



(REVIEW ARTICLE)



## The impact of COVID 19 on health professionals in Greece

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### Abstract

In mid-autumn 2019 a severe respiratory infection made its appearance in Asia showing its harsh disposition from the begging. The media and social media have constantly shown images of doctors, nurses and other health workers collapsing, just like the health systems of some countries. The media and social media have constantly shown images of doctors, nurses and other health workers collapsing, just like the health systems of some countries. The images highlighted the anguish, worry, fear that spread to all health workers and the despair that death caused. The review of articles was performed on the occasion of a survey that investigates the anxiety, worry, mental and physical fatigue and strain experienced by the health personnel due to the respiratory pandemic infection covid-19 that also broke out in Greece at the beginning of 2020. The purpose of the research was to show the extent of professional exhaustion and fatigue experienced by health personnel in health structures in Greece during the outbreak of the new corona virus pandemic. The survey was conducted on a significant sample of primary, secondary and tertiary health care workers. Fatigue and burnout, along with worry and anxiety, were found to be at high levels among healthcare professionals at all three levels of healthcare. In parallel with the research, articles and studies carried out inside and outside Greece were also reviewed. The infectious respiratory infection, which crossed the borders of many European and other countries, was a crash for many health systems and led to the death of millions of people. At the same time, it affected with negative feelings the health professionals who were involved in the treatment, and prevention against the new corona virus. A common denominator of the studies conducted in secondary and tertiary care hospitals is the accumulated stress, anxiety, emotional burden with anxiety about self-protection of health professionals, fear, stress and anxiety about not transferring the virus to their loved ones, but more so in non-covid patients who were tested a lot due to other serious and chronic diseases, e.g. cancer patients. Some were driven to absolute despair (incidents of suicide), while some others tired physically and mentally, with less intensity. Mental and physical burnout was also related to the measures implemented in the different countries. It was observed that in countries where adequate measures were not taken the dispersion was huge and proportional were the admissions of patients to hospitals, admissions to ICUs and covid clinics and, of course, also deaths. Therefore, the fear, anxiety and despair of health professionals was corresponding. On the contrary, in countries that had better preparation and organization in dealing with treatment and avoiding dispersion, such as Greece, the levels of burnout were in better percentages compared to those abroad. Signs of burnout were also shown by the health personnel of primary health care who developed an active role from the first months of the pandemic in our country and contributed to the diagnosis, monitoring, treatment, and prevention against the new corona virus in many ways. The outbreak of the novel coronavirus covid 19 has been a huge threat to Public Health, which has had serious consequences at a global level. It was an important experience for the whole world, but especially for the entire health world worldwide, leading to new paths and great changes.

**Keywords:** Health professionals; Social workers; Anxiety; Worry; Fear; Burnout; Covid-19; Epidemic; Protective measures; Resilience; Primary/secondary/tertiary health care; Vaccination; Resignation; Suicide

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## 1. Introduction

The infectious respiratory disease, named by the World Health Organization covid 19, crossed the Greek border at the end of February 2020. *"China first reported to the World Health Organization about the development of cases of pneumonia of unknown etiology on December 31, 2019 and was declared a pandemic on March 11, 2020"* (Sumit Kumar, 2020). This was also the milestone of the start of the spread, but also of the treatment of patients with the new coronavirus. It was found to be a virus that affects the respiratory system and belongs to the category of coronas. The first symptoms it caused indicated a respiratory infection which was spreading rapidly. Hospitals in China, the country where the disease appeared, were beginning to fill up with patients and gradually health workers were getting more intense work rates. The health crisis was just beginning and no one could imagine its multifaceted consequences. Many researchers realized in time the magnitude of the health crisis that was in the making and started the investigations with various objects to investigate, related to the arrival of the new coronavirus. From the first months there was an obvious intense involvement of the health workers of the hospitals in the treatment of the patients.

Many researchers, observing the magnitude of the health crisis caused both during the outbreak and during the waves of dispersal of the disease, proceeded with organized studies in order to collect data that will help the scientific community in health crises, in the long term.

This survey concerns the stress and burnout experienced by health professionals in primary, secondary and tertiary health care structures, on the occasion of the invasion of the new infectious disease, which knocked on the door of the global community at the end of 2019.

However well prepared the National Health System was, the advance of the disease combined with the speed of its spread brought about many changes in the organization and operation of the nursing units. These changes also brought changes in the way health professionals worked both during the first wave of dispersion and during the three remaining waves of dispersion and transmission that followed. The consequence of this was their fatigue and exhaustion, both physical and psychological.

Burnout of health professionals is a condition described with concepts and emotions that carry a negative sign. Such are the anxiety, the absence of joy, the existence of unpleasant thoughts, the anxiety for the health of themselves and members of their families, the anxiety to avoid the transmission of the disease, the constant effort to take the appropriate measures of self-protection and protection of the members of the family, the bad dreams, the morning awakening followed by sore muscles, the frequent headaches, the mental fatigue and the questions about the duration of this "evil". Also, the feeling of intense physical and mental pressure, the fear of avoiding the transmission of the disease from patient to patient through tools and other objects, through the respiratory tract or mucous membranes, the painful experiences of hospitalization and care in intensive care units with heavy incidents and feeling deeply saddened by counting losses or worsening incidents.

Physical and mental workload are risk factors for the development of serious health problems for each health professional, but, at the same time, as Negin Talee et al noticed in 2022 that it is linked to the frequency of medical errors and the quality of the health services provided. The health professional who experiences such experiences in his daily life becomes a victim. He also becomes a "victim" of the given situation and as Sumit Kumar writes *"Another cause and effect of burnout is the 'Second Victim Syndrome' which due to "emotional trauma suffered by healthcare workers due to adverse events, it usually leads to poor patient outcomes and the physician becomes the second victim"* (Sumit Kumar 2020). And the doctor is not the only healthcare worker who cares for the covid patient, of course. It is the nurse and the physiotherapist and the social worker and the health visitor and others who are at his side. Therefore, everyone who is in these professional categories and worked very closely with the covid patient found themselves or risked finding themselves in the role of the second victim. The price of wear and exhaustion can be the same for doctors and nurses, but also for paramedical professions such as the social worker, who deals with the orderly functioning of the patient within the nursing structure, within his family environment, within the wider society, who experiences feelings of intense anxiety, isolation, emotional oppression, lack of communication with family members, etc. Megan R Holmes typically stated in 2021 that Social workers are in a unique position as they experience the stress of the covid 19 pandemic in their professional lives, providing services to customers who are often in situations of crisis or adversity, while at the same time experiencing the same trauma in their personal lives. It is possible that the social workers themselves are in the same or a similar psychological state and are charged with the need to support and support patients for the same reason!

"Given the outbreak of the epidemic disease, the unpredictable conditions and the extensive workload experienced by health professionals due to the pandemic disease" (Negin Talee et al 2022) are also valid in our country, the motivation was given to investigate their situation.

Common findings include physical fatigue, psychological fatigue, boredom, frustration, lack of self-interest, and other related negative feelings.

The most intense emotions and the heavy psychological exhaustion came for most of them from the anxiety of contracting the disease, the anxiety of transmission by the health professional himself, e.g. nurse or doctor to the non-covid patient, anxiety about avoiding transmission to their family members, anxiety about their personal ability to respond to patients' needs, anxiety about the unknown of this virus, i.e. the size of the infestation of the human organism, the speed of infection, the speed of death, the anxiety about the duration of the pandemic, the anxiety about finding ways to deal with it. The extremely severe symptoms of the disease, the need for many hours or even days to sedate the patients in the Intensive Care Units, the multiple complications and side effects are just some of the causes that exacerbated the negative emotional state of the healthcare staff. The frequent natural ending in death as a natural consequence of the overall attack of the human organism by the severity of the virus, combined with the lack of an appropriate antidote for the disease are important causes of mental stress, anxious behavior, emotional disorders with a strong presence of fear and of deep sorrow.

In the literature review, hundreds of studies were identified that were carried out from the very beginning of the pandemic in some countries 2020 until 2023, and with the help of research tools, they capture the dimensions of worry, anxiety, depersonalization, anxiety, frustration and despair and PTSD symptoms that as supported in her study in 2021 include avoidance, hyperarousal, and insomnia. Such tools are the MBI, CBI, DASS 21 questionnaires and others that delve into the psychological introspection of health workers during the pandemic period. Burnout has been shown to exist across the spectrum of health professionals, with doctors and nurses leading the way. In many cases it is at very high levels. *"The burnout syndrome can be identified in eleven symptoms, including fatigue and loss of energy accompanied by exhaustion"* (Maria Ulfa 2022) and it appears versatile.

The causes that cause it are the ones that probably determine the rate of burnout. In tertiary hospitals and in general in units with a large number of covid patients stress, anxiety, fear, psychological fatigue and physical exhaustion appear to be higher than in secondary care hospitals or with fewer covid beds in general. Also, organization, adequacy of supplies, and proper management of in-hospital conditions appear to have played a major role in the daily attrition of health personnel.

It is important to mention that the pandemic was dealt with by the health structures during particularly difficult times. The lack of appropriate and sufficient medical equipment, e.g. ventilators, covid beds, ICU beds, understaffing, the lack of personal protective equipment, were conditions that made the situation in our country's hospitals very difficult. Also, the supervigilance caused by the covid era is also due to the lack of staff, but also vice versa, the lack of staff caused the supervigilance from the covid era onwards. Similar situations are experienced by other countries whose health systems appeared to have many shortcomings. And certainly wear and tear was caused not only in trying to recover patients, but also in preventing disease. Let us not miss the fact that vaccination was also an intense and time-consuming process, which burdened all levels of health, with primary health care at the forefront.

It is, therefore, a given that significant physical and psychological damage occurred to the health professionals in the health structures that were actively involved in dealing with the pandemic. Don't forget that treatment was based on three areas: treatment, diagnosis and prevention. The order of wording is proportional to the facts. First, the patients were admitted for treatment in the tertiary and secondary hospitals, then gradually the diagnosis went beyond the covid Emergency Department and to the Health Centers (Primary Health Care) and then the process of prevention through vaccination took place. Each stage hid its own rate of health worker burnout.

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## 2. Methods

This review article on health worker burnout during covid -19 waves was written for relevant material in the years 2021, 2022 and 2023. The searches were done on scientific platforms with a large number of scientific articles, such as the platforms Pubmed, Lancet, and Scholar Google. Also, material was searched in the work repository of the Hellenic Open University and in other university institutions of our country, such as Nemertis, etc. Key words for the search were burnout, fatigue, mental deterioration, mental resilience, covid-19 epidemic, primary/secondary/tertiary health care, suicide, illness, transmission personal protective measures, taking measures, burnout questionnaire, etc. Finally 45 articles were included and are analyzed in the next section.

### 3. Results

This specific work seeks to retrieve data from the primary and secondary health care staff of the National Health System, primarily, without exclusion of tertiary care. All studies have embraced secondary and especially tertiary health care staff, since it was this level that dealt with the largest volume of patients. And this is due to some factors such as: a) the existence of specialized clinics, e.g. pulmonology, ICU, ICU COVID, Heart Attack Units, artificial kidney, etc. b) the existence of more specialized medical, nursing and paramedical staff c) the existence of more specialized laboratory tests and d) the existence of specialized medical technological equipment.

#### 3.1. Paper analysis

Stachteas, in a review of 2022 claims that only the reorientation of health systems aiming at prevention and health promotion, through the strengthening of PHY, on the occasion of the pandemic, can contribute in this direction and create strong foundations for their resilience and sustainability.

Pahmida et al, in their work of 2022 found that females, medical officers, and younger doctors tended to be more susceptible to Burn Out Syndrome

Poulos Loukia in her study in 2022 dealt with the working conditions and the psychological burden of health professionals in health structures during the covid 19 pandemic.

Tsabi Eutichia studied in 2022 the social stigmatization of health workers in a secondary hospital.

Balkanioti Aikaterini, in her work in 2022 dealt with professional burnout in Primary Health Care during the pandemic.

Karga Alexandra, in 2022 worked on assessment of the degree of burnout of nurses and doctors during the covid pandemic.

Parlara Maria investigated in 2021 mental stress and burnout of medical and nursing of a general hospital

Spathoula Maria worked on the evaluation of the degree of burnout of the workers at general hospital and the effect on their quality of life.

Wenwen Gu et al in 2023 researched the associated factors of burnout among Chinese vaccination staff during covid 19 pandemic.

Joy Melnikow et al had national surveys findings On 2022 from frontline physician burnout during the covid pandemic.

Erin L Kelly et al in 2022 worked on Primary care practices that are on the front lines for patients seeking health care during covid period.

Ata Arda Ayaslier et al investigated in 2022 Burnout in primary healthcare physicians and nurses in Turkey during covid 19 pandemic.

Gemma Seda-Gombau et al dealt in 2021 with the Impact of the covid 19 Pandemic on burnout in Primary Care Physicians in Catalonia.

Max Denning et al in 2021 did a multinational cross-study survey for the Determinants of burnout and other aspects of psychological well-being in healthcare workers during the covid 19 pandemic.

Eser Salgatici, in his work in 2022 dealt with comparisons of different medical professions in a regional hospital in Turkey about Burnout and psychological symptoms.

Kriti Prasad et al did in 2021 a national cross-sectional survey study about Prevalence and correlates of stress and burnout among U.S.A healthcare workers during covid 19 pandemic.

Boon Kheng Seng investigated in 2021 the Resilience and stress in frontline social workers during the covid 19 pandemic in Singapore.

Stefan De Her in 2020 studied the Prevalence, Impact and Preventative Strategies of Burnout in Healthcare Workers.

M. Irigoyen-Otinano in 2022 had a study about Suicide among physicians: Major risk for women physicians.

Cece Yang in 2023 published a cross-sectional study about Burnout and associative emotional status and coping style of healthcare workers in covid 19 epidemic control.

Helena Sofia Antao in 2022 dealt with Burnout in hospital healthcare workers after the second covid 19 wave.

Matthew A. Davis MPH, PhD in 2021 wrote about the association of USA nurse and physician. Occupation with risk of suicide.

Negin Talaei in 2022 wrote about the validation of a questionnaire for Stress and burnout in healthcare workers during pandemic.

Sumit Kumar in 2020 commented mental stress and burnout among covid warriors- a new healthcare crisis.

Maria Ulfa in 2022 studied burnout status of healthcare workers in the world during the peak period of the covid 19 pandemic.

Graziella Orru in 2021 and F. Morzetti in 2023 dealt with Secondary Traumatic Stress and Burnout in Healthcare Workers during covid 19 outbreak.

Eleonora Gambano in 2023 announced 1-year after-results from a Repeated cross-sectional survey of Health workers' burnout and covid 19 pandemic.

Nat. Budzynska in 2023 wrote about stress, Burnout and General Mental Healthcare Workers in Poland during the Long-Lasting covid 19 pandemic.

Ekaterina Mosolova in 2021 studied Stress, anxiety, depression and burnout in frontline healthcare workers during two peaks of covid 19 pandemic in Russia.

Megan R. Holmes in 2021 dealt with impact of covid 19 Pandemic on Posttraumatic Stress, grief, burnout and Secondary Trauma of social workers in the United States.

Laura k Miller in 2021 investigated Evaluating Burnout, Secondary Traumatic Stress and sleep Disturbances in Healthcare Professionals During a global Pandemic.

Francesco Franza in 2020 wrote about the role of fatigue of compassion, burnout and Hopelessness in healthcare: experience in the time of covid 19 outbreak.

Sumayah Aljhami in 2021 dealt with burnout and coping among healthcare providers working in Saudi Arabia during the covid 19 pandemic.

Rahim Badrfam in 2023 studied the suicidal ideation, burnout and their correlation among health care workers at the end of the fourth wave of the covid 19 pandemic in Al Borz Province, IRAN.

Sindey Zisook in 2022 commented health care provider distress before and since covid 19.

Chiara Conti in 2021 announced Burnout status of Italian Healthcare Workers during the first covid 19 pandemic peak period.

Damien Ridremontin 2023 Burnout among French pediatric healthcare workers during the covid 19 pandemic.

Antonio Laslavia et al. in 2021 announced a cross-sectional study in a tertiary hospital of a highly burbened area of worth-east Italy.

Serena Barello in 2020 studied Burnout and somatic symptoms among frontline healthcare professionals at the peak of Italian covid 19 pandemic.

A. Vignapiano and G. Nofle in 2021 had a real-world study about occupational burnout syndrome among Italian Healthcare workers during the covid pandemic.

Alexis Vancappel in 2021 dealt with psychological Impact of exposure to the covid 19 sanitary crisis on French Healthcare Workers: Risk factors and coping strategies.

M. Alex Wagaman et al. in 2015 commented the role of Empathy in Burnout, Compassion, Satisfaction and Secondary Traumatic Stress among Social Workers.

Beatriz Rodriquez-Vega et al. in 2020 suggested an Implementation of a Mindfulness-based crisis Intervention for Frontline Healthcare Workers during the covid 19 outbreak in a Public General Hospital in Madrid.

Tsamakis Konstantinos et al in 2020 studied Covid 19 pandemic and its impact on mental health of healthcare professionals.

According the above presented publications in summary it is a common truth that the tertiary level carried the greatest load and for this reason the experiences of health professionals led to fatigue and burnout with many characteristics and many manifestations. The result of this deterioration was resignations, mental disorders such as emotional disorders, even suicides (mainly in foreign countries) or tragic accidents. According to an announcement by an opposition party in Greece, "*every month approximately 20 acts of acceptance of the resignation of NHS doctors are posted in Diaugia*" (Question and request to submit documents St. Parastratidis and Io. Tsimaris to the Minister of Health M. Chrysochoidis 09/14/2023). The Secondary level of Health was tested quite a bit in a short period of time after the outbreak of the disease in our country and, although it did not have enough beds, nor clinics and ICUs, it fell into battle and managed to take care of a significant number of patients with all its capabilities. Although initially only tertiary hospitals were designated as covid hospitals, the speed and severity of the pandemic forced in a very short period of time to also include secondary level nursing institutions in this category in order to treat patients faster and more effectively. And while some of them were in the eye of the cyclone, the health professionals found themselves in a difficult position not only because they had the fear, the anxiety to protect the patient, but also themselves, but also because in some hospitals, cases were detected in the staff and cases inpatient transmission in non-covid clinics.

In research that has been done in many European and non-European countries, conclusions have emerged that highlight the size difference in burnout between health professionals in tertiary and secondary hospitals. Some of them refer to the increase in negative feelings in hospital structures of the tertiary level due to the large number of hospitalized patients and the multiple specialized groups of patients that host these hospitals. In others, again, it is recorded that the occupational burnout of workers in secondary hospitals is less than in tertiary ones.

In this paper it appears that the burnout rates of the interviewees are not as high as the corresponding rates that appear in studies of health personnel employed in tertiary health structures. Whatever is, fatigue and burnout sizes appear, but not in extreme percentages. Also, because the research was also carried out in Health Centers (primary health care) that carried the H.C.-COVID designation, on the one hand the levels of burnout are moderate to high, on the other hand, they do not reach the rates of very high burnout.

However, the role of primary health care at the beginning of the pandemic in our country was limited. It became active about two months after the onset of cases. To be precise, initially, the active role of its involvement in dealing with the pandemic was played by those health centers that were versatile and of an urban type. They contributed greatly to the diagnosis and triage of cases, so as to decongest secondary and tertiary hospitals. Its role, as Professor Mr. Stachteas also writes, "is considered of paramount importance in the identification and early isolation of suspicious incidents" (Stachteas 2022), but also in their evaluation, which determines their further monitoring. Besides, the importance of the services its provided was highlighted in the part of monitoring the incidents during the illness, as well as after the illness, but the most important part was the part of prevention. As a primary level, it implemented its most important part, that of prevention, by vaccination against the new corona virus.

Vaccination was a big gamble for the global scientific community which, along with the good it brought, also brought fatigue for the professionals who worked for it. It was carried out, initially in two very close phases, one month apart the first from the second vaccination per person and then the third phase of vaccination, nine months apart. Vulnerable groups, security forces and Armed Forces groups came first, followed by the general population. Vaccination was then extended to the general rural population, which entailed working hours away from the professional home, in often difficult conditions for health professionals. The obligation to vaccinate imposed the vector of long distances to reach

residents of remote areas of the provincial country and physical strain of health care workers, as it involved long hours of mass vaccinations.

And let's not forget the home vaccinations that concerned people with severe motor difficulties, mainly, difficulties that cannot be served in Health Centers or hospitals. These were people who were bedridden or extremely unwieldy due to serious chronic illnesses, who naturally belong to vulnerable groups. Note also the repeatability of the doses in two or even three time periods. In short, the greatest burden of out of structures' vaccinations fell on the backs of the primary level, due to immediacy and proximity to the population of the neighborhood and areas remote from large urban centers.

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#### **4. Discussion**

It can be seen that the role of health professionals both during the outbreak of the pandemic and during and after the end of the big waves proved to be particularly important, while their physical and mental fatigue automatically increased. Increased appointments imposed increased obligations and these in turn resulted in longer working hours. And as the working hours increased, so did the stress and physical symptoms of the health personnel involved in this whole process. Vaccination was also a cause of fatigue time extension for all three health levels, because all three managed to support vaccination centers.

Within these contexts, the role of primary health care appeared multidimensional. As for the role of the secondary and tertiary, it can be seen from their efficiency during the pandemic, but also with the end of the waves, how heavy they are. The fortunate thing was the time that elapsed from the start of the disease in Asia (autumn 2019) until it came to European countries in the form of a pandemic and much longer until it reached Greece (end of February 2020). These months helped in the good preparation that had been preceded by the competent services of the Ministry of Health in our country. The timely mobilization of all prevention, protection and treatment mechanisms by the state and scientific community in combination with the timely preparation of health units contributed to the least possible spread of the disease and better treatment, compared to other countries in Europe, e.g. Italy and France, who mourned a very large number of citizens.

The advent of the pandemic, helped many researchers to study the burnout it caused to health personnel. Information about the tragic developments of many patients and health professionals (e.g. suicides or deaths of health workers due to their exposure to the disease) attracted the interest of researchers who realized that the given health crisis would have a lot to teach us about the future.

A significant part of this fatigue is reflected in internet searches for newsgroups around incident management issues, especially in the early days of the pandemic. Indirectly, this search also concealed the search for support among health professionals.

An important intervention to support and guide health professionals took place in China as soon as the pandemic broke out. It was a pioneering and particularly comforting action and, above all, immediately accessible, since it managed to offer support and relief to frontline health workers.

Such movements of support and empowerment can be implemented through social media groups. The possibility of accessibility at the same time to a group or groups of health professionals with common characteristics, common experiences and searches is a means of mental relief. Such groups should be organized in almost all countries that have been more or less tested by the scourge of the new corona "to offer self-help techniques, to offer group or individual support or treatments to their colleagues in distress" (Ekaterina Mosolova 2021). Online meetings on platforms for mutual help or empowerment by experts in the field, e.g. psychiatrists, psychologists and social workers, specialized in the management of natural disasters, health crises and mental resilience seem to be appropriate and necessary.

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#### **5. Conclusion**

The outbreak of covid 19 pandemic in Greece was a major health crisis that tested the endurance of both the National Health System itself and the health professionals working in it. The need for a holistic treatment through the action of the three levels of care and the important role of each one separately in the prevention, treatment and rehabilitation of patients was established.

Because of this crisis, the mental cost caused to the health professionals in trying to treat their patients, in difficult medical and social conditions, was shown. The negative emotions caused to the health professionals who were supposed to be calm and able to apply the best medical, nursing and psychological practices for the patients were seen, while they themselves experienced the anxiety, fear, physical fatigue, irritation, worry and tension from the tense situation that prevailed in the nursing units.

The covid 19 has been a major for the mental and physical endurance of healthcare professionals, reaching high levels of burnout. However, it was also a great test for the state health apparatus, because in a very short period of time, in one hand, it managed to ensure the best possible health conditions, on the other hand, it was faced with the lack of human and technological resources.

The specific study highlights the extend of burnout of the health professionals in Greece, due to a pandemic. It can act as a database for taking measures that will limit the emotional adverse situation in a future similar case and strengthen the mental resilience of the workers of the front line of nursing units.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

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