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ASPECTS REGARDING BURNOUT SYNDROME IN HEALTHCARE WORKERS WITH SECONDARY EDUCATION IN THE REPUBLIC OF MOLDOVA, DURING THE PANDEMIC PERIOD

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Keywords: *professional burnout syndrome, mid-level medical personnel, COVID-19 infection.*

Introduction. *The COVID-19 pandemic has created favorable conditions for the onset and exacerbation of burnout syndrome. The aim of the research was to assess the degree of impact of burnout syndrome on mid-level medical staff during the pandemic period, as well as its determinants.*

Material and methods. *The research was based on a selective descriptive, quantitative study conducted from November 2022 to March 2023. The quantitative component involved surveying a sample of 463 nurses and midwives involved in providing medical care to COVID-19 positive patients.*

Results*. The results indicate that burnout syndrome during the pandemic period affected 100% of mid-level medical personnel who provided medical care to COVID-19 patients. The most pronounced dimension of burnout syndrome was psycho-emotional exhaustion, at 29.2%. Younger age and shorter work experience were more affected among mid-level medical personnel. Medical staff in republican, departmental, and municipal medical institutions were more affected than those in district institutions.*

Conclusions. *Burnout syndrome was detected in all medical workers involved in healthcare delivery, predominantly manifesting itself through psycho-emotional exhaustion, with varying degrees of intensity among different categories of medical personnel.*

Cuvinte-cheie: *sindromul de ardere profesională, personal medical mediu, infecția COVID-19.*

ASPECTE PRIVIND AFECTAREA PRIN ARDERE PROFESIONALĂ A LUCRĂTORILOR MEDICALI CU STUDII MEDII DIN REPUBLICA MOLDOVA ÎN PERIOADA PANDEMICĂ

Introducere. *Pandemia COVID-19 a creat condiții propice pentru instalarea și accentuarea sindromului burnout. Scopul cercetării a fost de a evalua gradul de afectare prin sindromul de ardere profesională a personalului medical mediu în perioada pandemică, precum și factorii determinanți ai acestuia.*

Material și metode*. Cercetarea prezentă a constat în studiul de tip selectiv descriptiv, cantitativ, efectuat în perioada noiembrie 2022 – martie 2023. Componenta cantitativă a implicat chestionarea unui eșantion de 463 de asistenți medicali și moașe implicate în acordarea asistenței medicale pacienților cu COVID-19.*

Rezultate*. Rezultatele arată că sindromul de ardere profesională în perioada pandemică a afectat 100% din personalul medical mediu care a acordat asistență medicală pacienților cu COVID-19. Dimensiunea cea mai exprimată a sindromului burnout a fost epuizarea psiho-emoțională, în 29,2%. Cel mai afectat a fost personalul medical mediu de vârstă tânără și cu stagiu de muncă mic. Personalul medical din instituțiile medicale republicane, departamentale și municipale au fost mai afectați decât cei din instituțiile raionale.*

Concluzii. *Sindromul de ardere profesională a fost depistat la toți lucrătorii medicali implicați în actul medical, exprimându-se, în special, prin epuizare psiho-emoțională, diversă după intensitate, în diferite categorii de personal medical.*

INTRODUCTION

Burnout syndrome (BOS) is one of the many issues facing modern society, arising from one's professional life and work environment, with immediate consequences on professional activities as well as the health of those who perform that work (1).

Burnout syndrome was initially described specifically in relation to medical activity. In 1981, Maslach and Jackson proposed a multi-dimensional approach to burnout, defining it as "a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment" (2). Emotional exhaustion represents a state of psycho-emotional fatigue resulting from mental overload, an inadequate perception of one's own emotions, and indifference. Reduced personal accomplishment signifies a tendency towards negative self-assessment of personal achievements, abilities, and success. Depersonalization is a symptom characterized by the loss of self-awareness due to psychological exhaustion, a disruption in relationships with others (1).

An essential stress factor for the population, especially for the healthcare system, has been the COVID-19 pandemic. To date, the virus has affected approximately 761 million people and continues to evolve, generating new strains and new victims. Humanity is approaching the tragic milestone of around 6.8 million deaths caused by COVID-19 infection on a global scale (3).

Although the pandemic lasted for approximately two years, the subject of burnout among healthcare professionals due to burnout syndrome has become very attractive to various authors. A meta-analysis and systematic review of 148 studies with a sample of 154,194 healthcare workers conducted in Asia from the beginning of the pandemic until March 15, 2021, found burnout syndrome in 68.3% of the respondents. The prevalence among nursing staff was 50% higher than among doctors (4).

The study of the impact of burnout on medical nurses through its three dimensions has sparked interest. Galvanis P. et al., in 2021, conducted a systematic review (following Cochrane criteria) of sixteen studies that included 18,935 nurses. According to this review, the global prevalence of emotional exhaustion was 34.1%; depersonalization – 12.6%, and reduced personal accomplishment was 15.2%. The main risk factors that increased burnout among nurses were young age, low social support, increased perceived threat of contracting the SARS-CoV-2 virus, extended working hours in quarantine areas, working in hospitals with inadequate and insufficient material and human resources, increased workload, and lower levels of training regarding COVID-19 (5).

Nurses are facing unprecedented damages due to the COVID-19 pandemic. A survey conducted by AMN Healthcare (a staffing agency in the USA) found that nurses surveyed experienced significantly elevated levels of stress, exhaustion, and other challenges, leading nearly 1 million nurses to consider the possibility of leaving the medical profession (6).

In the Republic of Moldova, the impact of burnout syndrome on mid-level medical staff was studied in 2015, where an impact of 60.6% was identified, in the absence of pandemic conditions (1).

The *aim of the research* is to assess the level of impact of burnout syndrome on mid-level medical workers in COVID-19 profile departments in the Republic of Moldova during the pandemic period, as well as to identify predisposing factors of burnout syndrome.

MATERIAL AND METHODS

The research in question represents a cross-sectional, selective, descriptive study conducted through questionnaire surveys of a representative sample of 413 mid-level nurses (calculated from the total number of nurses practicing in the country – 15,811 individuals) who worked in COVID-19 departments during the pandemic, providing direct medical care to COVID-19 positive patients. The exclusion criterion was refusal to participate in the study. The questionnaire was developed for the purposes of the study, taking into account scientific standards and international study data. The questionnaire structure consists of 41 items divided into three parts, including: Socio-demographic data; Maslach Scale (*Burnout Inventory*) (7) with 25 items structured into 3 dimensions of BOS (emotional exhaustion, depersonalization, derealization); Opinions on BOS factors in COVID-19.

In distributing the questionnaires, consideration

was given to the level of the institution, geographical distribution, and willingness to participate in the study. To ensure the representativeness of the sample, only nurses who worked in COVID-19 departments and provided medical care to COVID-19 infected patients were selected. A total of 600 questionnaires were distributed across 9 medical institutions: one republican, one departmental, 3 municipal institutions, and 4 district institutions, including 3 level 2 institutions and one level 1 institution. The questionnaires were administered anonymously, being self-administered, and a total of 495 questionnaires were returned, of which 463 were validated. Data collection took place from November 2022 to March 2023, with an unrestricted timeframe for the observed pandemic period. Data analysis was conducted using Excel.

RESULTS

Within the study, following the application of the Maslach Scale, it was found that 100% of the respondents were affected by burnout syndrome. The lowest recorded score was 27 points (the minimum score of the *Scale* being 25 points), with two such questionnaires, and the highest score was 112 points (the maximum score of the *Scale* being 125 points). The healthcare staff was affected by burnout syndrome differently (minimal, moderate, or high): the majority of respondents reported a moderate level of impact (58%); lightly affected individuals accounted for 26% of respondents; and 16% reported a high level of burnout (fig. 1).

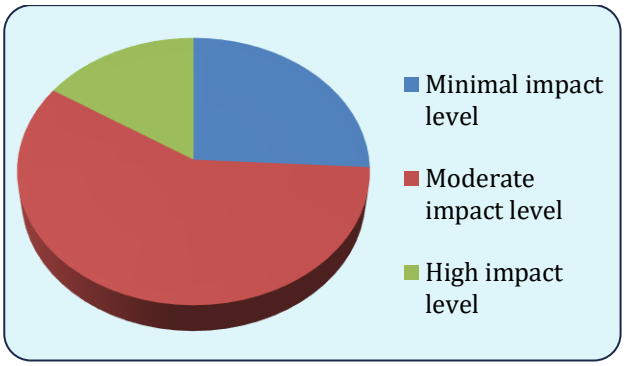

Figure 1. Impact of burnout syndrome on mid-level medical personnel.

With regard to the three characteristics of the syndrome – emotional exhaustion, depersonalization, and reduced personal accomplishment – a *high impact level* was reported by respondents as follows: 29.2% for emotional exhaustion, only 6.8% for depersonalization, and 7.8% for reduced personal accomplishment. The respondents' *moderate impact level* on the dimensions of BOS is as follows: 60.9% – reduced personal accom-plishment; 50.5% – emotional exhaustion; 22.4% – depersonalization. For the *low impact level*, the dimension of depersonalization was reported in the highest proportion (70.8%) (fig. 2).

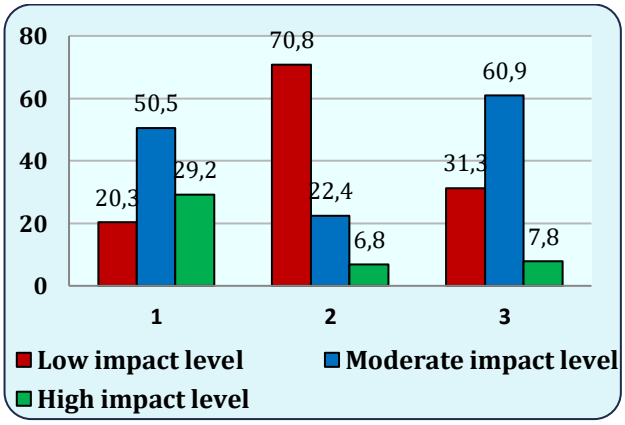

Figure 2. Impact on mid-level personnel through the dimensions of burnout syndrome (%).

High-level burnout syndrome impact by categories. Given that the *high impact level* through burnout syndrome poses the greatest risks to the health of individuals and the quality of services they provide, our study aimed to investigate the connection between *high level* burnout syndrome impact and certain socio-demographic characteristics of the respondents, such as age, years of work experience, duration of work in COVID-19 departments, institutional level, isolation from loved ones, and experiencing COVID-19 infection.

Thus, a *high impact level* due to burnout syndrome was reported by respondents in the age group of up to 25 years (19.6%), while those least affected were respondents in the 55 years and older age group (12.1%). According to the presented data, younger respondents appear to be more vulnerable, while older respondents seem to be more resistant ($p<0.001$) (t-test Paired Two sample for Means in Excel). Regarding psycho-emotional exhaustion, a *higher impact level* is reported by mid-level medical personnel in the age group up to 25 years (34.8%), while a lower proportion (21%) is reported by those aged 55 years and older. Therefore, psycho-emotional exhaustion is inversely proportional to the age of the respondents ($p<0.001$).

Regarding work experience, it was determined that those with up to 5 years of experience are affected at a *high level* by burnout syndrome in 21.13% of cases, while those with over 30 years of experience are affected in only 13.3% of cases ($p<0.001$). The same trend continues for the component of psycho-emotional exhaustion of burnout syndrome: healthcare personnel with up to 5 years of experience are assessed as having a *high impact level* in 38% of cases, whereas those with over 30 years of experience are affected in only 15.5% of cases ($p<0.001$).

According to the obtained data, there is a correlation between the duration of work in COVID-19 departments and the level of burnout syndrome impact. Thus, individuals who worked in COVID-19 departments for up to 3 months experienced a *high level* of burnout in only 5.6% of cases, while those who worked for 12 months or more were *strongly affected* in 18.8% of cases ($p<0.001$). The level of psycho-emotional exhaustion is also dependent on the duration of work in COVID-19 departments, being directly proportional to the time spent in these sections. Therefore, among individuals who provided medical care to COVID-19 positive patients for up to 3 months, a *high impact level* was observed in only 11.1% of cases, whereas for those who worked for more than 12 months in COVID-19 departments, a *high level* of psycho-emotional exhaustion was observed in 33.2% of cases ($p<0.001$).

An aspect studied in the research was the level of impact on personnel depending on the type of institution. Correspondingly, a *high impact level* due to burnout syndrome was reported to a greater extent by mid-level medical personnel in departmental institutions (27%), presumably because COVID-19 patients were still being treated there at the time of the study. This was followed by a consecutive decrease in the proportion of those affected as follows: republican institutions (16.8%), municipal institutions (17.2%), and district institutions (10.5%) ($p<0.001$). *High level* psycho-emotional impact was reported by personnel in institutions located in the city of Chisinau, specifically at 43.2% in departmental institutions, 40.8% in municipal institutions, 39.6% in republican institutions, and 14% in district institutions. These differences could be explained by the complexity of cases and the duration of providing medical care to COVID-19 patients in the mentioned institutions ($p<0.001$).

Considering that many of the mid-level medical personnel who provided medical care to COVID-19 patients spent a significant amount of time in isolation, we aimed to study the influence of isolation on the level of burnout syndrome im-pact. Accordingly, we found that those who did not adhere to the isolation regimen were affected at a slightly higher, but not statistically significant, proportion of a high degree – 16.6% versus 15.4% ($p<0.001$) – with a slight upward trend for *psycho-emotional exhaustion*, which affected a greater proportion of those who adhered to the isolation regimen (31.6%) compared to those who did not adhere (26%) ($p<0.001$).

We also investigated the impact level due to burnout syndrome depending on experiencing COVID-19 infection. Among mid-level medical personnel who experienced COVID-19 infection, a *higher degree* of impact was assessed in a greater proportion than among medical personnel who did not experience the infection: 17.6% versus 11.3% ($p<0.001$). Accordingly, 31.8% of those who experienced COVID-19 infection reported an advanced *level* of psycho-emotional exhaustion, compared to 23.3% of those who were never infected with COVID-19 ($p<0.001$).

Influencing factors related to burnout syndrome. In the study, the respondents' opinions regarding factors that could prevent or facilitate burnout syndrome were evaluated, placed in the multiple-choice questions of the questionnaire. According to the respondents' opinions, several factors could have contributed to reducing or preventing burnout during the COVID-19 pandemic, including: support from superiors and colleagues (19.9%); support from loved ones (19.2%); a suitable work schedule (18.8%); sufficient human resources (18.2%); adequate professional training (12%); and better information about the disease in question (11.2%) (fig. 3).

In the respondents' view, the most important factor that could have led to the onset of burnout syndrome is the increased risk of infection at 21%, followed by the difficulty of cases and the work environment at 18.7%, and the extended work schedule at 18.4%. Relationships with colleagues could have caused burnout syndrome in 11%, self-isolation in 10%, and the relationship with superiors and patients in less than 10% (fig. 4).

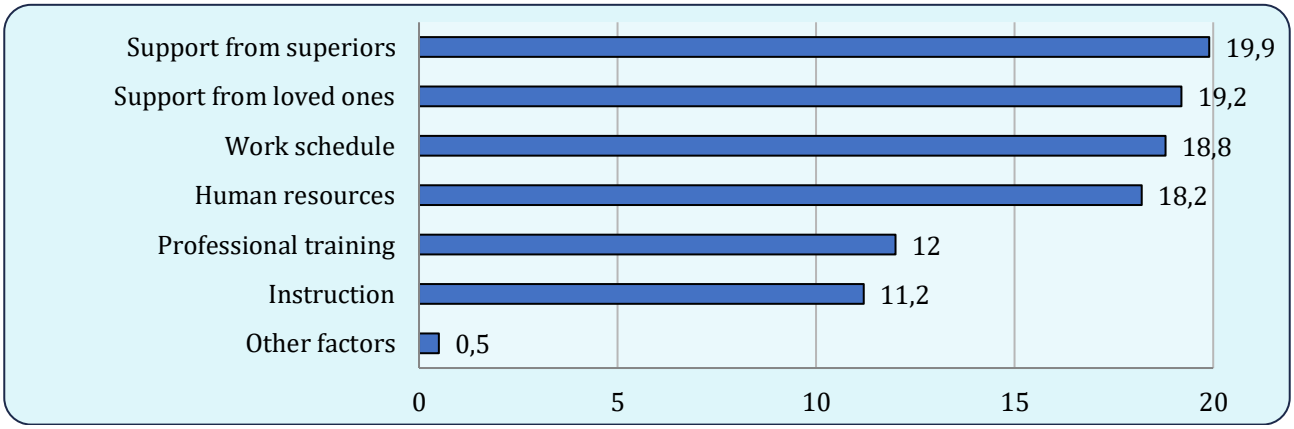

Figure 3. Factors that could have reduced the onset of burnout syndrome (%).

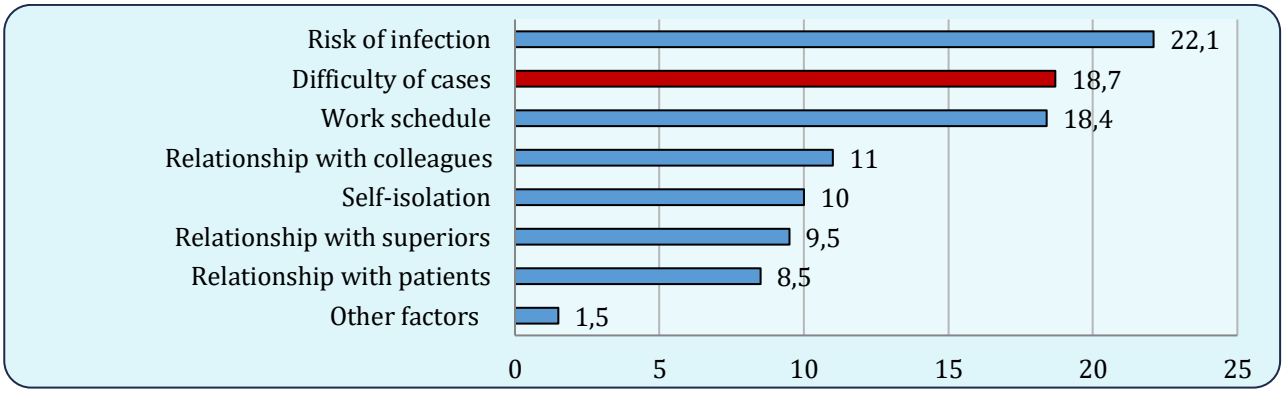

Figure 4. Factors that could have led to the onset of burnout syndrome (%).

To overcome burnout syndrome, 181 individuals reported that they needed external help. The main sources of requesting help were respondents' families in 125 cases, help from superiors was requested by 99 individuals, and help from colleagues was sought by 96 individuals.

DISCUSSIONS

The results of the conducted study emphasize the influence of the COVID-19 pandemic as a predictive factor in the onset of burnout syndrome among mid-level medical personnel. The onset of BOS is a gradual process and occurs in the presence of persistent stress factors. During the pandemic, medical staff were constantly exposed to stress, which is why burnout syndrome was continuously increasing. Teo I. and the team of authors studied changes in medical personnel regarding stress, anxiety, and workplace exhaustion over six months of the pandemic and found that the number of individuals reporting workplace stress and exhaustion increased by approximately 1.0-1.2% monthly (8).

The 100% impact on mid-level medical personnel in the study could thus represent the cumulative effect of the two years of the pandemic (the study data were obtained in the final phase of the COVID-19 pandemic). Psycho-emotional exhaustion represents the dimension of burnout syndrome with the highest prevalence for *high impact level*, as reported by other studies, such as the one conducted by Galanis P. and the team of authors (5).

In the study, we found that a range of factors are associated with a *high level* of burnout, including: young age and short work experience, extended work duration in COVID-19 sections/units, exposure to COVID-19 infection, and self-isolation. Among the risk factors mentioned by respondents, the top three are: the risk of infection, the difficulty of treated cases, and extended working hours. Among the preventive factors for BOS were mentioned: family support, support from superiors, a balanced work schedule, and sufficient resources. Similar results have been obtained in other studies. Galanis P. points out that the main

risk factors that increased nurses' exhaustion included the following: young age, perceived threat of SARS-CoV-2 infection, extended working hours in quarantine zones, working in hospitals with inadequate and insufficient material and human resources, increased workload, and lower level of training regarding COVID-19 (5). In 2021, Zhang Y. reported the importance of age and work experience as triggering factors for burnout during the pandemic: participants of a younger age experience greater emotional exhaustion and fewer personal achievements, which is derived from a lack of experience, adaptation, and stress resilience. Burnout was observed in 78.5% of cases in the emotional exhaustion subscale (9). Teo I. mentions that long working hours were associated with a higher likelihood of developing burnout syndrome, while teamwork and a sense of appreciation at the workplace from superiors and colleagues were associated with lower chances of stress, anxiety, and workplace exhaustion (8). Thus, burnout syndrome manifested similarly in different countries.

CONCLUSIONS

1. Burnout syndrome was reported by the surveyed mid-level medical staff at a rate of 100%, and the most impactful dimension of the syndrome was psycho-emotional exhaustion, affecting the mid-level staff at high (29.2%) and moderate (50.5%) levels.
2. The severity of BOS varies depending on a range of factors, including the young age of medical staff, short work experience, prolonged time spent in COVID-19 units, and the level of the institution, etc.
3. According to the respondents' opinion, an adequate work schedule and sufficient human resources can prevent burnout syndrome, while the fear of infection, the complexity of cases, and a stressful work environment, as well as extended working hours, can contribute to its onset.

CONFLICT OF INTEREST

The authors do not have any conflicts of interest.

FUNDING STATEMENT

The study was conducted as part of a master's research project within the School of Public Health Management.

ETHICAL APPROVAL

The study does not present ethical risks and does not require examination and approval by a Research Ethics Committee.

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