



## PHARMACISTS' WORKPLACE SAFETY DURING THE COVID-19 PANDEMIC

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**Keywords:** pharmacy, pharmaceutical activity, security, workplace, COVID-19 pandemic.

**Introduction.** Pharmacists are likely to be exposed to lower risks in healthcare emergencies compared to health workers from other health sectors (primary care, emergency care or hospitals). This present research has assessed the risks of pharmaceutical workers during the COVID-19 pandemic, as well as analysed the safety measures applied within the workplace in order to present recommendations for the protection of pharmacists and reducing the risk factors.

**Material and methods.** A quantitative and a qualitative study was carried out during the present research. The quantitative study was carried out on a sample of 336 pharmacists and pharmacist assistants from different pharmacies. The qualitative study was based on in-depth interviews with 8 representatives from different areas of the pharmaceutical sector.

**Results.** The study results reflected several aspects regarding the roles of pharmacists, the risks they were subjected to, and the morbidity of pharmacists during the COVID-19 pandemic, as well as in terms of provision and maintaining safety workplace conditions.

**Conclusions.** Several recommendations were developed based on the analysis and conclusions of the research, which aimed at increasing the safety of pharmaceutical workers in public health emergencies such as epidemics or pandemics.

**Cuvinte cheie:** farmacie, activitatea farmaceutică, securitate, loc de muncă, pandemie COVID-19.

**SIGURANȚA LA LOCUL DE MUNCĂ A FARMACIȘTILOR ÎN PERIOADA PANDEMIEI COVID-19**

**Introducere.** Aparent s-ar părea că riscurile la care sunt supuși farmaciștii în timpul urgențelor de sănătate sunt cu mult mai mici, comparativ cu lucrătorii medicali din alte sectoare ale sănătății (asistența medicală primară, asistența medicală de urgență sau cea din spitale). În cadrul prezentului articol a fost efectuată o evaluare a riscurilor la care au fost supuși farmaciștii în perioada pandemiei COVID-19, precum și o analiză a măsurilor aplicate privind asigurarea securității la locul de muncă, în vederea propunerii recomandărilor pentru protecția farmaciștilor și minimizarea factorilor de risc.

**Material și metode.** În decursul cercetării a fost efectuat un studiu cantitativ și unul calitativ. Studiul cantitativ a fost realizat în baza unui eșantion constituit din 336 de farmaciști și laboranți farmaciști, din cadrul diferitor tipuri de farmacii. Studiul calitativ a fost efectuat în baza interviurilor, în profunzime, cu 8 reprezentanți din diferite domenii ale sectorului farmaceutic.

**Rezultate.** Rezultatele cercetării au reflectat mai multe aspecte privind rolul farmaciștilor în pandemia COVID-19, riscurile la care sunt supuși, morbiditatea în rândul farmaciștilor în perioada pandemiei, precum și asigurarea și menținerea condițiilor de securitate la locul de muncă al acestora.

**Concluzii.** În baza analizei și concluziilor cercetării, au fost elaborate mai multe recomandări orientate spre ameliorarea protecției lucrătorilor farmaceutici, în cazul unor urgențe de sănătate publică: - epidemii sau pandemii.

## INTRODUCTION

During the pandemic period, when patient access to hospitals and polyclinics is restricted, the pharmacist's role in the health system during the pandemic is even more significant than ever, since the pharmacy is the first line of contact, whereas the pharmacist's advice is quite valuable. The responsibility assumed by pharmacists during the pandemic is growing essentially. It is important to perform activities professionally and properly, however a protected and safe environment is important as well (1, 2, 3).

Pharmacists' activities have been specifically redesigned during the COVID-19 pandemic. Throughout the COVID-19 pandemic, pharmacists have assumed increasingly important roles in the identification, management and treatment of patients (4, 5).

Pharmacists working not only in community pharmacies, but also in hospitals, in clinical biology laboratories, in treatment and vaccine research and development, in the pharmaceutical supply chain, pharmaceutical warehouses, in the academic sector and in other sectors have provided all the best of their commitment to services, ensuring continuity of care, access to medicines, medical products and devices, personal protective equipment and provided evidence-based information and advice to the population, helping to control and contain the pandemic, as well as the efficiency and resilience of health systems (6, 7, 8). *The purpose of the study:* To analyse and assess the safety measures applied to pharmacists at work during the COVID-19 pandemic in order to develop specific recommendations to protect the pharmacists and reduce the risk factors.

## MATERIAL AND METHODS

A mixed quantitative and qualitative study was conducted. The study revealed the results of the opinion poll based on the assessment of the study participants (pharmacists, the managers of a pharmacy from community and private pharmacies from Republic of Moldova; the manager of pharmacy/Help Net Pharma from Romania; the expert of WHO from Republic of Moldova) on workplace safety during the COVID-19 pandemic.

*Quantitative study* – the type of fully descriptive study that was carried out based on a sample of

336 pharmacists with higher education and pharmacist laboratory assistants with complete secondary education. The survey was used within the pharmacies of 4 national networks via the Google Forms platform and within the hospital, departmental and paper-based pharmacies between November 2021 and March 2022. The subjects under study were assessed on the following: (a) preventive and control measures of the COVID-19 infection; (b) the main sources of information for the respondents regarding the COVID-19 infection; (c) the provision and maintenance of satisfactory hygienic conditions at the workplace; (d) the existing procedures in terms of providing preventive and control measures of the COVID-19 infection at work; (e) normative framework regarding safety provision at the pharmacist's workplace during the pandemic; (f) the degree of satisfaction/dissatisfaction with protection at the workplace; (g) identification of the necessary measures to be taken in order to improve the protection of pharmacists and reduce the risk factors occurring at workplace.

*Qualitative study* – a type of semi-structured study based on in-depth interviews with open questions conducted on 8 representatives during February – March 2022. Out of 8 participants, 3 respondents work in community/private pharmaceutical units, 1 – in departmental/public pharmacy, 1 – in hospital/public pharmacy, 1 – in *Vasily Procopisin* University Pharmaceutical Center, *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova, 1 – WHO representative from Healthcare Department, 1 respondent from private pharmacy Help Net Pharma, Romania. The sample selection was based on the seriousness and professional competences of the participants working in different structures of the pharmaceutical field in order to achieve the proposed objectives: a) to assess how the pharmaceutical activity was ensured during the COVID-19 pandemic according to legislation; b) what impediments were encountered during the pandemic; c) to what extent were the workplace safety measures applied to pharmacists.

*The research methods* included the historical method, analytical method, mathematical method, statistical method and the comparative method.

**RESULTS**

According to the survey, pharmacists are as exposed to the risk of infection as other healthcare providers from Republic of Moldova, thus 47% of cases of COVID-19 infections were reported during this period (fig. 1).

Only 40% of pharmacists were trained at work on the compliance with the preventive measures of COVID-19 infection, although this was one of the most important recommendations (based on the respondents' survey).

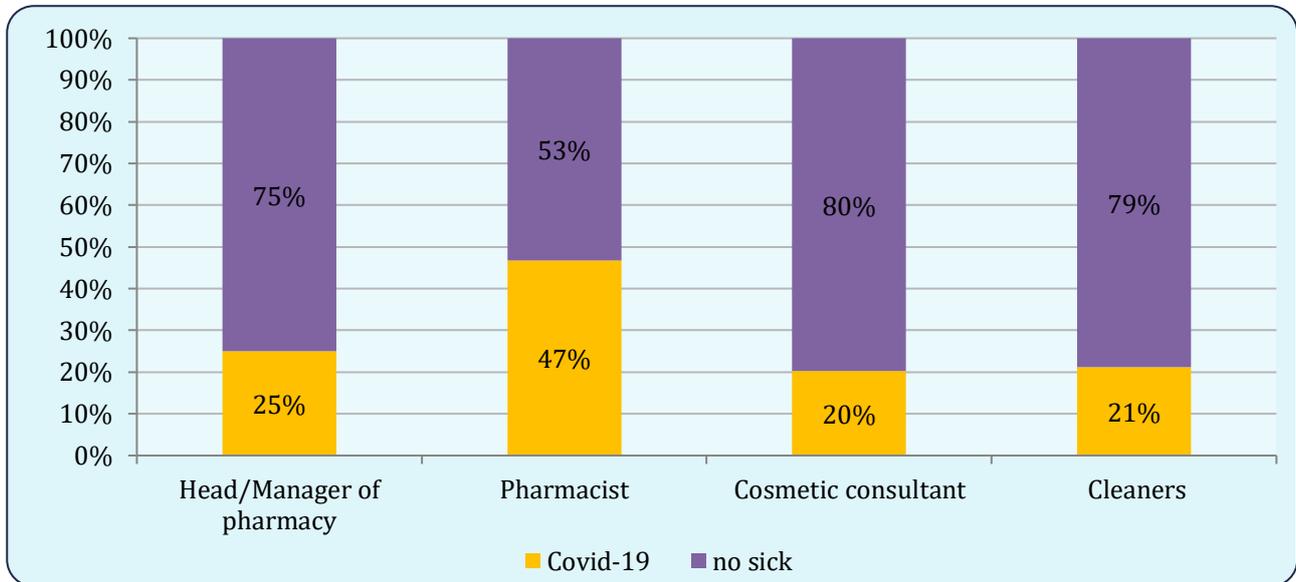


Figure 1. COVID-19 infection risks at workplace.

Out of pharmacies providing 24-hour services, 57% of pharmacists worked overtime, not complying with the work schedule according to the Labour Code (fig. 2), which led to overwork. In most pharmacies, there were no satisfactory working conditions, contrary to the recommendations of the Ministry of Health, Order no. 302/2020 (fig. 3) (9).

Pharmacists were not provided with the necessary equipment at the workplace (72% of pharmacists received masks, 67% – gowns, 55% – gloves, 45% – caps, 35% – visors). Only 22% of pharmacists studied official regulations during the COVID-19 pandemic and only 36% of pharmacists felt secure at work (according to survey respondents).

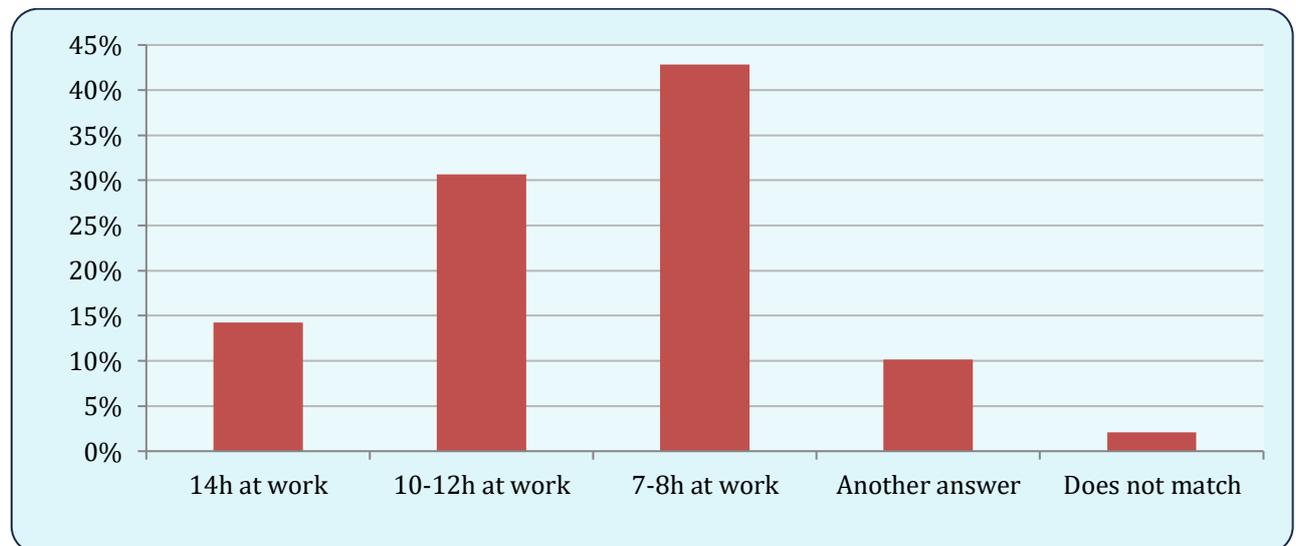


Figure 2. Working hours within the pharmacy.

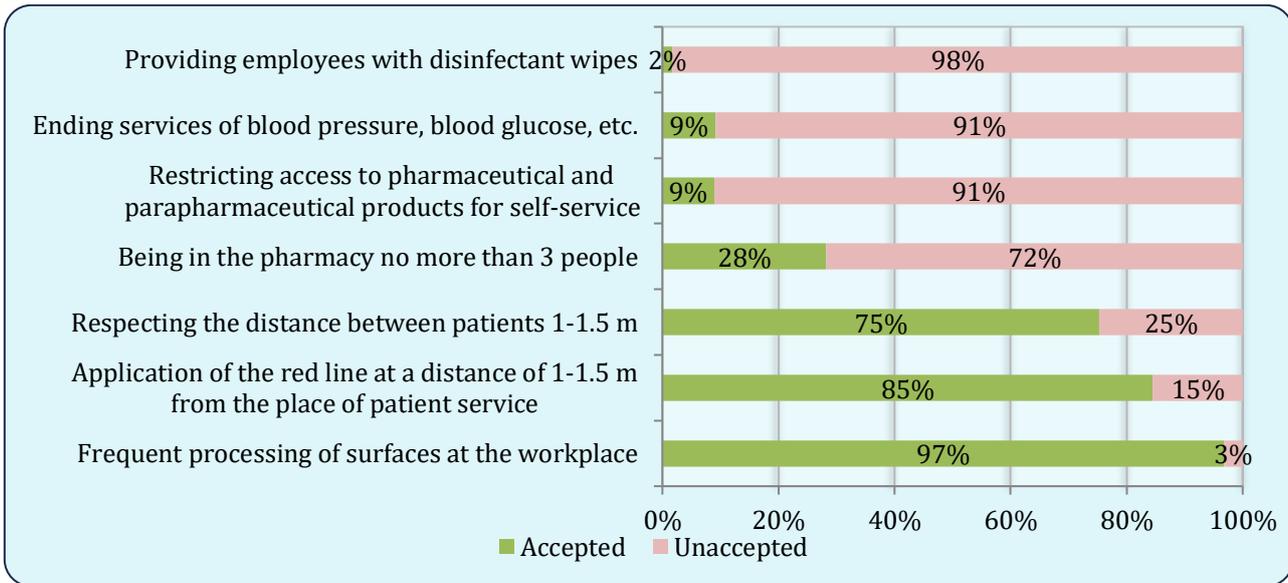


Figure 3. Providing and maintaining appropriate working conditions.

Community pharmacies are usually the first point of direct contact with the population suffering from health problems. As the first point of contact with risk factors, the pharmacist becomes the person most exposed to infections compared to other healthcare workers. This is evidenced by the answers collected by respondents to the question about the average number of people with whom they communicate daily. On average, 49%

of respondents interact with approximately 100-200 people per day, 25% interact with less than 100 people per day, 19% of respondents interact with an average of 200-300 people per day, 19% of respondents interact with more than 300 people per day (these respondents indicated that they worked in pharmacies with a round-the-clock schedule without a break during the pandemic) (fig. 4).

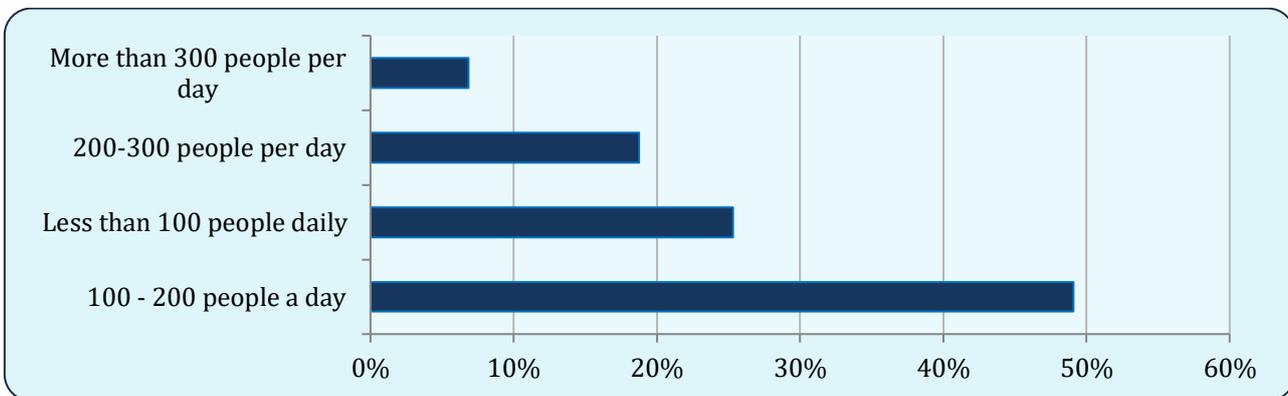


Figure 4. The average number of people to whom the pharmacist interacts with daily.

In the case of closed pharmacies/medical facilities, the risk of illness is much lower given the fact that the pharmacist interacts mainly with medical staff and less with inpatients.

According to the in-depth interviews of the participants on what extent the safety of pharmacists was ensured at the workplace, ranging on a scale from 0-10 (extremely ineffective – extremely effective): the safety of pharmacists was assessed by 2 representatives working in the public sector

with 8 points, 1 representative – 9 points; 3 representatives from the private sector of the Republic of Moldova – with a score of 7; The WHO representative rated the safety of pharmacists – 7 points, and only the representative from Romania claimed as extremely effective – 10 points.

**DISCUSSIONS**

Both the results of the survey and in-depth interviews showed that the infectious disease doctor

and/or an expert group formed by an infectious disease doctor and the head of the COVID-19 department, played a special role in informing the pharmacy employees on current regulations, as well as in training them on appropriate procedures applied during the COVID-19 pandemic and assessing the existing procedures on the protection and safety of pharmacists during the COVID-19 pandemic. One of the differences between the departmental and hospital pharmacies was the presence of green corridors, where only healthy population had access, compared to community pharmacies, where the pharmacist was constantly exposed to risk factors by contacting potential patients. In both categories of respondents, it was mentioned that the pharmacy managers provided pharmaceutical activity according to the working hours stipulated in the Labour Code by performing a rotational 7-8 hour shift work per each pharmacist; by providing a shortened work schedule, as required; and by protecting the retired pharmacists who stayed at home. The respondents of both groups stated that they ensured the safety of pharmacists at work to a fairly effective extent by applying basic preventive measures, according to the Ministry of Health, Order no 315/2020 (10).

The in-depth interviews showed that one of the impediments was the incorrect distribution of personal protective equipment (PPE) at the workplace. Some pharmaceutical units stored PPE for several days while the other ones were not sufficiently provided, especially after the 2020 March alert. Another problem was the training of pharmaceutical staff regarding protective measures at the workplace, since these trainings were of a general profile where WHO and Primary Healthcare (PHC) provided informative materials, whereas more than half of the pharmacists self-trained. More effective management of PPE distribution and training of pharmacists during the crisis should be considered.

The in-depth interviews in terms of specific

measures taken in case of a possible detection of COVID-19 case or outbreak at the workplace revealed that the participants reported different actions depending on the specifics of the pharmacy: (a) the extra-budgetary pharmacy activating within the Public Medical-Sanitary Institution of Ministry of Internal Affairs (PMSI MIA) was closed and only the hospital pharmacy dispensed medicines and those necessary to hospital units, including the COVID-19 ward; (b) the pharmacy of the Institute of Emergency Medicine (EMI) used a protective film on the territory to avoid direct contact with patients; (c) in case of COVID-19 detection, the pharmacy from Romania was closed during a day for total disinfection by DSP (Epidemiological Dispatch from Romania); (d) pharmacists from community/private pharmacies from the Republic of Moldova had to work overtime and were not always appropriately paid.

According to the WHO interviewee, the normative framework regarding the safety workplace conditions of pharmacists during the COVID-19 pandemic was unsatisfactory, because the national recommendations were general for all economic agents, while the Protocols were developed only for doctors. However, the study shows that there is a need for more specific recommendations for pharmacists via some Guidelines and National Protocols.

The following important moments were mentioned while interviewing the manager of the private pharmacy from Romania: (a) pharmacists were provided with 100% PPE; (b) pharmacists were regularly trained by a group of experts, being aware of the current regulations; (c) official sources only from the Ministry of Health were used; (d) the infected pharmacists were monitored via an online platform; (e) the pharmacists were provided with free treatment by the company they worked in; (f) in case of a possible COVID-19 infection/outbreak at the workplace, the pharmacy was subjected to total disinfection by the DSP (Epidemiological Dispatch from Romania); (h) pharmacists felt protected at work 100%.

## CONCLUSIONS

1. Occupational infection of pharmacists/laboratory pharmacists with COVID-19 accounted for 47% of the total number of pharmaceutical personnel, thus both pharmacists and medical workers from other healthcare sectors, have been and are at the forefront of responding to COVID-19 pandemic.
2. Despite the implemented safety and preventive measures against COVID-19 infection at the workplace, there are some challenges such as limited availability of personal protective equipment, high risk of infection through contact with potential patients, and legal barriers to providing accurate workplace safety information to pharmacists during the COVID-19 pandemic.

3. The impact of government decisions on pharmaceutical practice, the activities and responsibilities of the owners and managers of pharmacies in both the private and public sectors are not effective enough to protect pharmacists at work, as well as to minimize risk factors.
4. The safety of pharmacists must be guaranteed by the employer. A unified system of measures and rules applicable at the workplace within pharmacies should be provided. The study showed that pharmaceutical workers were not sufficiently trained and informed on the compliance with safety workplace measures, thus, 60% of pharmacists self-trained.

### RECOMMENDATIONS

1. Development and approval of the Practical Guide for pharmacists regarding safety at work during times of crisis to minimize risk factors.
2. Ensuring the coordination of preparation and response measures at the level of pharmaceutical units and their subsidiaries by economic agents.
3. The adjustment of normative acts and the introduction of general provisions regarding key measures for the prevention of infections at the workplace in separate Practice Guides for managers and pharmacists.

### CONFLICT OF INTERESTS

Authors declare no conflict of interests.

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### ETHICAL APPROVAL

No, the opinion from the ethics committee.

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