


IMPLICATIONS OF THE COVID-19 PANDEMIC ON THE ORGANIZATION OF SERVICES AND ON THE HEALTH OF PRIMARY CARE WORKERS: THE CASE OF PETROLINA, PERNAMBUCO

 <https://doi.org/10.56238/sevened2025.011-001>

Rogério Fabiano Gonçalves, Alda Maria Justo, Edinayara Suylla Oliveira Cavalcante Rocha, Roberta Teixeira Coelho de Andrade Araújo, Camila Alves de Brito, Ellen Cristinni Maciel Canuto and Maria Fernanda da Silva Torres.

ABSTRACT

Objective: To determine the repercussions of the COVID-19 pandemic on the organization of services and health workers in a Basic Health Unit (UBS). **Method:** Qualitative research with focus group interviews in the municipality of Petrolina in Pernambuco, involving health workers from a UBS. Visits were made to the service to learn about its structure, its operation and to carry out data collection. The interviews were analyzed using the content analysis technique. The research was approved by the CEP/CISAM/UPE, opinion No. 5,839,349, in December 2022. **Results:** Nine workers from the health team of the service participated in the research. Work overload, changes in work processes, and difficulties in meeting the demand of suspected cases of Covid-19 were reported. Feelings of loss of close people, fear of getting sick and/or dying, were externalized, in addition to empathy and commitment to work on the front line of care. **Conclusion:** In the face of strenuous working hours, changes in work processes, psychological and emotional stress, the workers gave sustainability to coping with the pandemic at the UBS. The experience of this process implied changes in the behavior of users and professionals.

Keywords: COVID-19. Primary Health Care. Health Services Management. Work in Health.



INTRODUCTION

The COVID-19 pandemic has affected, globally, important spheres of life in society, such as the economy, education, and politics, especially with regard to their interaction with decision-making in the public health emergency (Brasil, 2022; Walnut; Moreira, 2023). With regard to the Unified Health System (SUS), even after the World Health Organization decreed the end of the pandemic emergency on May 5, 2023 (Pan American Health Organization, 2023), there are still difficulties in meeting health demands, especially in primary care (D'Agostin; Ceretta, 2020).

In this context, the operationalization of actions for the promotion, protection, and recovery of population health in the SUS culminated in challenges imposed by adversity for the control of COVID-19. There were changes in the organization of services, through the suspension of routine care, exams, and surgeries, to assist patients with respiratory symptoms and suspected of the disease (Giovanella *et al.*, 2022). Primary Health Care (PHC), responsible for assisting most mild and moderate cases of the disease, also started to follow up on cases of post-COVID-19 sequelae and monitor the population with mental disorders, resulting from prolonged social distancing (Sarti *et al.*, 2020).

These changes in the SUS were directed by decrees and contingency plans to face COVID-19, since the first months of the pandemic, considering regulations of the federal, state, and municipal entities. In the municipality of Petrolina, in the hinterland of the state of Pernambuco, daily information was disseminated for the prevention, diagnosis and treatment of the disease, with flows and protocols being systematized for the organization of care in the service network.

Mild cases were directed to the municipality's basic health units, 24-hour emergency care units and field hospitals, while those of greater severity were referred to intensive care beds in a university hospital. Several places for testing and vaccination were made available. Elective procedures and care for specific population groups, such as smokers and pregnant women, were suspended; while individual prenatal care and endemic diseases such as leprosy, tuberculosis and leishmaniasis were maintained, adapting the work process in the services (Petrolina, 2020).

Despite this, the effort of municipalities such as Petrolina to seek to maintain the regular supply of services, some authors analyze that PHC in the country acted in a fragmented and uncoordinated way during the pandemic. They indicate that care for chronic conditions has been dammed up and that there has been negligence in the treatment of acute diseases, even in mild cases of COVID-19. This overloaded the hospital system, without ordering care in the health network, underestimating the role of PHC,



especially due to the scarce funding dedicated to this field of action (Giovanella, L. *et al.*, 2022; Fernandez, Fernades and Massuda, 2022).

It is also noteworthy that the confrontation of the pandemic evidenced the unequal distribution of health services in the SUS, which required the strengthening of the state health authority, to identify and provide strategies in the formation of viable, problem-solving care networks with clear guidelines. However, the problems evidenced in PHC during the pandemic do not arise in this context, they preexisted the current health crisis, which outlined and intensified already latent difficulties at this level of care (Teixeira *et al.*, 2020). As stated by Bousquat *et al.* (2019), the PHC scenario in the country was already marked by scarcity, unequal distribution, and deficiency in the qualification of human resources, in addition to insufficient funding for actions carried out in this area, problems that were amplified in the pandemic scenario.

It is worth emphasizing that not only structural changes in the organization of services or in work processes guided the management challenges. During the pandemic, the illness of the health workforce due to COVID-19, the increase in work overload, and the intensification of symptoms such as anxiety, stress, insomnia, and fear compromised the mental health of workers (Shreffler; Petrey; Huecker, 2020). In view of this, states and municipalities sought initiatives to support workers, such as the implementation of psychotherapeutic services via telephone, bonuses, hotel accommodation for infected professionals, with the purpose of social distancing of unaffected family members, among others (Oliveira *et al.*, 2022; Bezerra *et al.*, 2021).

In recent months, although the end of the pandemic emergency has been reported, the Ministry of Health has expressed concern about the growth trend of COVID-19. It reported a weekly variation in cases that reached 44,412 new cases at the end of October 2023, reducing to 26,496 between November 12 and 18. Of the seven states with an increase, six were in the Northeast region, including Pernambuco. On the article's website, the ministry warned that the pandemic is not over, disclosing that between October 8 and November 4, there were 615 confirmed deaths in the country (Brasil, 2023).

In view of the challenges mentioned, the threat of a resurgence of the disease, and the importance of strengthening PHC as an ordering network of care in the fight against COVID-19, it is essential to know how work processes, the dynamics of services, and health workers were affected by the pandemic. In this sense, this study aimed to determine the implications of the COVID-19 pandemic on the organization of services and on the health of workers in a basic health unit.



MATERIAL AND METHODS

Qualitative research was carried out based on an interinstitutional project aimed at combating COVID-19 in the municipality of Petrolina, involving the University of Pernambuco (UPE), the State Health Department (SES-PE), through the VIII Regional Health Management and the Municipal Health Department of Petrolina (SESAU). The project was approved in a public notice of the Education through Work for Health Program, PET-Health: Management and Assistance 2022/2023 (SGTES/MS), with the funding of scholarships for tutors, preceptors and students, involving three undergraduate courses: nursing, physiotherapy and nutrition. The research setting was a Basic Health Unit (UBS) of the municipal network.

For contextualization purposes, the municipality of Petrolina is located in the Sertão of the state of Pernambuco and has an estimated population of 386,786 inhabitants (Brazilian Institute of Geography and Statistics, 2022). On March 20, 2023, the municipality released the last epidemiological bulletin on COVID-19, where it reported 68,096 confirmed cases of the disease and 698 deaths, showing a significant number of cases and deaths that occurred (Petrolina, 2023).

Data collection used the focus group interview technique and was mediated by a semi-structured script with questions formulated by the researchers themselves. The focus group technique is a qualitative research methodology that aims to collect data through interaction between participants. The focus group is composed of a moderator and a group of people who can share knowledge, opinions and experiences on a given topic. The objective is to obtain detailed and rich information about the perceptions, attitudes, and behaviors of the participants in relation to the topic in question, being a technique widely used in the exploratory phase of research projects, but not restricted to this (Oliveira et al., 2020).

The elaboration of the scripts took place in preparatory workshops for the aforementioned collection, with the participation of professors, preceptors and students of PET-Saúde, in dialogues about qualitative research, focus group technique and interview scripts. In the workshops, the conversation circles allowed for simulating situations and training the research team for the best progress of data collection. The selection criteria for the participation of workers in the focus group were to belong to the UBS health team and to have worked in the profession before, during, and after the COVID-19 pandemic period.

Thus, nine health workers were part of the group, two community health agents, an oral health assistant, a dental surgeon, a nurse, a pharmacist, a doctor, a receptionist and a nursing technician, who were instructed about the purpose of the investigation. The



activities of the focus group were coordinated by the members of the research team, starting with the confirmation of adherence and voluntary participation, with the signing of the Informed Consent Form (ICF).

The participants were introduced and each received a blank badge, registering their name on it, and was invited to say their profession and the function performed in the service. Two students from the research team carried out a dynamic to reduce anxiety in the group. The data collection process had the recording of the speeches recorded by three audio capture equipment, as a way to ensure the quality of the recording. Gestures and attitudes that marked the dialogue among the focus group participants were noted and the audio recordings were transcribed in the days following the end of the interview.

Content analysis was performed by the group of researchers who were present at the time of the focus group, to allow greater precision in the interpretation of the speeches. The NVivo 11 (QSR International) software, plus version, was used as an information management tool, resulting in the categorization of emerging themes. Subsequently, the treatment and evaluation of the dialogues was carried out, analyzing each passage in context, listening to the audio record to understand the nuances of the speeches. The data were double-checked, and the analyses and interpretations were submitted to the focus group participants in order to resolve misunderstandings. The suggested adjustments were incorporated into the analysis. In addition, official public documents from the city hall were accessed on the internet to allow for knowledge of health management decision-making during the pandemic period.

The research was approved by the Research Ethics Committee, with opinion No. 5,839,349 on 12/26/2022, CEP/CISAM/UPE. All people who participated in the focus group were aware of all aspects of participation, being informed and clarified about the experimental procedures of the project. The results were systematized according to thematic categories.

RESULTS AND DISCUSSION

EMERGENCY CARE, ESTABLISHED DUE TO THE PANDEMIC, BECAME THE REFERENCE FOR THE USER

According to reports from the focus group, emergency care began to be prioritized at the UBS in order to provide assistance to cope with COVID-19, as highlighted in the following statement:

The follow-ups of scheduled appointments were suspended so that we could only meet important demands, only emergency care [...] the number of patients who got sick with respiratory symptoms, at the same time, was very large, right! They all



wanted urgent care, because they were afraid it would be covid and, really, many were covid [...] it ended up overloading the unit [...] there were people everywhere with respiratory symptoms and we had to be able to provide care because they fit into the emergency (Medical).

According to reports, prenatal care and follow-up for people with leprosy, tuberculosis and leishmaniasis were essentially maintained, with emphasis on the dispensation of medicines; however, the services also kept an eye on emergencies unrelated to COVID-19, making referrals when necessary. The change in the care protocol at the UBS was motivated by the publication of a municipal contingency plan, as a reflection of the decisions of the Ministry of Health and the state government of Pernambuco.

Giovanella *et al.*, 2022, showed that prenatal care, vaccination, and care for the chronically ill continued to occur, albeit in a reduced or adapted form. However, the criterion for emergency care was impaired due to the high demand of people with respiratory problems, reflecting the panic of the population in the first months of the pandemic. The services were overloaded: "I think that even the emergency room has increased, because before there was only emergency care and I think they got used to it, adapted to this emergency care" (Pharmacist).

During the height of the pandemic, social distancing guidelines recommended that only people with probable symptoms of COVID-19 or in urgent and emergency situations seek health services. This change in the routine of services resulted in a reduction in the number of daily visits to urgent and emergency services during the pandemic period, compared to previous years, as observed by Santos *et al.* (2021).

In addition to the change in routine, there was also a change in the population's expectations regarding care. A sense of urgency has become the norm for UBS users, who have become accustomed to shorter waiting times, with more agile and problem-solving care, due to the adaptations and restrictions imposed by the pandemic. As a result, the return to routine care in the service with longer waiting times for consultations and exams generated dissatisfaction among users.

Health professionals also reported that, with the change in the focus of care to reduce the flow of people in the units and prevent illness from COVID-19, patients who received medication for chronic diseases, contraceptives, among others, had their prescriptions extended from eight to up to 12 months, depending on the type of treatment. This decision may have led to the fragmentation of care and influenced the accumulation of demand for consultations, exams, procedures and medications.



Before the pandemic, the dispensation of medicines took place through regular consultations to renew the prescription and release the medicines, usually every one or two months. However, Collegiate Board Resolution (RDC) No. 357, issued by the National Health Surveillance Agency (ANVISA) on March 24, 2020, temporarily relaxed the criteria for dispensing medicines during the pandemic, extending deadlines and quantities (Brasil, 2020a).

This may have influenced the decisions made by health services regarding the management of medication dispensation. Drugs such as dipyron, paracetamol, ibuprofen, among others, used in the treatment of suspected symptoms of COVID-19, showed high demand and, at times, interruption in supply due to insufficient stock.

Thus, with the gradual return of usual activities at the UBS, users were once again faced with the traditional difficulties of access to PHC services, such as long waiting times for scheduling and carrying out consultations and exams, scarcity of professionals and adequate resources, which ends up compromising the expected problem-solving capacity. Users feel dissatisfied with these factors, as they are challenges that demand greater attention and responsibility on the part of SUS managers, as well as additional financial investments so that they can be effectively overcome. Such historical challenges of the sector require solutions and prioritization on the political agenda in order to ensure the full constitutional right to health of the population.

FRAGILE BACK-UP IN OCCUPATIONAL ILLNESS, WORK OVERLOAD AND PSYCHOLOGICAL IMPACT ON HEALTH WORKERS

Although routine consultations, exams, procedures, and follow-up of people with chronic diseases in the most severe phases of the pandemic have been reduced, the high flow of care aimed at people with suspected COVID-19 generated work overload at the UBS:

[...] The demand itself was so exhausting that it made us arrive at the end of the shift looking like we had been on a 24-hour shift, super tired, stressed [...]
Everyone wanted to be seen soon, so there were many complaints about delays, when, in fact, the consultations were faster than the consultations that were carried out (Nurse).

Despite the reduction in the waiting time for outpatient care provided by the UBS, the high demand for this service increased the complaints of users in relation to this time, as people were afraid of contamination by SARS-CoV-2. The following report, from a CHA in the focus group, indicates the community's fear about the care at the UBS: "They complained a lot about it when we passed by the houses [...] Am I going to stay in the



middle of all those people, who I don't even know what they have? [...] I'm going to get this disease [...]"

During the COVID-19 pandemic, health workers were also affected by the fear of contagion. Survey data, obtained from an online survey with professionals from more than 2,200 Brazilian municipalities, revealed a significant percentage of health professionals insecure in relation to the feeling of protection against SARS-CoV-2, 57% of them were afraid of getting sick from COVID-19 (Machado *et al.*, 2022a). The study by Liu *et al.* (2020) corroborates this perception of fear and emphasizes that professionals on the front line of care faced substantially higher risks of infection compared to the general public. This risk was 3.4 times higher, from 5,545 positive cases for COVID-19, according to an estimate of a study that compared the incidence of cases among 99,795 health workers and 2,035,395 people in the United Kingdom and the United States, (Guyen, 2020).

Despite legitimate fears about morbidity and mortality, these workers, at all levels of the health system, continued to provide care services in the best possible way. This perseverance and sense of duty were maintained despite numerous occupational and psychosocial challenges, including high demand, long working hours, lack of adequate personal protective equipment, fear of infecting family members, social stigma, feelings of powerlessness and helplessness, anxiety, depression, physical exhaustion, and psychological stress (Huh, 2020; Que *et al.*, 2020; Teixeira *et al.*, 2020).

According to epidemiological report No. 306 of the Pernambuco State Health Department, on 12/31/2020, 24,270 health workers were tested positive for COVID-19, corresponding to 10.9% of the cases of the disease in the state in that year (Pernambuco, 2020).

The following statements reveal the exposure of workers on the front line of care in the pandemic. Occupational risk was translated into illness from COVID-19, in addition to physical overload and repercussions on mental health. "There were many sleepless nights and anxiety disorder" (Nursing Technician).

There was a worsening of my anxiety and considerable weight gain. [...] I didn't get seriously ill, thank God, but we worked out of fear, right? [...] I found out I was pregnant, I worked the entire pregnancy, I caught COVID pregnant. [...] As it was all very new, we didn't know if there would be complications, if something could happen (Doctor).

Systematic review on the impact of COVID-19 on the mental health of health professionals, conducted by Muller *et al.* (2020), showed that the psychological and emotional repercussions among frontline care workers were related to the lack of opportunity to rest and sleep properly. It is pointed out in the review that extreme



workloads could be exacerbating the impacts on mental health. Other authors corroborate this finding, suggesting that the increase in demands and workload during the pandemic were associated with the development of burnout, anxiety, depression, and suicidal ideation among health professionals (García-Iglesias *et al.*, 2022). In addition, factors such as fear of infection, distancing from family and friends, and stigmatization also contributed to the psychological suffering of these workers (Machado *et al.*, 2022a).

Despite the relevance and responsibility of the work on the front line, it is not possible to affirm that, in view of the absence of colleagues, there was the necessary support for the health teams that remained working. And, as there was no replacement, the risk of illness increased:

[...] We had a list that was passed on to the secretariat, of the patients (health professionals who fell ill)[...] And even with these absences (absenteeism) [...] No support came, it was us here who had been redistributing ourselves and occupying the functions within reality. [...] This increased our physical and mental stress much more (Nurse).

The absence of professionals for two weeks or more, due to illness due to COVID-19, made it difficult to maintain services at the UBS. The workers who remained active took over the activities of those who were on leave, being overloaded by the lack of replacement of the workforce.

The shortage of professionals has weakened the supply of services. The maintenance of care was guaranteed through negotiation between the Ministries of Education and Health, anticipating the graduation of students from the nursing, pharmacy, physiotherapy and medicine courses, who completed 75% of the workload of the supervised internships. Many of these professionals were hired to work on the front line (Brasil, 2020b).

According to Bezerra *et al.*, (2021) strategies were identified among the states of the Northeast to minimize the damage resulting from the pandemic. Pernambuco offered financial support to family members of frontline professionals who died from COVID-19. Rio Grande do Norte offered support related to the mental health of health professionals. However, these initiatives, at the state level, do not seem to have been sufficient to meet the demands generated during the pandemic period, and may have influenced the situation of lack of support reported in this article.

Therefore, it is essential that in the future, considering similar circumstances, there is the implementation of measures that promote well-being and self-care for health professionals, as well as greater organizational and social support. Likewise, it is crucial that specialized mental health services are available to support workers working on the front



line of care, in order to mitigate the psychic impacts resulting from this exhausting and stressful work activity.

AWARENESS OF WORKERS HEALTH ON THE USE OF PERSONAL PROTECTIVE EQUIPMENT

In view of the negative impact of COVID-19 in the country, it is considered that there have been advances in the professionals' understanding of the use of Personal Protective Equipment (PPE), which has become a must-have.

[...] I believe that everything in life has a learning experience, no matter how bad it is, right, but, if you stop to think about our day-to-day lives, I think it was good to use PPE more carefully, which was something like that, from my experience, before we didn't use it and I've been through situations, for example in college [...] The teacher always said: "Go answer, put on a mask." And we thought it was. And today, we see the importance of wearing a mask, like this, how much it frees us from illness (Doctor).

According to studies by Galanis *et al.* (2021a; 2021b), the experience lived during the pandemic fostered reflection on the relevance of PPE among professionals working on the front line. Corroborating this point, the results of this focus group indicate that simple processes such as hand hygiene and the use of alcohol gel were incorporated into the health work processes. Other authors reinforce that the pandemic has driven the adoption of preventive measures such as the use of masks and frequent hand hygiene among health professionals, bringing relevant changes in work protocols and processes that tend to remain even after the end of the health crisis (Machado *et al.*, 2022b; Costa *et al.*, 2023). The incorporation of these measures represents a positive legacy of the pandemic, which can reduce the transmission of other infectious agents in health services and improve the safety culture as a whole.

FINAL CONSIDERATIONS

The research brought relevant information about the repercussions of the COVID-19 pandemic, under the eyes of the health team of a UBS in the municipality of Petrolina-PE. The results showed the difficulties faced by health workers, who had to deal with exhausting working hours, changes in protocols and work routines, in addition to a high level of psychological and emotional stress, resulting from exposure to the risk of contamination and the overload of demands.

Despite the challenges, the health professionals demonstrated commitment and responsibility with the health care of the population served by the UBS. The study also pointed to changes in the behavior of both users and health professionals, such as



increased frequency and quality of hand hygiene and the proper use of protective masks, in situations that present signs of respiratory disease.

The results of the research allowed to expand knowledge about the emotional and operational impacts of the pandemic on Primary Care teams. The stress experienced by professionals in the workplace, resulting from work overload and grief over the loss of patients and colleagues, invites us to reflect not only on the improvement of health care in unexpected events, as occurred in the pandemic, but also on the management of health work in the context of the current challenges of the sector. One path to be explored is the development of strategies for the psychological support of professionals, such as the implementation of mental health practices in the workplace, with the objectives of minimizing suffering, restoring health and dealing with possible losses.

Another important consideration is the need for improvements in coordination between the different levels of care, in order to enable continuous flows of referral and counter-referral between units, in addition to continuous monitoring of queues and dammed demands.

The study also provides subsidies for the design of psychosocial support policies and training of teams on clinical management in critical scenarios. The findings converge on the need to formulate integrated solutions, seeking a look at health care networks and investments in resources such as telemedicine and electronic medical records to speed up care. Such strategies aim to strengthen Primary Care and protect both professionals and citizens in any crisis situations in the health sector.

As limitations of the research, it is identified that despite the adherence of the health professionals of the UBS, the participation in the research could have been greater, which would certainly enrich the points of view shared on the theme.

More studies are needed to understand the psychological demands of workers who worked on the front line during the pandemic and, based on this, promote effective actions to meet the health needs of this population. It is also interesting to compare the decision-making processes related to work management between the state and municipal levels to verify whether there was homogeneity and clarity about the strategies established. In addition, studies are needed to assess meeting the repressed demand for exams, procedures, and consultations accumulated due to the pandemic.

ACKNOWLEDGMENT

We would like to thank the Secretariat for the Management of Work and Education in Health (SGTES), linked to the Ministry of Health, for the initiative and funding of the PET-Health



Management and Assistance 2022/2023; the Municipal Health Department of Petrolina-PE for its collaboration with the study; the UPE Petrolina Campus for the training space; the professionals of the UBS, who kindly welcomed the research team; and all those involved in the PET-Health, for the support and sharing of experiences.



REFERENCES

1. Bezerra, A. F. B., et al. (2021). Estratégias de combate à Covid no Nordeste do Brasil: um olhar sobre as informações dos sites das secretarias estaduais de saúde. In M. F. Machado, T. R. Quirino, & C. D. F. de Souza (Orgs.), *A Saúde Coletiva em tempos de pandemia* (pp. 24-35). Edufal.
2. Bousquat, A., et al. (2019). A atenção primária em regiões de saúde: política, estrutura e organização. *Cadernos de Saúde Pública*, 35(Sup 2), e00099118. <https://doi.org/10.1590/0102-311X00099118>
3. Brasil. Agência Nacional de Vigilância Sanitária. (2020a). Resolução da Diretoria Colegiada - RDC N° 357, de 24 de março de 2020. *Diário Oficial da União*, 26 mar. 2020, Seção 1, 100-105. <https://www.in.gov.br/en/web/dou/-/resolucao-rdc-n-357-de-24-de-marco-de-2020-249501721>
4. Brasil. Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira. (2022). Resposta Educacional à Pandemia de Covid-19 no Brasil – Educação Superior – 2020 [Relatório de Pesquisa]. Inep. <https://www.gov.br/inep/pt-br/centrais-de-conteudo/acervo-linha-editorial/publicacoes-institucionais/estatisticas-e-indicadores-educacionais/relatorio-de-pesquisa-resposta-educacional-a-pandemia-de-covid-19-no-brasil-educacao-superior-2020>
5. Brasil. Ministério da Educação. (2020b). Portaria nº 376, de 3 de abril de 2020. *Diário Oficial da União*. <https://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?jornal=515&pagina=66&data=06/04/2020>
6. Brasil. Ministério da Saúde. (2023). Casos de Covid-19 apresentam tendência de declínio no Brasil nas últimas semanas. <https://www.gov.br/saude/pt-br/assuntos/noticias/2023/novembro/casos-de-covid-19-apresentam-tendencia-de-declinio-no-brasil-nas-ultimas-semanas>
7. Costa, C. B. C. P., et al. (2023). Como o cenário pós-pandemia impacta a biossegurança no consultório odontológico. *Research, Society and Development*, 12(4), e10012440983. <https://doi.org/10.33448/rsd-v12i4.40983>
8. D'Agostin, F. N., & Ceretta, R. A. (2020). Pós-pandemia: o desafio da reinvenção. In C. D. Tomasi, J. Soratto, & L. B. Ceretta (Orgs.), *Interfaces da COVID-19: impressões multifacetadas do período de pandemia* (pp. 52-54). UNESC. <http://dx.doi.org/10.18616/intcov18>
9. Fernandez, M., Fernandes, L. M. M., & Massuda, A. (2022). A atenção Primária à Saúde na pandemia da COVID-19: uma análise dos planos de resposta à crise sanitária no Brasil. *Revista Brasileira de Medicina de Família e Comunidade*, 17(44), 3336. [https://doi.org/10.5712/rbmfc17\(44\)3336](https://doi.org/10.5712/rbmfc17(44)3336)
10. Galanis, P., et al. (2021a). Personal protective equipment use among health care workers during the COVID-19 pandemic: A comparative study in England and Greece. *International Journal of Caring Sciences*, 14(2), 957-971. http://www.internationaljournalofcaringsciences.org/docs/17_galanis_original_14_2.pdf



11. Galanis, P., et al. (2021b). Impact of personal protective equipment use on health care workers' physical health during the COVID-19 pandemic: A systematic review and meta-analysis. *American Journal of Infection Control*, 49(10), 1305-1315. <https://doi.org/10.1016/j.ajic.2021.04.084>
12. García-Iglesias, J. J., et al. (2022). Suicidal ideation and suicide attempts in healthcare professionals during the COVID-19 pandemic: A systematic review. *Front Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.1043216>
13. Giovanella, L., et al. (2022). Desafios da atenção básica no enfrentamento da pandemia de covid-19 no SUS. In M. C. Portela, L. G. C. Reis, & S. M. L. Lima (Eds.), *Covid-19: desafios para a organização e repercussões nos sistemas e serviços de saúde* (pp. 201-216). Editora Fiocruz. <https://doi.org/10.7476/9786557081587.0013>
14. Guyen, L. H., et al. (2020). Risk of COVID-19 among front-line health-care workers and the general community: A prospective cohort study. *The Lancet Public Health*, 5(9), e475-e483. [https://doi.org/10.1016/S2468-2667\(20\)30164-X](https://doi.org/10.1016/S2468-2667(20)30164-X)
15. Huh, S. (2020). How to train health personnel to protect themselves from SARS-CoV-2 (novel coronavirus) infection when caring for a patient or suspected case. *Journal of Educational Evaluation for Health Professions*, 17, 1-6. <https://doi.org/10.3352/jeehp.2020.17.10>
16. Instituto Brasileiro de Geografia e Estatística. (2022). Prévía da População dos Municípios com base nos dados do Censo Demográfico 2022 coletados até 25/12/2022. <https://censo2022.ibge.gov.br/etapas/divulgacao-dos-resultados.html>
17. Machado, M. H., et al. (2022a). Perfil e condições de trabalho dos profissionais da saúde em tempos de covid-19: a realidade brasileira. In M. C. Portela, L. G. C. Reis, & S. M. L. Lima (Eds.), *Covid-19: desafios para a organização e repercussões nos sistemas e serviços de saúde* (pp. 283-295). Editora Fiocruz. <https://doi.org/10.7476/9786557081587.0019>
18. Muller, A. E., et al. (2020). The mental health impact of the covid-19 pandemic on healthcare workers, and interventions to help them: A rapid systematic review. *Psychiatry Research*, 293, 113413. <https://doi.org/10.1016/j.psychres.2020.113441>
19. Organização Pan-Americana da Saúde. (2023). OMS declara fim da Emergência de Saúde Pública de Importância Internacional referente à COVID-19. OPAS. <https://www.paho.org/pt/noticias/5-5-2023-oms-declara-fim-da-emergencia-saude-publica-importancia-internacional-referente>
20. Shreffler, J., Petrey, J., & Huecker, M. (2020). The Impact of COVID-19 on Healthcare Worker Wellness: A Scoping Review. *Western Journal of Emergency Medicine*, 21(5), 1059-1066. <https://doi.org/10.5811/westjem.2020.7.48684>



21. Teixeira, Carmen Fontes de Souza et al. A saúde dos profissionais de saúde no enfrentamento da pandemia de Covid-19. *Ciência & Saúde Coletiva*, v. 25, n. 9, p. 3465–3474, set. 2020. USTURALI, D. et al. Mental well-being of healthcare professionals during the peak of COVID-19 pandemic in Turkey. *Pakistan Journal of Medical Sciences*, v. 37, n. 1, 2021. DOI: <https://doi.org/10.1590/1413-81232020259.19562020>. Disponível em: <https://www.scielo.br/j/csc/a/6J6vP5KJZyy7Nn45m3Vfypx/?lang=pt>. Acesso em: 08 dez. 2023.