat, and function normally. (Female Clinical pharmacist, interview 7, 2021).*

Others relate it to safety, security, and being healthy, the second level on Maslow’s hierarchy.

- *I am happy, safe, and secure, appreciated, and supported (Female Vice-president of an isolation hospital, interview 10, 2021).*

Moreover, some just mention satisfaction and happiness, the last level on Maslow’s.

- *Feeling Happy (Male Neonatologist, interview 8, 2021).*
- *I feel good, happy, and not worried (Female Infection control specialist, interview 4, 2021).*

- *I can be tired and exhausted but happy and satisfied with what I am achieving and doing (Male Physiotherapist, interview 12, 2021).*

Therefore, wellbeing according to Marshal's definition, as mentioned in the literature reviewed, and according to different healthcare professionals' definitions is related to the fulfillment of Maslow's hierarchy of needs to reach the full state of wellbeing.

During the pandemic, some of those needs, identified by Maslow, have been compromised, while others have been enhanced, as mentioned by different HCPs, who worked at the isolation hospitals. Conceptualizing what they have said on Maslow's Hierarchy of needs. Starting with the physiological needs, which is the base of the hierarchy, many have reported that these needs were available and satisfied during their work at isolation hospitals; on the other hand, some have reported the lack of these needs.

- *The Accommodation was very good, everything was provided, and every 2 healthcare professionals stay in one room (Female Clinical pharmacist, interview 3, 2021).*
- *We were 2/ room. All the physiological needs were available, and everything that needed repair was repaired on time (Male Geriatrician, interview 11, 2021).*
- *There was no accommodation; we stayed at the pharmacy for the 12 hours shift; at last, we got a bed at the pharmacy, a donation that we used to open when we needed to have some rest (Female Dispensing pharmacist, interview 15, 2021).*
- *Food was only provided for those taking two shifts (Female Infection control specialist, interview 1, 2021).*

- *We used to sleep on sofas or chairs. Then, we slept on metal beds provided by the Egyptian Red Crescent. I bought a Frigidaire and a half-automatic washing machine (Female Infection control specialist, interview 2, 2021).*

There were variations in the accommodation provided for different healthcare professionals. Those working at university hospitals, which was then turned to isolation hospitals, had better accommodation than those, who worked at fever hospitals or chest hospitals, which were then shifted to isolation hospitals.

The second level, their security needs, was an essential need as mentioned by different HCPs that were not satisfied. They were feeling that they are facing an unknown, as noted by many of them. Their leading cause of fear from facing this unknown was their fear on their families and children.

- *I was terrified. I started to think about my family and children...I kept crying, and I do not know the main reason behind this (Female Infection control specialist, interview 2, 2021).*
- *I was afraid and felt the danger was coming and would harm my children, my parents, and my family (Female Manager of Isolation hospital, interview 6, 2021).*

Another point regarding security needs was the workload and how this workload affected their safety. The workload has led them to acquire the infection and deprive them of sleeping, eating, and contacting their family and friends, affecting the first, second, and third levels of needs.

- *We were receiving COVID-19 patients, which started at 1 AM till 6 Am. Then, at 9 AM the health directorate used to ask for some data regarding our work (Female Infection control, interview 2, 2021).*

Considering isolation and loneliness; besides, being stigmatized and how they mentioned these affected their social needs, the third level on Maslow’s hierarchy and the esteem needs level as the fourth level. These were all deteriorated during their work at isolation hospitals.

- *Many of my friends outside the medical field refused to see me after knowing that I am working at the isolation hospital (Female ICU nurse, interview 17, 2021).*
- *I stayed for about four months not seeing my parents as I was afraid to infect them (Female Infection control specialist, interview 4, 2021).*

Although all these needs have been affected negatively during the pandemic, their high sense of accomplishment they all stated have fulfilled their self-fulfillment needs.

- *I felt a sense of accomplishment, especially after treating deteriorated geriatric patients and getting cured (Male Geriatrician, interview 11, 2021).*

Therefore, wellbeing as defined by different HCPs and after relating it to Maslow’s hierarchy of needs has deteriorated dramatically during the pandemic and their work at the isolation hospitals. The researcher has tried to state different needs levels in the table below and how different HCPs have identified the impact of COVID-19 on these needs’ levels.

Table 3: COVID-19 Impact on Maslow’s Hierarchy of Needs for HCPs

Needs Level	Impact of COVID-19 as stated by different interviewees
Physiological Needs	Limited access to food and meals during work shifts, unsuitable accommodation,

Needs Level	Impact of COVID-19 as stated by different interviewees
	isolated for long time away from their families
Security Needs	Improper security of the isolation wards, contracting COVID-19 virus during work, long work hours, lack availability of PPEs, Lack of access to vitamins and immunity boosters, no satisfactory financial compensations.
Social Needs	Loneliness, missing friends, children, and family, stigmatized, problems with their partners due to their work at isolation hospitals, stress, refusal of some families to receive their parents' dead bodies, anxiety, terror
Esteem Needs	Their work is not appreciated, and different celebrities disrespect their sacrifices, no development or training for their career development; COVID-19 is away from different specialties.

Needs Level	Impact of COVID-19 as stated by different interviewees
Self-actualizing Needs	No leadership support, no recognition, some extent of sense of accomplishment.

Source: Interviewees.

4.1. Physical Wellbeing:

Physical wellbeing, as proposed by the researcher depends on the basic needs, which are: first and second levels of needs on Maslow's hierarchy of needs. Therefore, fulfilling these needs will enhance the physical well-being of those HCPs, and unfulfilling these needs will deteriorate the physical well-being of those HCPs.

Respondents talked about how their sense of physical wellbeing was generally compromised during the pandemic. Issues raised included occasional limited access to food and meals during work shifts, improper security of the isolation wards, contracting the Covid-19 virus during work, unsuitable accommodation, long work hours, lack of availability of protective gear at all times, and in the specifications required, and lack of access to vitamins and immunity-boosting medications. Following are some quotations from the interviewed HCPs:

- *I lost a lot of weight. I used to miss eating during my work (Female Infection control specialist, interview 2, 2021).*
- *I was always exhausted due to the long working hours shift; besides, the workload as we used to dispense medications to large numbers of patients (Female Dispensing pharmacist, interview 15, 2021).*

More than one respondent explained that meals, as a basic physiologic need in the Isolation hospitals, were not always readily available for all HCPs, but were provided for those who worked for two consecutive shifts. One reported losing weight because she was afraid to eat the hospital food.

Furthermore, accommodation at isolation hospitals fulfilling the basic level of needs was not that acceptable as reported by different HCPs.

- *We used to sleep on sofas or chairs; then we slept on metal beds provided by the Egyptian Red Crescent. I could not sleep for a couple of hours due to the workload (Female Infection control specialist, interview 2, 2021).*
- *[Accommodation] was not that perfect during the first wave, but after that, the situation was better (Female Manager of Isolation hospital, interview 6, 2021).*

The accommodation provided at the hospitals for the HCPs was not always the best. At the beginning of the pandemic, some HCPs reported that they had to sleep on chairs and sofas and that it was only later those beds were made available through the charitable efforts of the Red Crescent nonprofit organization. Later on, the situation was improved upon.

Regarding the security needs, Improper security to isolation wards lead to a negative impact on HCPs' physical wellbeing as this lies under the second level of needs on Maslow's hierarchy, which is the security needs affecting their physical wellbeing.

At one point, the isolation door should have been closed. However, this did not happen. It was left open during the working hours...the workers get in contact with inpatients and then get in contact with us (Female Infection control specialist, interview 1, 2021).

In some incidents, access to the Isolation ward with the COVID-19 patients was not sufficiently secured. The cleaning staff managed to get in and out of the wards and placed the HCPs in harm's way.

Consequently, many reported getting infected with Covid-19 during their work at the Isolation hospitals and some even contracted the virus more than once. Out of the seventeen HCPs interviewed, seven reported having been infected.

- *I got infected with Covid-19. During our stay with colleagues, we did not wear any PPEs. (Female Infection control specialist, interview 2, 2021).*
- *I got infected during my work and I worked during my infection with an N95 mask (Female Infection control specialist, interview 4, 2021).*
- *I got infected two times with Covid-19 from the hospital during the second wave (Male Internist, interview 5, 2021).*

In one incident, a HCP continued to carry on his work activities while being infected, and just decided to put on an N-95 surgical mask, believing that it provided sufficient protection to those he got in contact with.

Moreover, the workload was an important cause for acquiring the infection and badly affecting their physical wellbeing badly; besides, shortage of PPEs affects their security needs level.

- *The workload was horrible. I got out of the hospital after the first isolation round very exhausted and totally depressed (Female Manager of an isolation hospital, interview 6, 2021).*

Several of the HCPs commented on the long hours of their work shifts that left them exhausted, drained, and depressed.

- *PPEs were available and sufficient at the beginning of the pandemic. At the end of the second wave, they were not sufficient. Vitamins and immunity boosters were available only for the infected. (Female Infection control specialist, interview 2, 2021).*
- *Sometimes there were shortages in the PPEs, mainly in N95. This was during the second wave (Female Infection control specialist, interview 4, 2021).*

- *Sometimes there were shortages in PPEs, and we covered this from our own money and the manager's money (Female Vice-president of an isolation hospital, interview 10, 2021).*

Personal Protective Equipment (PPE) was mostly reported as available. Shortages were encountered later during the second and third waves of the pandemic, and HCPs sometimes had to buy additional surgical masks at their own expense. Additionally, HCPs were not supplied with vitamins or immunity-boosting medications as these were reserved for the infected only.

Thus, according to what was declared by different HCPs working at various public isolation hospitals at different places in Egypt, they all suffered from the negative effect on their physical and social wellbeing. This was mainly dependent on the lack of different basic physiologic and security needs as conceptualized by the researcher and what has been mentioned by those HCPs. Additional studies support this point as Zaka et al. recommended psychological support for HCPs to minimize the effect of "the main stressors" related to the lack of physiologic needs and psychological needs (2020). Assuring their physiological needs, physical safety, and their health is vital for their physical wellbeing.

4.2. Economic Well Being:

Economic wellbeing is related to the second level of needs as hypothesized by the researcher. The financial security of these HCPs ensures their economic wellbeing. Most of the respondents reported that they had received reasonable financial compensation during their work at the Isolation hospitals, over and above their regular salaries. This was considered as encouragement and appreciation for those HCPs for their sacrifices.

- *The bonuses were great. It was named Covid-19 allowance. It was about EGP 30 thousand for physicians [equivalent to \$1910] and EGP 5 thousand [equivalent to \$318] for nurses every three months (Female Infection control specialist,interview 1, 2021).*
- *Other than my salary, I got EGP 13 thousand [equivalent to \$828] every two weeks. Physicians got more (Female Clinical pharmacist, interview 3, 2021).*
- *I worked during the third wave, and we did not get any financial bonuses. Others who worked during the first and second wave got satisfactory financial bonuses (Male physiotherapist,interview 12, 2021).*

On the contrary, some have reported that they have not received that level of satisfactory financial compensation. There was no clear and defined answer for this level of variety in the financial rewards; however, what was concluded is that there were no clear policies, regulations, and guidelines for these compensations to be obtained.

- *We did not get satisfactory compensation; we got about EGP 500 per month (Equivalent to \$ 31) for our work at the isolation hospital (Female Dispensing pharmacist, interview 15, 2021).*
- *We were informed that we will get financial bonuses for working at the isolation hospital; however, we did not get satisfactory ones and got them after a long time (Female Clinical pharmacist, interview 7, 2021).*
- *I have worked during the COVID-19 different waves and did not receive any financial bonuses for my work at the isolation hospital (Female ICU nurse, interview 17, 2021).*
- *I got the decree for receiving financial bonuses from a hospital manager in another city (Male Dentist, interview 13, 2021).*

Many respondents have stated that they did not get any bonuses, others got them late, and others got non-satisfactory ones for their sacrifices and work at isolation hospitals to combat this unknown monster. Moreover, the financial bonuses did not continue with the same level of abundance during the third wave of the pandemic.

In addition, HCPs got financial support from the medical syndicate and some universities. The medical syndicate have spent about 20,000 L.E. (Equivalent to \$1250) for infected HCPs with COVID-19 and about 100,000 L.E. (Equivalent to \$6250) for martyrs; besides, recommending the addition of infected and martyrs HCPs to honoring fund for the injured and martyrs according to the law of 16/2018 (RT Online, 2020). The Japanese university in Egypt has offered a fully covered scholarship for martyrs' doctors' sons for the engineering and business department in the university (Nassar, 2021).

- *I got the financial compensation from the medical syndicate offered for infected HCPs during this time, and it was about 20,000 L.E., which was somehow satisfactory (Female Infection control specialist, interview 2, 2021).*

The financial support and the support offered by the Japanese university and the medical syndicate is related directly to the security needs level on Maslow's Hierarchy of needs. Fulfilling this financial security need is crucial for HCPs during this pandemic to save their economic well-being from deteriorating. However, inequality in providing the financial bonuses provided to those HCPs during the pandemic and the unclear guidelines and policies for rewarding these compensations negatively affected their economic wellbeing.

4.3. Social Wellbeing:

The social wellbeing is conceptualized by the researcher to be achieved by the first needs level; besides, the third and fourth needs levels. It is related to fulfillment of the basic physiologic needs, the social needs (acceptance), and the esteem needs. The social well-being of the respondents was negatively affected during the pandemic. The very nature of the work in 'Isolation' hospitals is at odds with the notion of 'social wellbeing' and socialization. Many spoke of loneliness, missing friends and family, and a few mentioned the idea of being stigmatized by others.

- *The loneliness affected my mental health (Female Clinical pharmacist, interview 3, 2021).*
- *Being isolated is a point that totally affected my mental health badly (Female ICU nurse, interview 17, 2021).*

In describing how harsh the working conditions were at the Isolation Hospital, respondent reported how the isolation and associated loneliness have impacted their mental health; besides, their physical health. Brooks et al. agreed with those HCPs in loneliness leads to different physical health complications. The idea of being stigmatized was referred to by a number of respondents. They relayed how friends refused to see them and how even restaurants sometimes refused to send them food when they ordered from the hospital; however, not all respondents encountered stigma.

- *Many restaurants refused to deliver food to us. (Female Infection control specialist, interview 2, 2021).*
- *My friends changed. They refused to meet me. I suffered from stigma" (Male Neonatologist, interview 8, 2021).*

- *I did not suffer from any level of stigmatization (Female Infection control specialist, interview 1, 2021).*
- *I used not to tell my family that I am working at an isolation hospital, especially after getting the infection of COVID-19 and infecting my family. They all got afraid of me and afraid of dealing with me (Female ICU nurse, interview 17, 2021).*

Nevertheless, one optimistic respondent mentioned how socialization took place within the hospital and how they helped one another out.

- *[Inside the hospital] we used to socialize and support each other (Female Clinical Pharmacist, interview 7, 2021).*

Healthcare professionals working at isolation hospitals suffered from stigma at different levels. This was more illuminative in rural areas than urban ones. According to CAPMAS in 2017, the percentage of illiteracy in rural areas was about 32.2 %, compared to 17.7% in urban ones with the highest rates are focused on Upper Egypt and Lower Egypt governorates (Egypt Independent, 2018). Healthcare professionals working in Upper Egypt suffered from a social stigma that many of their family and friends did not want to deal with them during the time of the pandemic, especially during the 1st and 2nd waves. This has negatively affected their wellbeing, and in turn, negatively affected their work at the isolation hospitals.

A male physician, who was assigned to work at an isolation hospital in Luxor has mentioned the stigma he suffered from during his work at the isolation hospital

- *During my work at the isolation hospital, I was looking for support from my friends, and neighbors, although this did not happen. I was sacrificing and in the front line; however,*

they did not appreciate it. We did not want them to surrender; however, we want them to appreciate and support us (Male Neonatologist, interview 8, 2021).

This physician has related this stigma to the illiteracy of those people. He mentioned that we as Egyptians lack what is called medical knowledge or health culture.

- *Some families were just mentioning, after dealing with their patients, just keep away doctor in order not to infect me (Male Neonatologist, interview 8, 2021).*

He stated that the main reason behind this is the media. Raising awareness during this time was a very crucial role of the media; however, this did not happen. He accused the media of showing some videos of a celebrity mentioning that

- *There is no corona in Egypt, and the president mentioned that Corona will end by Saturday (Male Neonatologist, interview 8, 2021).*

He found that this is considered a crime and this celebrity should have been arrested as this was considered as spreading misleading data and information about Corona

- *This one should have been arrested for these wrong announcements. He encouraged his fellows to deal as if there is no corona, and we were dying at isolation hospitals (Male Neonatologist, interview 8, 2021).*

Although there was a declaration of the public prosecution, during this time, will confront any similar rumors, false data, and news pursuant to articles no 80, 102, 188 of penal law, which punishes the perpetrator by imprisonment and a fine that does not exceed twenty thousand Egyptian pounds (The General Public Prosecutor's Office, Media and Guidance Administration, 2020), this celebrity has not been penalized or arrested. Moreover, he highlighted that many celebrities have held weddings, celebration events, and funerals, which were banned during this time

- *A celebrity has celebrated his sister's wedding during the peak of the COVID-19 with social media announcements; this was also an explicit encouragement to his followers to deal as it is not Corona; however, they should be role models to their followers (Male Neonatologist, interview 8, 2021).*

Another pharmacist, who was the manager of an isolation hospital at Kaha, stated how the citizens of the city refused to shift the hospital to an isolation hospital.

- *The city citizens congregate not accepting this, and the police start to set a cordon. She also mentioned different situations where people refused to deal with or get in contact with the hospital and those working in it (Female Manager of an isolation hospital, interview 6, 2021).*
- *We asked a company to come and fix the CT scan, and the company refused to send someone to fix it (Female Manager of an isolation hospital, interview 6, 2021).*
- *We also asked someone to come and fix something in the infrastructure, and they also refused to enter the isolation hospital (Female Manager of an isolation hospital, interview 6, 2021).*

One of the main consequences of this stigma was the Fatwa issued by Grand Mufti, which religiously prohibited refusal of burying of coronavirus martyrs, this was especially after the refusal of the burial of a female doctor, who died with coronavirus, during doing her job at the isolation hospital, and her neighbors of Shubra Al-Bahw village in Dakahlia (Egypt today, 2020). These cases were all experienced in rural areas. All these actions negatively affected the social well-being of healthcare professionals. They felt loneliness and isolation due to this stigma and the way of communication with others.

On the other hand, in urban areas, the case was different. The interviewees stated how their friends, family, and neighbors appreciated their work and supported them. A female infection control specialist at an isolation hospital in Ismailia was proud of her friends, who supported her during this time.

- *My friend came to visit me outside the isolation hospital and brought a gift box including MacDonald's meal, Pepsi, and chocolates; I cried a lot. I was totally depressed and shattered (Female Infection control pharmacist, interview 2, 2021).*

She found that this kind and simple action helped her a lot in overcoming the depression and anxiety she was suffering from.

Therefore, social wellbeing for HCPs working at isolation hospitals has been negatively affected during the pandemic. This was mainly due to stigmatization, isolation, and loneliness.

4.4. Development and Activity:

According to the researcher's proposal, development and activity are enhanced by fulfilling esteem needs, the fourth level of needs on Maslow's hierarchy. It is related to professional development needs, recognition, and development.

Respondents' opinions differed as regards the availability of opportunities for capacity building and development related to their work. Some were positive in their outlook and reported that they had received training on a regular basis, while others explained that it was only training related to how to use the Personal Protective Equipment. Still, others said no training was given to them at work during the pandemic.

- *We were not given periodical training [during the pandemic]. (Female Infection control pharmacist, interview 2, 2021).*
- *Training mainly was conducted on a single direction basis, no discussion, no opportunity to ask for more clarification, and no ability to ask about other points than that delivered (Female Dispensing pharmacist, interview 15, 2021).*

It seems this respondent did not consider training on how to use the PPEs qualifies as training.

- *The training was mainly on proper usage of PPEs (Female Clinical pharmacist, interview 3, 2021).*

Several mentioned the detailed training received on how to use the PPEs, especially how to take them off, and the steps to be followed so as not to contract the virus.

- *Any training we asked for was provided as needed (Female Manager of an isolation hospital, interview 6, 2021).*

One respondent was satisfied with the training opportunities available and stated that all the training they asked for was provided without any problems.

Another main point related to the developmental aspect of wellbeing, and the fact that the training provided was only focused on the use of PPEs, was that the physicians assigned to work in the Isolation hospitals sometimes had no clue about how to deal with and manage COVID-19 patients. They were specialized in areas that had nothing, or very little to do, with pandemics.

- *This was due to the know-how; I am assigned to a work I do not have any background or knowledge about it (Male psychiatrist, interview 9, 2021)*

- *I am a neonate specialist; when I started working at the isolation hospital, I left my specialty, which affected me and my work as a neonate specialist. I am now more specialist in COVID-19 than neonates (Male Neonatologist, interview 8, 2021).*
- *Although they taught us how to deal with COVID-19 patients, which was a bonus point in learning a new specialty, we missed the development in our specialty during this time (Male Internist, interview 5, 2021).*

A psychiatrist, a neonate physician, a geriatrician, and a physician specializing in the digestive system and liver; all assigned to work in the Isolation hospitals. The problem was compounded. For one thing, these physicians had no clue how to help the Covid-19 patients and needed training, and for another thing, they felt they were losing precious time by not developing the skills linked to their specialization. The latter point was especially true for those who had just graduated from medical school. A psychiatrist mentioned that this might be the main cause of the high level of stress felt by HCPs on the job.

On the other hand, during wave three physiotherapists were assigned to work at public isolation hospitals according to interviewee 12 after the Minister of Health's decree to assign physiotherapists to work at the isolation hospitals once they discovered their role and the outcome achieved for rehabilitation of COVID-19 patients after isolation "the physiotherapist's role in intensive care is helping patients in their recovery after they have been critically unwell with COVID-19". "From a key role in intensive care to recovery rehabilitation, physiotherapists are working on the frontline to help COVID-19 patients recover" (M. Parry, 2020). He mentioned that their role was very crucial for COVID-19 patients, especially those, who spent a duration at the ICU. His primary role was to help COVID-19 patients in rehabilitation "Patients who end up in intensive care for a long period of time can become quite weak. An important part of a

physiotherapist's role is to help rehabilitate these patients. That means doing exercises, as well as sitting up and walking with these patients" (M. Parry, 2020).

He considered his work at the isolation hospital as an important step in his career to be mentioned; besides, it adds a lot to his knowledge and development. He illustrated the importance of his work for ICU patients who stayed for a long time, were on vent, and they are moved to be on a reservoir. His role was to help them by just moving their muscles, moving their bodies, passive movement to prevent bedsores. After that, when they were moved to be on an oxygen mask, the Physiotherapist's role was to work on increasing the vital capacity of the lungs to increase the amount of oxygen entering the lungs. Many patients suffered from excessive muscle weakness and their role was to work on the rehabilitation of these patients till they left the hospital. They continued these sessions after leaving the hospital till they restored their full health and be able to walk again. All these helped him in gaining more experience and better career development.

- *I felt a sense of accomplishment after my work experience at the isolation hospital. If I am going to be recalled working at an isolation hospital, it would be my pleasure to do so (Male Physiotherapist, interview 12, 2021).*

Therefore, development and activity were enhanced for those who were practicing and working in their specializations, i.e., their professions was mainly depending on the treatment of COVID-19 and its complications. On the other hand, it was deteriorated for those whom specializations were away from COVID-19 infection and its related complications. However, this could be managed by making a good use of each specialization in treatment of COVID-19 and its complications that was underestimated during this time as the psychiatrist specialty.

4.5. Emotional Wellbeing:

Social needs on the third level of Maslow's hierarchy are crucial for the emotional wellbeing of HCPs working at isolation hospitals, as proposed by the researcher. It is related to relationships, family, and friendships. The main and illuminating point was that they were afraid of their families and their surroundings. Their leading cause of anxiety, fear, and worry was due to their fear of acquiring the COVID-19 infection and transmitting it to their family and children. This point negatively affected their mental health and psychological wellbeing, and their social needs. It made them suffer from anxiety and psychological stress. This was obvious and stated clearly among females than males.

A female infection control specialist has mentioned that she kept crying once she was assigned to work at an isolation hospital in Ismailia.

- *I think that this was mainly because I am going to leave my children alone during this time or to be a reason of infecting them with COVID-19. I was afraid of the responsibility as I was responsible for the infection control department and if one of the HCPs staff get infected the rest of the staff is going to be infected in turn (Female Infection control specialist, interview 2, 2021).*

Others talked about how they had to stay away from their families and missed seeing them sometimes for months on end, especially the elderly parents. They were afraid of passing on the infection.

- *I worked for 12 hours/day, and when I returned home, I used to isolate myself in my room away from my family. My friends refused to see me during my work at the Isolation hospital (Female Infection control specialist, interview 4, 2021).*

- *I worked for 15 days at the Isolation hospital...get out for 15 days. I did not see my parents for five months (Female Manager of an isolation hospital, interview 6, 2021).*

On the contrary, another female pharmacist, who was assigned to work as a manager of an Isolation hospital at Kaha, thought that responsibility is the definition of wellbeing from her own point of view. She found that holding responsibility makes her happy and positively affects her wellbeing.

- *I can hold the responsibility very well as this makes me reach my positive emotions. Helping people and others and making them feel happy and satisfied (Female Manager of an isolation hospital, interview 6, 2021).*

However, her fear for her family and children made her well-being negatively affected.

- *I was afraid and felt the danger was coming and it would harm my children and my parents and family (Female Manager of an isolation hospital, interview 6, 2021).*
- *At first, I refused to mention that I have children and I am afraid of the infection and getting it (Female Manager of an isolation hospital, interview 6, 2021).*

She discovered that the main aspect of wellbeing, which had deteriorated, was emotional wellbeing as a consequence of leaving her children alone during this pandemic and lockdown.

- *My children were the most critical point that hurt me. They were always asking me when I was going to get home, my daughter once told me (Female Manager of an isolation hospital, interview 6, 2021).*
- *Please mum, do not forget us, just keep remembering us; this made me totally depressed (Female Manager of an isolation hospital, interview 6, 2021).*

Another point of view was mentioned by a female Vice-president of an isolation hospital in Cairo. She found that her main problem was leaving her children to experience this time alone with a lockdown and no activities or learning experiences, whether from her or an educational institution.

- *I feel depressed as I was aware of the precautions of isolation hospitals, and my family is going to be staying alone at home as my husband is not a HCP, and I will be away from them (Female Vice-president of an isolation hospital, interview 10, 2021).*
- *As there was no one to take care of my children and educate them. There were no nurseries, no schools, no clubs, and this negatively affected their development and learning “They were requiring a particular level of care during this age, and this was not provided at home or even outside it (Female Vice-president of an isolation hospital, interview 10, 2021).*

She had mentioned that her work at the isolation hospital was the main reason for her son to delay his learning development during this time.

- *I had a bad experience with my son, Selim, he was five years old during 2020 and did not go to a nursery or school, and I left him alone at home for a long time due to my work at the hospital. This year I tried to apply for a school for him and I discovered that he is not the same as his colleagues, and he was negatively affected (Female Vice-president of an isolation hospital, interview 10, 2021).*

Many interviewees declared that not all the families were understanding and supportive of their work at Isolation hospitals. One respondent talked about how her husband asked to quit her job because she was leaving her five-year-old son alone at home for long periods of time.

- *I suffered from problems with my husband. I left my five-year-old son alone at home for many hours due to my work at the hospital. He was negatively affected (Female Vice-president of an isolation hospital, interview 10, 2021).*

Moreover, fear, anxiety, terror, stress, crying, very difficult and emotionally draining situations were reported by the respondents in describing their work at the Isolation hospitals.

- *I got afraid once I felt I was going to deal with this pandemic. I felt that this is more than my capabilities and qualifications. I experienced a lot of psychological stress during the pandemic peaks during May 2020 and February 2021 (Female Infection control specialist, interview 1, 2021).*
- *Anxiety was the main reaction as the probability of getting the infection is high, and I will be away from my family for 14 days (Female Vice-president of an isolation hospital, interview 10, 2021).*
- *I was afraid of the unknown, not the work itself (Male Neonatologist, interview 8, 2021).*

Different reasons were given for the feelings of fear and anxiety experienced by the respondents. Many were worried about their families and children, whether having to leave them alone for long periods of time or afraid that they may pass on the infection to them. Others were feeling overwhelmed and incapable of dealing with the 'unknown'. One respondent felt that the situation was more than she could deal with and was more than her capabilities.

- *I saw many patients dying; their families did not want to receive their bodies. Dialysis patients got infected with Covid-19, and I used to stay with them singing to improve their psychological status, and on the second day, they died (Female Infection control specialist, interview 2, 2021).*

- *Dead patients...their families refused to take them, and we had to call the police (Female Clinical Pharmacist, interview 3, 2021).*

The most emotionally draining situations were those where the respondents had to deal face to face with death and the ugliness surrounding it during the pandemic. In some situations, they got to connect and bond with the in-patients and felt the uselessness of their efforts when those patients passed away. Additionally, what got to them the most was the reaction by the families of the deceased, who sometimes refused to receive the bodies of their parents or relatives, to the extent that the hospital had to force them to do so and called the police.

4.6. Psychological Well Being:

Psychological well-being is enhanced by fulfilling the psychological needs: social needs, the third level, and the esteem needs, the fourth level, as proposed by the researcher. Nearly all the interviewees have stated that they suffered from psychological stress during their work at isolation hospitals. Some have mentioned that this was due to the high number of patients infected with COVID-19; besides, the high mortality rate of the COVID-19, which increases their negative emotions, fear, and stress, affecting their social needs and relationships.

- *I experienced a lot of psychological stress during my work: The rate of infection and death rate; besides, fear of being a carrier for the disease to my family (Male Psychiatrist, interview 9, 2021).*
- *Mainly from the number of patients who died, worrying about getting infected with COVID-19, or a carrier for COVID-19 with being a carrier more stressful (Male Physiotherapist, interview 12, 2021).*

A respondent working at an isolation hospital for Pregnant women has responded that her psychological wellbeing was negatively affected as she got connected with the women who were infected with COVID-19 and she did all her best to save their lives and their embryos; however, sometimes she failed to do so, and this affected her badly by affecting her esteem and accomplishment needs.

- *I cried a lot after the death of 3 pregnant women infected with COVID-19, I got very distressed that all my effort to save their lives were useless (Female ICU nurse, interview 17, 2021).*

Others have attributed their psychological stress to the workload, long working hours, fear of infection, and lack of social life, which affected the security and social needs on the hierarchy.

- *I experienced a lot of psychological stress during my work: Mainly due to fear and worry not on ourselves, but on our families. The isolation was also very stressful. No social life and activities (Female Clinical pharmacist, interview 3, 2021).*
- *The workload and working hours as I was the manager of the isolation department in the hospital. As I was responsible for physicians, nurses, patients, and workers in the hospital. I have to take care of all these people (Male Neonatologist, interview 8, 2021).*
- *I suffered from psychological stress due to these [long] working hours. (Female Infection control specialist, interview 1, 2021).*
- *The word isolation has a negative impact on us subconsciously. Staying for more than 24 hours in one place also and for a long time (Female Clinical Pharmacist, interview 7, 2021).*

- *Seeing others enjoying their time with their families during the isolation and creating new bonds with each other, making Tik-toks videos, made me feel more depressed that I am missing this point with my family (Female Vice-president of an isolation hospital, interview 10, 2021).*

In the meantime, Female mothers interviewed suffered mainly from their responsibilities towards their children and their duty as HCP during this severe time. They were not able to take the absence of leave and take care of their children, and at the same time, they did not have a safe place to leave their children in. This greatly burdens their mental health and, social needs, and made them suffer from persistent psychological stress.

- *I do not have a safe place to leave my daughter; besides, I cannot take a leave of absence as it was prohibited at this time (Female ICU pharmacist, interview 16, 2021).*

A female pharmacist has stated that her psychological wellbeing was the most negatively affected aspect of wellbeing and this was mainly due to missing her children.

- *I was not able to see my children. Feeling imprisoned and isolated (Female Infection control specialist, interview 2, 2021).*

Moreover, there were no clear guidelines and policies implemented by the Ministry of Health and Population. This was obvious also in different other countries, as stated in the literature. As mentioned before, nearly all countries have missed the first 2 steps of Disaster cycle management, and this was also stated by a health policy consultant. In addition, different HCPs have complaints about these unclear and blundering policies and how these affected their mental health and wellbeing negatively. The researcher tried to contact someone at the technical office of the

Minister of Health in September 2021 to get some of the decrees, which were issued during the pandemic to regulate the work of these HCPs inside the public isolation hospitals, and what has been mentioned is that there are no decrees for this, and it is prohibited to get such information.

- *Every day new decisions and decrees are issued, and they are not based on evidence (Male Internist, interview 5, 2021).*
- *There was a random decision-making process. Some decisions were sent to some places and not sent to other sites. (Male Dentist, interview 13, 2021).*

Due to these random decision-making processes, many HCPs felt the inequity in different policies implemented. This also triggers and increases the psychological distress they suffer from. As some mentioned, they got satisfactory financial compensations, while others have stated that they did not receive acceptable financial compensations.

On the other hand, HCPs working at Fever hospitals did not experience that level of psychological distress. They mentioned that they are used to getting in contact with patients suffering from different infectious diseases, they used to deal with patients with pneumonia, HIV, and other different kinds of serious contagious diseases. This made them able to be resilient when dealing with this new kind of infectious disease, COVID-19.

- *I did not suffer from any psychological stress or problems, we used to deal with more serious infections than COVID-19. I dealt with many pneumonic patients before (Female ICU pharmacist, interview 16, 2021).*
- *We were feeling that it is the same as any other infectious disease we are dealing with. As infection control specialists working at a Fever Hospital, we face many contagious*

diseases and deal with different infected patients daily (Female Infection control specialist, interview 1, 2021).

- *I was not afraid at all. We always face different infectious diseases and deal with them effectively (Female Dispensing pharmacist, interview 15, 2021).*

Although those who worked at fever and chest hospitals have not suffered from that high level of psychological stress, as mentioned by different interviewees, respondents expressed their need for psychological support in different ways. To deal with the palpable levels of stress and anxiety experienced at the Isolation hospitals, many reported on the need for counseling services. Still, these services were mostly unavailable for the HCPs.

- *There were no psychologists at the hospital (Female Infection control specialist, interview 2, 2021).*
- *A psychologist came and spent only one day [at the hospital]. She did not like the accommodation and left (Female Manager of an isolation hospital, interview 6, 2021).*

Meanwhile, as stated by different interviewees, the maximum psychological support received was from the managers who occasionally passed on words of encouragement to motivate their employees.

- *My managers were very supportive with positive and motivating words of appreciation, but there were no counseling sessions or psychologists offering this service (Female Infection control specialist, interview 1, 2021).*

Finally, Counseling services, if available, were for the in-patients, not the HCPs, although many expressed the need for these services and that they were suffering from prolonged periods of stress. The respondents talked about the lack of psychologists on board, and one reported on

how a psychiatrist came to the Isolation hospital, but that his stay did not extend beyond one day, as he did appreciate the quality of the accommodation provided.

4.7. Life Satisfaction:

The interviewed healthcare policy consultant has stated that this aspect is the most important one during the COVID-19 pandemic, and it is a holistic one that encompasses all other aspects of wellbeing. He found that if those HCPs are working at a place that provides them with fair compensations, and career development sessions, they are physically good; therefore, their well-being will be positively affected and never deteriorated. Life satisfaction is related to the last level of needs on Maslow's hierarchy as proposed by the researcher; thus, it is reached after satisfaction of all the previous needs levels to reach the full potential.

- *Life satisfaction is a holistic aspect of well-being that is fulfilled after fulfilling all the other aspects (Male Health policy consultant, interview 14, 2021).*

Another point is that the area of unknown, that we are dealing with something we do not know, and the level of uncertainty is not precise.

- *The circle around us is not clear, and the area of unknown increases, and the fear and doubts increase; therefore, the wellbeing decreases when this is going to end (Male Health policy consultant, interview 14, 2021).*

One core dimension of wellbeing has to do with feelings of satisfaction about what one has achieved in life. Respondents' opinions varied a great deal in that respect.

- *Finally, people recognized your essential role in society and appreciated it. I was so proud (Female Clinical pharmacist, interview 3, 2021).*

One respondent talked about how working at the Isolation hospital, people started recognizing his importance in society and appreciated what he was doing more than ever before. This made him very proud of his work. However, these feelings of pride and satisfaction with life were not shared by all respondents. A few talked about the diminishing quality of life, how everything necessary to them in life had stopped, and how they felt what they were doing at work was useless partially because of the stigma bestowed upon them by their fellow citizens.

- *We were not satisfied with our lives. Our lives just paused. Many HCPs working at isolation hospitals were finding their work useless due to the stigma they suffered from (Male Neonatologist, interview 8, 2021).*
- *The quality of life decreased (Male Psychiatrist, interview 9, 2021).*
- *Many HCPs working at isolation hospitals found their work was useless due to the stigma they suffered from all these in turn negatively affect their psychological well-being (Male Neonatologist, interview 8, 2021).*

Many respondents found that they were stuck and are not able to live their normal life. As healthcare professionals are constantly working on themselves, learning more, acquiring new knowledge and degrees, which all have just paused and stopped during the pandemic. This negatively affected their esteem and development needs, their life satisfaction; besides, feeling not appreciated leads them to be unsatisfied.

Thus, life satisfaction aspect has differed among different HCPs. Some found that they are now grateful for every single thing and moment in their lives after COVID-19 and that all levels of needs are fulfilled and satisfied with those basic things reaching their full potential. Others found that it has considerably deteriorated and were not satisfied at all. However, it was stated clearly by different HCPs that anxiety was the key player of this point, and it negatively affected their satisfaction and gratefulness during their work at isolation hospitals.

4.8. Domain-Specific Satisfaction:

Another dimension of well-being is satisfaction related to a specific domain in life; in that case, it is work-focused. Again, the respondents differed in how and to what extent they derive satisfaction, and feelings of well-being from their work at the Isolation hospitals. Domain specific satisfaction is related to the fourth level of needs as conceptualized by the researcher. It is enhanced by the fulfillment of the esteem needs on Maslow's hierarchy with achieving self-esteem and accomplishment.

- *Seeing a patient discharged from the hospital was very cheerful for us (Female Clinical pharmacist, interview 3, 2021).*
- *I have many WhatsApp messages from different patients thanking me and praying for me. (Female Infection control specialist, interview 2, 2021).*
- *I learned a lot during my work at the isolation hospital. I felt my work is a national mission. (Female Infection control specialist, interview 2, 2021).*
- *I was named 'The king of the Isolation' as I worked during the four waves (Male Neonatologist, interview 8, 2021).*
- *I felt I was a warrior (Male Physiotherapist, interview 12, 2021).*

- *I felt a sense of accomplishment (Female Manager of an isolation hospital, interview 6, 2021).*

One group talked very positively about their work and how, despite all the difficulties encountered, they still managed to derive satisfaction from it. There were a number of sources for work-related satisfaction. On top of the list was the patients' expression of gratitude and appreciation and seeing patients get discharged from the hospital. Additionally, some felt a huge sense of accomplishment, using words to describe themselves as 'warriors' or 'kings' on a national mission.

- *The psychological stress I suffered made me unable to feel this sense of accomplishment. I was thinking about when I am going to finish all this and get out of here (Female Clinical pharmacist, interview 7, 2021).*
- *I will not repeat the experience of working at the isolation hospital again (Female Vice-president of an isolation hospital, interview 10, 2021).*

However, not all the HCPs shared these positive feelings. On the contrary, some shared how they failed to feel any sense of accomplishment and were very keen to get out of the Isolation hospital as soon as possible and vowed never to repeat this type of work ever again.

4.9. Engaging activities and Work:

This dimension of wellbeing has to do with engaging activities at work. Respondents talked mostly about their relationships with their managers and how it was lacking in several aspects.

- *My manager was not available...he stayed at his accommodation, and we did not get to see him at all except during a formal visit to the hospital (Female Infection control specialist, interview 2, 2021).*
- *Managers were mainly focusing on statistics and on resolving problems such as oxygen shortage (Female Vice-president of an isolation hospital, interview 10, 2021).*

Either the manager was not available for his employees as needed or was busy and overwhelmed with the different responsibilities bestowed upon him during the pandemic.

- *There was a tense relationship between the HCPs and the admin persons as they were not cooperative (Female Infection control specialist, interview 4, 2021).*

The end result of the lack of availability of the manager to guide and support his employees was a tense uncomfortable relationship.

Another point is that they reported that the pandemic has stopped their lives. All what they were doing has just paralyzed. Some were doing their master's degrees, others were doing their PhDs, some were having their training for completing their medical degree, and these all just paused.

- *All medical students at their internship year were just sent to work at isolation hospitals regardless their specialties (Male Neonatologist, interview 8, 2021).*
- *My postgraduate degree I was enrolled in stopped for some time, and when I returned, I could not complete it due to my work at the isolation hospital (Female Clinical pharmacist, interview 3, 2021).*

In addition, some were used to exercise daily, which was not available at isolation hospitals.

- *I used to exercise daily whether running or cycling; however, I have stopped once I started working at the isolation hospital due to the workload and being isolated inside the hospital (Female Clinical pharmacist, interview 3, 2021).*

Finally, many interviewees have supported working on this research. They found that it is an important point the governments should take care of and focus on during the upcoming pandemics, which is underestimated. They found that different aspects of wellbeing mentioned above have been greatly affected negatively and in turn, affect their safety and patients' safety, as mentioned in the literature.

- *Applause for the research topic (Female Clinical pharmacist, interview 7, 2021).*
- *I want to thank you for working on this critical topic, which is underestimated and unrecognized (Female Dispensing pharmacist, interview 15, 2021).*
- *I want my voice to reach managers to work on a better working environment for us, appreciate our sacrifices, and take into consideration our families and children (Female ICU pharmacist, interview 16, 2021).*
- *I accepted to participate in this research to inform the policymakers about our suffering to work on clear policies that help protect HCPs working at the isolation hospitals (Female Clinical pharmacist, interview 7, 2021).*

4.10. Recommendations by HCPs:

According to the interviewed health policy consultant, to decrease the impact of such a pandemic, we have to apply the 4S system: Space, Staff, Supplies, and System. Space: there is a space where HCPs can work in and stay in, Staff: the staff number is enough and acceptable and

well trained, Supplies: they have the required PPEs, PCR tests, Medications, finally the system: which is mainly the guidelines and policies. So, if one of these is affected the most negatively affected personnel are the HCPs. According to Maslow's hierarchy, these 4S are related to different needs levels as proposed by the researcher. Space is associated with the physiologic needs; the staff is related to security and esteem needs. Supplies are related to security needs. Finally, System is pertaining to esteem and self-actualization needs. Therefore, we have to target these 4S while recommending different policies for overcoming the negative impact of COVID-19.

He stated that the primary policies implemented by the government, which could be considered targeting HCPs' wellbeing, were the media campaign at the beginning of the pandemic and being mentioned as the "White Army"; besides, highlighting their crucial role. The second one is the financial compensations that were assigned to those who worked at the isolation hospitals.

Respondents' point of view supported the 4S mentioned by the interviewed health policy consultant as they have ranked the most important aspects of well-being; they considered policymakers should be aware of and should work on it during the pandemics for protecting the wellbeing of those front lines. They stated that psychological wellbeing is the most essential aspect of wellbeing to be enhanced and protected; further, it is fragile to be negatively affected with any deficiency or shortage of this 4S.

- Psychological wellbeing is the key word, HCPs who got infected, their cases were deteriorated due to the anxiety they suffered from. Their cases were stable, but once they started getting worried, their status worsened (Male Psychiatrist, interview 9, 2021).

- Psychological wellbeing, the sense of fear was high, we all need the sense of reassurance, as the COVID-19 was like an unknown we were dealing with. We were so afraid on our families and getting to infect them. Isolation and loneliness affected mental health leading to depression. Those who lost someone or got infected were also suffered from psychological problems. The COVID-19 affected the psychology of nearly all humans (Female Vice-president, interview 10, 2021).

The second aspect to work on, according to interviewed HCPs, is physical well-being. They argued that if they are not physically well, they will not be able to carry out their responsibilities and take care of themselves and their patients.

- Physical well-being: If I lost my physical well-being, I will not be able to function and do what is required. My health is the most important thing during the pandemic as during my work at the isolation hospital, I saw how the disease destroyed healthy, active, and young people leading them to death (Female Clinical pharmacist, interview 3, 2021).*
- Psychological and Physical wellbeing, due to the number of patients who died, and the stress of the workload was very exhausting (Female Clinical pharmacist, interview 7, 2021).*

The third aspect, as recommended, was the economic wellbeing as they found that this aspect is related to their psychological wellbeing by feeling appreciated; besides, it will help them in covering the expenses of the pandemic and feeling relaxed and not worried about their financial security; therefore, being able to take care of themselves and their patients. Furthermore, it could help the female doctors to cover their childcare expenses.

Development and activity, they considered it crucial aspect of well-being during the pandemic for them. They considered that development and activity is important for all HCPs whether during the pandemics or after it for the safety of themselves and their patients.

Finally, social wellbeing was declared to be of great importance for those front lines during the pandemic that policymakers have to work on different policies to positively affect this aspect.

- *Social wellbeing, during my work at the isolation hospital I was looking for support from my friends, and neighbors, although, this did not happen. I was sacrificing and in the front line; however, they did not appreciate it (Male Neonatology, interview, 8, 2021).*

The other remaining aspects of wellbeing were all at the same rank for those HCPs. They stated that taking care and protecting the recommended aspects will help them to combat the pandemic and other upcoming pandemics that we may face in the future.

4.10.1 Psychological Wellbeing:

Interviewees have recommended some solutions depending on their work experiences at the isolation hospitals. Psychological support was listed as the most important priority and was requested by nearly all interviewees. Organizing counseling sessions and/or providing a psychologist in every Isolation hospital were perceived as very crucial measures during the pandemic. The statements quoted below clearly express this need.

- *Psychological counseling sessions should be provided for all HCPs. When it was left when needed, it was not properly used, as some HCPs considered this could affect their reputation and put them under stigmatization... maybe also they do not know how the psychologist could help (Female Clinical pharmacist, interview 7, 2021).*

- *[There is a need for] providing a psychologist offering counseling sessions for HCPs working in isolation hospitals (Male Physiotherapist, interview 12, 2021)*
- *The psychological support [has] to be continued...the media [needs to] focus on supporting all HCPs in their work (Female Clinical pharmacist, interview 3, 2021).*
- *Psychological counseling sessions should be obligatory on all HCPs working at isolation hospitals, it is not an option during this period (Female Dispensing pharmacist, interview 15, 2021).*

A Health Policy Consultant has recommended this as a priority for healthcare professionals. He stated that anxiety is an important problem that those professionals face during the isolation and the pandemic. This could be achieved by making their lives better inside the hospital by providing their basic needs of a good place to sleep in, good quality food to eat, and a place to spend a fun time in it.

- *An acceptable place to sleep, luxurious food, and a place to have fun (Male Health policy consultant, interview 14, 2021).*

One of the interviewees asked for making psychological counseling obligatory to all HCPs as sometimes they may shy from making use of this service, either out of a lack of understanding of how it may help them or because they are afraid of being stigmatized by a society that has little understanding of psychology and mental health.

Some suggested organizing some fun activities, which they thought might help in overcoming the high level of psychological stress they suffer from. Moreover, a healthcare policy consultant has recommended providing different entertainment areas or equipment for HCPs, and they are able to make good use of these entertainment areas or equipment. He suggested having some fitness equipment, which will help them save their physical well-being and their mental health and

psychological well-being. Other entertainment equipment could help them socialize with each other and positively affect their mental and psychological health.

- *Providing PlayStation for male HCPs, giving them gifts, holding parties for HCPs, bringing their children outside the hospital to see them, and asking them about what would help them to be happy and help them to continue their work (Female Infection control specialist, interview 2, 2021).*
- *Implementing entertainment programs, psychological consultations, providing some TVs, and flexibility in the working or shift hours (Female Vice-president of an isolation hospital, interview 10, 2021).*
- *Just provide HCPs with entertainment areas or equipment and they are very good at playing with each other and having fun (Male Health policy consultant, interview 14, 2021).*

A Health Policy Consultant stated that during wars, actors, singers, and other celebrities used to support the army and visit them; besides, making some enthusiastic songs to help them in their battle against their enemy. He recommended that celebrities do this during the pandemics instead of staying at their homes and uploading videos supporting HCPs and then attending parties and festivals.

- *Celebrities could work on a supporting campaign for supporting the white army. This campaign visits different isolation hospitals, singing for them from even outside the hospital just to show their support and appreciation to those first liners (Male Health policy consultant, interview 14, 2021).*

A couple of the interviewed HCPs asked for some job perks, like access to a T.V. and even PlayStations for entertainment purposes while they were resting from the long work shifts.

4.10.2. Physical Wellbeing:

Many respondents have recommended a place to exercise or have fun. They found that this is an essential step for their physical wellbeing during the pandemic. Some have suggested to put sports tool for just refreshing them, others recommended having an open area to play football, basketball, or handball.

- *I suppose that providing two or three treadmills in each hospital would help in maintaining HCPs Physical wellbeing (Female Infection control pharmacist, interview 2, 2021).*

Accordingly, many respondents have highlighted the importance of the working hours and shifts. They found this is the main point behind affecting their physical wellbeing negatively. This leads them to be deprived of their basic needs according to Maslow's hierarchy, which includes both the physiologic and the security needs. They recommended to work for less working hours and to work on policies for increasing the staff available as different countries have done as mentioned previously in the literature review chapter.

4.10.3. Economic Wellbeing:

To improve their wellbeing, the third main recommendation that featured prominently in the HCPs interviews was related to financial compensations. They suggested that these compensations should be continued after the pandemic as an appreciation or recognition of their sacrifices.

- *The second point is to provide satisfactory financial compensation as part of an appreciation for those HCPs for their sacrifices (Male Physiotherapist, interview 12, 2021).*
- *They must work on the financial compensations and the resources in the hospital for a better work environment. They must appreciate their role after those two years of work during the pandemic (Female Manager of an isolation hospital, interview 6, 2021).*
- *Satisfactory financial compensations (Female Vice-president of an isolation hospital, interview 10, 2021).*

4.10.4. Development and Activity:

Some interviewees focused on development and activity as an important aspect to work on during the pandemic. This could help them feel that they are appreciated, and their career development matters to the leadership. One interviewee recommended that those who work at isolation hospitals could be rewarded with online courses in their specialty instead of the financial compensation. Another suggested these online sessions to be interactive ones instead of only giving such a bunch of knowledge without any interaction.

- *Interactive online sessions such as case studies and open discussion lectures are more beneficial than these one-way information and knowledge paths (Female Dispensing pharmacist, interview 15, 2021).*
- *They could provide online courses with certificates for those who work at isolation hospitals as part of a reward system for their sacrifices (Female ICU pharmacist, interview 16, 2021).*

In contrast, others found this is useless during the pandemic, and policies should work on building capacities before the pandemics and be prepared for such disasters.

- I do not want them to develop me during my work at the isolation hospital. I am already stressed and depressed. I need them to work on me before or after this period. I already depended on self-learning during the COVID-19 Pandemic (Female Infection control specialist, interview 2, 2021).

4.10.5. Social Wellbeing:

Leadership support, better workload management, and expression of appreciation for HCPs were also among the perceived recommended measures for improving their overall well-being.

- Recognition and appreciation parties to be held for HCPs... our manager has done one for us after the 1st wave by making a cake for us in the shape of a medical coat (Female Clinical pharmacist, interview 3, 2021).*
- In Saudi Arabia, they made badges for HCPs, who worked at the isolation hospitals as a recognition of their sacrifices. We can apply this here in Egypt by offering [HCPs] some privileges for the sake of appreciation and praise (Female Clinical pharmacist, interview 3, 2021)*
- Leaders should act as role models, supporting them [HCPs] and their families during their infection; besides, providing the basic physiological needs (Female Vice-president of an isolation hospital, interview 10, 2021).*
- The shift numbers are to be decreased (Female Clinical pharmacist, interview 3, 2021).*

- *Human resources to overcome the workload and long working hours, which causes stress to HCPs (Female Clinical pharmacist, interview 7, 2021).*

Finally, the interviewed HCPs mentioned that the media should really be doing a better job supporting them, increasing their resistance during the pandemic, and appreciating their sacrifices. A health policy consultant found that they should stay away from media and from screens as well. He has mentioned that screens have negative effects on us and on our mental health; therefore, it is better for them to keep themselves away from social media and other kinds of media for better wellbeing. This was also mentioned by W. Wu et al. in 2020 by recommending reducing media consumption of healthcare workers as it affects their mental health during the pandemic.

- *The media [should] focus on supporting all HCPs in their work (Female Clinical pharmacist, interview 3, 2021).*
- *Social support, we need support from society. Some social trends [concerts and parties organized and publicized by the media] badly affected HCPs working in isolation hospitals. I recommend that the media must work on this point (Male Neonatologist, interview 8, 2021).*

Several interviewees emphasized how the media should have a more responsible role in supporting them and creating a higher level of societal awareness. One interviewee was explicitly upset with how the media focused on publicizing crowded concerts attended by unmasked participants while the HCPs were fighting for life in the Isolation hospitals.

CHAPTER FIVE: POLICY RECOMMENDATIONS AND CONCLUSION:

5.1. Recommendations:

After reviewing the relevant literature dealing with HCPs working during the Covid-19 pandemic, and after presenting the status of wellbeing for HCPs working in Isolation hospitals in Egypt based on the in-depth interviews carried out, and the different dimensions of wellbeing they relate to, a number of policy recommendations for improved wellbeing of HCPs can be identified. Some of them were discussed and emphasized in the literature, and some were derived from the field interviews and are more context-specific to the Egyptian environment. The same comprehensive framework of wellbeing (CDC, 2018) will be utilized in presenting the recommendations. Still, the dimensions will be listed according to the priority accrued to them by the interviewed HCPs working in the Isolation hospitals in Egypt.

5.1.1 Psychological Wellbeing:

Psychological support and counseling services should be made available to all the HCPs, not only the inpatients at the hospitals. Additionally, counseling services may be offered to all HCPs as a job requirement. This is to overcome the situation on the ground where some HCPs may shy away from using these services or may be afraid of getting stigmatized. The Egyptian Ministry of Health and Population had established two hotlines to serve the psychological needs of HCPs, but more is needed. Earlier literature reviews reported on how there is a correlation between the HCPs' mental health and patients' safety.

5.1.2. Physical Wellbeing:

There is a need to check all the different aspects related to the physical wellbeing of the HCPs and where there were occasionally reported shortages, including making available places in hospitals for HCPs when they get infected by COVID-19 and need treatment, providing suitable accommodation in Isolation hospitals, providing sufficient access to PPEs at all times, giving HCPs access to vitamins and immunity boosters as needed, better workload assignments, reduced work hours, rest areas, and imposing strict measures regulating proper isolation of in-patients to prevent spreading of the infection.

5.1.3. Economic Wellbeing:

HCPs called for satisfactory financial compensation to continue beyond the duration of the pandemic in appreciation. The interviewed HCPs were mostly satisfied with the bonuses received during their work at the Isolation hospital. The Government of Egypt had established a Risk Compensation Fund for HCPs early on during 2020. Still, there is a need to revise the whole compensation package for HCPs in Egypt which may be one of the reasons for the currently witnessed drop in numbers of physicians per capita compared to other countries in the MENA region.

5.1.4. Development and Activity Wellbeing:

The training provided to the HCPs in the Isolation hospitals mostly focused on how to deal with the PPEs. This is important, but more capacity building is required in core areas of work. The physicians working at the Isolation hospitals come from different specializations; therefore, they need orientation and education related to how to deal with

the Covid-19 patients. They also need an opportunity to continuously develop their knowledge and skills in their specific area of specialization.

5.1.5. Social Wellbeing:

Interviewed HCPs called for more effective support and mentoring by their leaders. Managers in Isolation hospitals in Egypt should receive coaching on effective leadership skills. On a more pragmatic basis, they should be relieved from the excessive workload related to statistical reporting and crisis management to have more time to support their subordinates. The role of effective leadership was ascertained in the literature surveyed. Additionally, to help HCPs maintain better social relations with family and friends, there is a need to create more societal awareness about the important role they play. Therefore, family and friends need to be more understanding and tolerant and refrain from stigmatizing HCPs.

5.1.6. Life Satisfaction:

There is a need for more appreciation by society at large and the media for the role played by the HCPs during the pandemic. In Egypt, the HCPs were referred to, especially at the beginning of the pandemic, as the ‘White Army’ in recognition of their vital role in fighting the pandemic, but currently, attention is waning.

5.1.7. Emotional Wellbeing:

Dealing with the pandemic and with death has never been easy. Besides, providing access to the internet for those professionals to get in contact with their family and children. Moreover, providing safe places for female HCPs to leave their children at i.e., childcare places. Here again, the role of psychological counseling needs to be emphasized.

5.1.8 Domain-Specific Satisfaction:

The work of HCPs is crucial and important, and this message should always be communicated to them to help them gain more satisfaction related to their job.

5.1.9 Engaging Activities:

There is a need to provide the HCPs with opportunities for recreational activities during their rest time at work to help them get through the everyday challenges.

5.2. What has been done so far?

Egyptian Government Implemented Policies for the standing pandemic and the upcoming ones:

As mentioned before, the four steps for the disaster management cycle are Mitigation, Planning, Response, and Recovery. The Egyptian government has worked on these steps in order to be able to combat further pandemics that we may face. Law no. 152/ 2021 has been issued on November 29th, 2021, by President Abdelfattah Al Sisi to specify measures to confront epidemics and health pandemics. The law has made good use of what the Egyptian government has faced during the COVID-19 pandemic and stated some policies to be able to effectively and efficiently manage any upcoming pandemics that we may face in the future. Many points in this law directly affect healthcare professionals' wellbeing and mental health (Law no. 152/ 2021).

On 8th December 2021, the Higher Committee for management of Epidemics and Health Pandemic Crises issued decree no. 1/ 2021, which obligates wearing masks in all public transportations, public centers, and other public closed places, prohibiting the access of unvaccinated citizens to different public areas; besides, celebrating weddings or establishing condolences in closed places. Moreover, it prohibits the access of people coming from abroad without making sure of being vaccinated. This decree is part of the disaster management cycle of the Egyptian government to combat the pandemic and the upcoming pandemics that we may face in the future.

5.3. Conclusion:

The wellbeing of HCPs is paramount to our ability to fight the pandemic. Through adopting the comprehensive definition of wellbeing presented by the CDC and operationalizing it to fit the context of HCPs working in Isolation hospitals in Egypt, the study managed to assess the situation on the ground for the different dimensions of HCPs wellbeing, either fulfilled or compromised, according to the Maslow's hierarchy of needs. While many were proud of their mission, appreciated the patients' gratitude and the additional financial compensation received, in many cases the physical, psychological, emotional, developmental, domain-specific satisfaction, and social dimensions of their wellbeing were not fulfilled. Many recommendations for improved wellbeing of HCPs, especially during the pandemic period, were provided in the literature, and several context-specific recommendations were gleaned from the interviews in the field. HCPs are our first line of defense against the still lingering COVID-19 pandemic, and their wellbeing should be of the utmost importance and should be given priority, especially by policymakers. The Egyptian government has learned a lesson from the COVID-19 pandemic and started to prepare for management of the future pandemic that we may face by issuing a new law (Law no. 152/2021) for combating pandemics and epidemics, which covers the first step of the disaster cycle management. Planning and response for the upcoming pandemics could be achieved by integrating Maslow's hierarchy of needs to the policies developed and aligning it with HCPs needs during the pandemics. Developing policies for those frontline workers depending on their needs will help them to survive during the pandemics and ensure a strong and stabilized healthcare system for better management of the patients and the pandemic.

5.4. Future Research Directions:

The pandemic is still ongoing, and people are struggling to understand what some are referring to as the 'New Norm'. Meanwhile, more research is needed to understand how HCPs' wellbeing can be better fulfilled. The little research on HCPs and Covid-19 in Egypt has been published mainly in medical journals, which shows the need for more policy and management-oriented research. Depending on HCPs recommendations for enhancing and promoting their wellbeing, a policy framework should be developed for better wellbeing of those HCPs working at public isolation hospitals in Egypt. This framework depends on the RPO model, which is Resources, Process, and Outcome. The resources are human, finance, and IT ones. The process to work on different legislations for combating this pandemic,; moreover, the outcome to set SMART KPIs. This framework is going to be the base for recommending different policies for combatting the negative effects of the pandemic on the wellbeing of those HCPs working at public isolation hospitals in Egypt. Further research is recommended to quantify these qualitative findings, this could be by depending on the SF36 health survey. One concrete suggestion may be linking the study of HCPs' well-being to the field of Organizational Behavior and specifically to the study of Motivation theories.

References

- Abdel Salam, Walid (2020, 20 Dec.). "With Names..Ministry of Health transforms 30 hospitals in Cairo to Isolation Hospitals to receive Corona Cases", Youm7 News. By Names: Converting 30 Hospitals in Cairo to Isolation Hospitals for COVID-19 Patients.
- Ahram Online (2021, 19 April). "Egypt's Doctors Syndicate urges health ministry to accelerate vaccinations for medical staff after spike in deaths". *Ahram Online*.
<https://english.ahram.org.eg/NewsContent/1/64/409515/Egypt/Politics-/Egypts-Doctors-Syndicate-urges-health-ministry-to-.aspx>
- AlTakarli, N. S. (2020). China's Response to the COVID-19 Outbreak: A Model for Epidemic Preparedness and Management. *Dubai Medical Journal*, 3(2), 44–49.
<https://doi.org/10.1159/000508448>
- Bajo, Miriam et al (2021). "Anxiety, trauma and well-being in health-care professionals during COVID-19 first wave in Spain: the moderating role of personal protection equipment availability", *Health and Quality of Life Outcomes*, 19: 207.
- Bennett, Paul et al (2020). "Covid-19 confessions: a qualitative study exploration of healthcare workers experiences of working with COVID-19", *BMJ Open Access*.
doi:10.1136/bmjopen-2020-043949
- CDC (n.d.). "Health-Related Quality of Life (HRQOL)", Centers for Disease Control and Prevention. <https://www.cdc.gov/hrqol/wellbeing.htm#three> . Accessed on 25 April, 2021.
- CDC (2018). "Well-Being Concepts", Centers for Disease Control and Prevention. Accessed 28 Sep. 2021. <https://www.cdc.gov/hrqol/wellbeing.htm#three>
- Dabholkar, Yogesh G. et al (2020). "COVID19 Infection in Health Care Professionals: Risks, Work Safety and Psychological Issues", *Indian Journal of Otolaryngology and Head & Neck Surgery*, 72, 468-473.
- Coccolini, F., Sartelli, M., Kluger, Y., Pikoulis, E., Karamagioli, E., Moore, E. E., Biffi, W. L., Peitzman, A., Hecker, A., Chirica, M., Damaskos, D., Ordonez, C., Vega, F., Fraga, G. P., Chiarugi, M., Di Saverio, S., Kirkpatrick, A. W., Abu-Zidan, F., Mefire, A. C., ... Catena, F. (2020). COVID-19 the showdown for mass casualty preparedness and management: The Cassandra Syndrome. *World Journal of Emergency Surgery: WJES*, 15(1), 26. <https://doi.org/10.1186/s13017-020-00304-5>
- Corona victims exceeded 500 deaths among physicians | Egyptian Initiative for Personal Rights*. (n.d.). Retrieved December 17, 2021, from
<https://eipr.org/en/press/2021/05/corona-victims-exceeded-500-deaths-among-physicians>

Decree for compensations for infected and dead HCPs. (n.d.). RT Arabic. Retrieved December 26, 2021, from https://arabic.rt.com/middle_east/

Di Tella, Marialaura, Annunziata Romeo, Agata Benfante & Lorys Castelli (2020). “Mental health of healthcare workers during the Covid-19 pandemic in Italy”, *Journal of Evaluation of in Clinical Practice*, 26(6), 1583-1587.
<https://onlinelibrary.wiley.com/doi/full/10.1111/jep.13444>

Egypt's continues providing aid to world to fight COVID-19 pandemic. (2021, February 10). *EgyptToday*. <https://www.egypttoday.com/Article/1/98466/Egypt-s-continues-providing-aid-to-world-to-fight-COVID>

Egypt's Doctors are Fleeing, Leaving Behind a Physician Shortage. (2019, July 29). *Al-Fanar Media*. <https://www.al-fanarmedia.org/2019/07/egypts-doctors-are-fleeing-leaving-behind-a-physician-shortage/>

Egypt's Grand Mufti: Refusal of burying deceased COVID-19 patients forbidden religiously. (2020, April 11). *EgyptToday*. <https://www.egypttoday.com/Article/1/84570/Egypt's-Grand-Mufti-Refusal-of-burying-deceased-COVID-19-patients>

Egypt's illiteracy rates stand at 25.8% in 2017: CAPMAS. (2018, September 8). *Egypt Independent*. <https://cloudflare.egyptindependent.com/egypts-illiteracy-rates-stand-at-25-8-in-2017-capmas>

Egypt to double health spending in FY2020-2021. (n.d.). *Enterprise*. Retrieved January 31, 2022, from <https://enterprise.press/stories/2020/02/09/egypt-to-double-health-spending-in-fy2020-2021-11500/>

El Baradei, Laila, Mohamed Kadry & Ghadeer Ahmed (2021). “Governmental Social Media Communication Strategies during the Covid-19 Pandemic: The Case of Egypt”, *International Journal of Public Administration*, 44(11-12), 907-919. <https://www.tandfonline.com/doi/full/10.1080/01900692.2021.1915729>

El Barbary, Nancy Samir et al (2020). “Covid-19 Outbreak and pediatric diabetes: Perceptions of health care professionals worldwide”, *Pediatr Diabetes*, 21: 1083-1092.

El Guindy, Zeinab (2021, 26 September). “600 Egyptian doctors dead since the start of the pandemic: Egypt's Medical Syndicate”, *Ahram Online*.

<https://english.ahram.org.eg/NewsContentP/1/423827/Egypt/-Egyptian-doctors-dead-since-start-of-the-pandemic.aspx>

Falah, El Sayed (2020, 2 June). “Chest Isolation Hospital in Ismaileya Receives 11 Corona Patients”, *Youm7 News* [Chest Hospital in Ismailia Recieveing 11 COVID-19 Patients](#)

Ghannam, Alaa & Ayman Sebae (2021). Healthcare Protection Policies during the Covid-19 Pandemic: Lessons towards the Implementation of the New Egyptian Universal Health Insurance Law. Social Protection in Egypt: Mitigating the Socio-Economic Effects of the Covid-19 Pandemic on Vulnerable Employment, http://fount.aucegypt.edu/faculty_journal_articles/876

Gomaa, Ahmed (2021, 25 April). “After the talk about their role and the number of martyrs...the physicians attack the Minister of Health”, *Masrawy.com*. (In Arabic). https://www.masrawy.com/news/news_egypt/details/2021/4/25/2011783/

Hall, Louise H., Judith Johnson, Ian Watt, Anastasia Tsipa & Daryl B. O’Connor (2016). “Healthcare Staff Wellbeing, Burnout, and Patient Safety: A Systematic Review”, *PLOS One*, July 8. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0159015>

Harter, James K. et al (2003). Well-Being in the Workplace and Its Relationship to Business Outcomes: A Review of the Gallup Studies. https://www.researchgate.net/publication/237670380_Well-being_in_the_workplace_and_its_relationship_to_business_outcomes_A_review_of_the_Gallup_studies

Hassany, Mohamed et al (2020). “Estimation of Covid-19 burden in Egypt ", *The Lancet*, April 27. [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30319-4/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30319-4/fulltext)

Hayre-Kwan, S., Quinn, B., Chu, T., Orr, P., & Snoke, J. (2021). Nursing and Maslow’s Hierarchy: A Health Care Pyramid Approach to Safety and Security During a Global Pandemic. *Nurse Leader*, 19(6), 590–595. <https://doi.org/10.1016/j.mnl.2021.08.013>

Hennein, Rachel et al (2021). “Socio-ecological predictors of mental health outcomes among the healthcare workers during the COVID-19 pandemic in the United States”, *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0246602>

Healthcare professional. (n.d.). TheFreeDictionary.Com. Retrieved December 25, 2021, from <https://medical-dictionary.thefreedictionary.com/healthcare+professional>

Information, N. C. for B., Pike, U. S. N. L. of M. 8600 R., MD, B., & Usa, 20894. (2013). Definition and list of health professionals. In *Transforming and Scaling Up Health Professionals’ Education and Training: World Health Organization Guidelines 2013*. World Health Organization. <https://www.ncbi.nlm.nih.gov/books/NBK298950/>

Ivbijaro, Gabriele et al (2020). "Psychological impact and psychosocial consequences of the COVID 19 pandemic: Resilience, mental well-being and the coronavirus pandemic", *Indian Journal of Psychiatry*, 62:S395-403.

Jahan, Israt, Ifran Ullah, Mark D. Griffiths & Mohammed Mamu (2020). "COVID-19 suicide and its causative factors among the healthcare professionals: Case study evidence from press reports", *Perspectives in Psychiatric Care*, 1-5.

Jr, R. P. B. (2021, January 28). Policy and Institutional Responses to COVID-19 in the Middle East and North Africa: Egypt. *Brookings*. <https://www.brookings.edu/research/policy-and-institutional-responses-to-covid-19-in-the-middle-east-and-north-africa-egypt/>

Lei Chu & Zhanjun Xing, 2012. "[Research on constructing composite index of objective well-being from China mainland](#)," *Statistics in Transition new series*, Główny Urząd Statystyczny (Polska), vol. 13(2), pages 419-438, June.

Mahajan, Abhishk & Perit Sharma (2020). "COVID-19 and Radiologist: Image Wisely", *Indian Journal of Medical and Pediatric Oncology*, 41: 121-6.

Mawere, M., Mubaya, T., Reisen, M., & van Stam, G. (2016). *Maslow's Theory of Human Motivation and its Deep Roots in Individualism: Interrogating Maslow's Applicability in Africa*.

Measures to Combat Pandemics and Health Epidemics 2n, November 2021).
<https://manshurat.org/node/74758>

Medical Syndicate Support for HCPs to combat the pandemic, Egyptian Medical Syndicate Official Page/ *Facebook*. (n.d.). Retrieved December 26, 2021, from
<https://www.facebook.com/Egyptian.Medical.Syndicate/photos/a.318736581481090/2991957567492298/>

Michaelson, R. (2020, May 21). "It's a disaster": Egypt's doctors plead for more PPE and testing. *The Guardian*. <https://www.theguardian.com/global-development/2020/may/21/egypt-doctors-ppe-testing-coronavirus>

Modification of the working hours of cafeterias and café shops to be from 6 AM to 12 AM with application of all the precautionary measures. (2020, November 2)..
<https://manshurat.org/node/68255>

Nafady, Ahmed (2020, 13 June). "Eighty-Five ICU Beds and Seventy-Two Ventilators in Eight Hospitals to receive Corona Patients", *Ahram Gate*.
<https://gate.ahram.org.eg/News/2427075.aspx>

O'Dowd, Emily et al (2018). "Stress, coping and psychological resilience among physicians", *BMC Health Services Research*, 18: 730.

<http://web.a.ebscohost.com.libproxy.aucegypt.edu:2048/ehost/pdfviewer/pdfviewer?vid=1&sid=c3931d65-c8a1-498f-9f29-1dddcd7be8b9%40sessionmgr4008>

Policy and Institutional Responses to COVID-19 in the Middle East and North Africa: Egypt. (n.d.). Retrieved January 5, 2022, from <https://www.brookings.edu/research/policy-and-institutional-responses-to-covid-19-in-the-middle-east-and-north-africa-egypt/>

Poonian, Jasmine et al (2020). “Managing healthcare worker well-being in an Australian emergency department during the Covid-19 pandemic”, *Emergency Medicine Australasia*, 32, 700-702.

Psychological impact and psychosocial consequences of the COVID 19 pandemic Resilience, mental well-being, and the coronavirus pandemic. (n.d.). Retrieved January 5, 2022, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7659783/>

Ramadan, Ragab (2020, 4 May). “Third Isolation Hospital in Alexandria getting ready to receive Corona Patients”, *Almasryalyoum News*
<https://www.almasryalyoum.com/news/details/1974538>

Scholarships for Martyrs HCPs’ sons for their sacrifices during COVID-19. (n.d.). Retrieved December 26, 2021, from https://www.masrawy.com/news/news_egypt/

Schutle, Paul A. et al (2015). “Considerations for Incorporating “Well-Being” in Public Policy for Workers and Workplaces”, *American Journal of Public Health*, 105 (8), 31-44.

Soares, Deanne S. & Lewis Chan (2016). “Stress and wellbeing of junior doctors in Australia: a comparison with American doctors and population norms”, *BMC Medical Education*, 16: 183. <https://bmcmmededuc.biomedcentral.com/track/pdf/10.1186/s12909-016-0693-2.pdf>

Suspending International Aviation at all Egyptian Airports starting from March 19, 2020 till March 31, 2020 to combat Corona Virus (22, October, 2020)
<https://manshurat.org/node/68059>

The crucial role of physiotherapists in COVID-19 recovery | Pursuit by The University of Melbourne. (n.d.). Retrieved December 17, 2021, from <https://pursuit.unimelb.edu.au/articles/the-crucial-role-of-physiotherapists-in-covid-19-recovery>

The Public Prosecution, The General Public Prosecutor’s Office, Media and Guidance Administration, A declaration of the public prosecution, Published on the public prosecution official Facebook page, available at <https://www.facebook.com/ppo.gov.eg>

Teoh, Kevin Rui-Han, Juliet Hassard & Tom Cox (2021). “Doctors’ working conditions, wellbeing and hospital quality of care: A multilevel analysis”, *Safety Science*, 135, 1-10.

<https://www-sciencedirect-com.libproxy.aucegypt.edu/science/article/pii/S0925753520305129?via%3Dihub>

Wang, Cuiyan et al (2020). “Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (Covid-19) Epidemic among the General Population of China”, *International Journal of Environmental Research and Public Health*, 17, 1729. doi:10.3390/ijerph17051729

What strategies are countries using to expand health workforce surge capacity to treat COVID-19 patients? – Cross-Country Analysis. (n.d.). Retrieved December 17, 2021, from <https://analysis.covid19healthsystem.org/index.php/2020/04/23/what-strategies-are-countries-using-to-expand-health-workforce-surge-capacity-to-treat-covid-19-patients/>

WHO (2020). “WHO Director-General’s opening remarks at the media briefing on COVID-19”, 11 March. [WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020](#)

Williams, Gemma A. et al (2020). “How are countries supporting their health workers during Covid-19?”, *Eurohealth*, 26 (2).
<https://apps.who.int/iris/bitstream/handle/10665/336298/Eurohealth-26-2-58-62-eng.pdf>

Wong, Adrian et al (2020). “Staff wellbeing in times of Covid-19”, *Journal of the Intensive Care Society*, first published 28 October.
<https://doi.org/10.1177%2F1751143720968066>

Worldometer (29 September, 2021). “Total Coronavirus Cases in Egypt”.
<https://www.worldometers.info/coronavirus/country/egypt/#:~:text=Egypt%20COVID%3A%20302%2C327%20Cases%20and%2017%2C224%20Deaths%20%2D%20Worldometer>

Wu, Albert W., Peter Buckle, Elliott R. Haut, Tomasso Bellandi, Shunzo Koizumi, Alpana Mair, John Øvretveit, Chris Power, Hugo Sax, Eric J. Thomas, David Newman-Toker & Charles Vincent (2020). “Supporting the emotional wellbeing of healthcare workers during the COVID-19 pandemic”, *Journal of Patient Safety and Risk Management*, 25(3), 93-96. <https://journals.sagepub.com/doi/full/10.1177/2516043520931971>

Youssef, Naglaa et al (2020). “Mental health status of health-care professionals working in quarantine and non-quarantine Egyptian hospitals during the COVID-19 pandemic”, *East Mediterr Health Journal EMHJ*, 26 (10), 1155 -1164

Annex 2: IRB Approval

CASE #2020-2021-137



To: Shaimaa Sabaah

Cc: Menna Abdelhamid

From: Atta Gebril, Chair of the IRB

Date: August 16 , 2021

Re: IRB approval

This is to inform you that I reviewed your revised research proposal entitled - **What are the Impacts of COVID-19 on Healthcare Professionals Wellbeing?** and determined that it required consultation with the IRB under the "expedited" category. As you are aware, the members of the IRB suggested certain revisions to the original proposal, but your new version addresses these concerns successfully. The revised proposal used appropriate procedures to minimize risks to human subjects and that adequate provision was made for confidentiality and data anonymity of participants in any published record. I believe you will also make adequate provision for obtaining informed consent of the participants.

This approval letter was issued under the assumption that you have not started data collection for your research project. Any data collected before receiving this letter could not be used since this is a violation of the IRB policy.

Please note that IRB approval does not automatically ensure approval by CAPMAS, an Egyptian government agency responsible for approving some types of off-campus research.

CAPMAS issues are handled at AUC by the office of the University Counsellor, Dr. Ashraf Hatem. The IRB is not in a position to offer any opinion on CAPMAS issues, and takes no responsibility for obtaining CAPMAS approval.

This approval is valid for only one year. In case you have not finished data collection within a year, you need to apply for an extension.

Thank you and good luck.

A handwritten signature in black ink that reads "Atta Gebril".

Dr. Atta Gebril
IRB chair, The American University in Cairo
2046 HUSS Building
T: 02-26151919
Email: agebril@aucegypt.edu

Institutional Review Board
The American University in Cairo
AUC Avenue, P.O. Box 74 New
Cairo 11835, Egypt.
tel 20.2.2615.1000 fax
20.2.27957565
Email: aucirb@aucegypt.edu



Documentation of Informed Consent for Participation in Research Study

Project Title: What are the Impacts of COVID-19 on Healthcare Professionals Wellbeing?

Principal Investigator: Shaimaa Mahmoud Sabbah
shaimaasabbah@aucegypt.edu
01094555988

*You are being asked to participate in a research study. The purpose of the research is to detect the impacts of COVID-19 on healthcare professionals wellbeing, and the findings may be *published, presented, or both*. The expected duration of your participation is 45-60 minutes. The procedures of the research will be as follows:
In depth semi structured interviews via zoom or phone and these interviews will be recorded and kept on the researcher’s laptop, which is password protected, and only the researcher will have access to it. The identity of the interviewees will be kept anonymous

*There *will not be* certain risks or discomforts associated with this research.

*There *will not be* benefits to you from this research.

*The information you provide for purposes of this research *is confidential*.

* If you have any questions about the research or the data that you are going to provide and how this will be used, your rights, or research-related injuries should be directed to (Shaimaa Sabbah) at (01094555988)

*Participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or the loss of benefits to which you are otherwise entitled.

Signature _____

Printed Name _____

Date _____