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RESEARCH NOTES

Clinician burnout during the COVID-19 pandemic before vaccine administration

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ABSTRACT

Background: Coronavirus disease 2019 (COVID-19) has disrupted pharmacy practice. Little research has been done to assess how COVID-19 has affected pharmacists' employment, workload, and feelings of burnout.

Objectives: The objectives of this study were to characterize the impact of COVID-19 on pharmacists' employment status, workload, and feelings of burnout, as well as to examine emotional health concerns related to COVID-19.

Methods: Wisconsin pharmacists were surveyed using an online instrument between August 25, 2020, and September 22, 2020. The data analysis, performed in December 2020, examined employment status, 3 common burnout risk factors (workload, rewards, and social depersonalization), and emotional health concerns related to COVID-19.

Results: Of the 1300 pharmacists, 439 completed the survey (33.8%). The study analysis included pharmacists in community ($n = 127$) and hospital or health system ($n = 107$) settings. With regard to employment changes and workload, hospital pharmacists (36%) were more likely to have their hours reduced than community pharmacists (13%) ($P < 0.01$), and, conversely, community pharmacists (19%) were more likely to have their hours increased than hospital pharmacists (8%) ($P = 0.01$). For the burnout domain of workload, 45% of the pharmacists reported increased feelings of physical exhaustion at work, and 53% reported increased feelings of emotional exhaustion at work, with no difference between settings. Regarding the burnout domain of rewards, 6% of the hospital pharmacists and 1% of the community pharmacists experienced a reduction in hourly wages or salaries as a result of COVID-19. For the burnout domain of depersonalization, 25% of the pharmacists reported that their ability to connect with colleagues and patients decreased during the COVID-19 pandemic. Additional emotional health concerns reported by the pharmacists included 40% experiencing more anxiety and 25% experiencing more sadness or depression during the COVID-19 pandemic, with no difference between settings.

Conclusion: This study found that the burnout domains related to workload, rewards, and depersonalization were negatively affected by COVID-19. Pharmacy managers need to proactively combat burnout as well as be reactive when employees show signs of burnout to maintain their workforce and meet the COVID-19-associated challenges.

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Background

Pharmacists are involved throughout the entire medication-use process and are vital members of the inter-professional health care team. Pharmacists provide medication expertise and ensure that medications are used safely and effectively across a variety of practice settings. The 2 most common practice settings for pharmacists are community and hospital/health system settings.¹ In community practice, pharmacists provide point-of-care testing, vaccine administration, and education to patients. At hospitals and health systems, pharmacists oversee purchasing, conduct admission

medication histories, monitor inpatient medication therapies, compound and dispense medications for administration, and perform a variety of specialized roles.

The coronavirus disease 2019 (COVID-19) pandemic has affected the workplace, the workload, and the workforce across all employment sectors in the United States, including pharmacy. The impact of COVID-19 included both challenges and opportunities for pharmacists. The effects ran the gamut from enduring layoffs and pay cuts to working additional hours and taking on new roles and responsibilities. On September 9, 2020, the U.S. Department of Health and Human Services issued guidance authorizing pharmacists to procure, dispense, and administer the COVID-19 vaccine when it became available.² During the American Society of Health-System Pharmacists Midyear Meeting in December 2020, Dr. Anthony Fauci³ described the critical role that pharmacists would play in combating the COVID-19 pandemic, including testing and vaccine administration. Dr Fauci³ also warned pharmacists of the challenging months that lay ahead once the vaccine became available.

Clinician burnout has become a significant area of concern for health care professions in recent years, including pharmacy. The *International Classification of Diseases* defines burnout as a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed.⁴ The Maslach Burnout Inventory (MBI) is a questionnaire commonly used to gather information related to the areas of exhaustion, depersonalization, and personal accomplishment.⁵ Additional research from Maslach et al.⁶ identified 6 major risk factors for burnout that include (1) heavy workload, (2) lack of control, (3) lack of reward, (4) lack of community or social interaction, (5) unfair or inequitable work, and (6) value misalignment between the employee and the job.

Before the COVID-19 outbreak, several studies across a multitude of pharmacy practice settings identified burnout among pharmacists in the United States.⁷⁻¹³ The 2019 National Pharmacist Workforce Study reported that 71% of the practicing pharmacists rated their workload as “high” or “excessively high,” an increase from 66% in 2014.¹ Across practice settings, the largest proportion of pharmacists reporting their workload as “high” or “excessively high” were in community settings such as chain (91%), mass merchandiser (88%), and supermarket (82%), distantly followed by hospital (64%) and ambulatory care (57%) settings.¹ During the COVID-19 pandemic, the workload for individuals working in health care increased exponentially and often without any additional rewards or incentives. More time spent at work, and the pandemic itself, limited opportunities for social interaction with family, friends, and colleagues. Maslach’s burnout risk factors of heavy workload, lack of reward, and lack of social interaction were likely amplified for individuals working in health care.

The COVID-19 vaccination effort will require a significant and sustained effort over several months. Given the recent reports of excessive workload and burnout in pharmacy, does the current pharmacist workforce have the energy, vigor, and bandwidth required for such a momentous effort? Will COVID-19 further diminish an already exhausted pharmacist workforce and result in higher rates of burnout?

Objectives

The purpose of conducting the Wisconsin Pharmacy Workforce Survey was to describe the demographics and workplace characteristics of pharmacists and technicians employed in Wisconsin in 2020. The survey was also designed to explore relevant issues and trends affecting the pharmacy profession, including the impact of COVID-19. The study objectives for this manuscript were to (1) determine the impact of COVID-19 on the pharmacist workforce in community and hospital practice settings and (2) characterize the impact of COVID-19 on their employment, burnout, and overall emotional health.

Methods

Survey items

The survey was created to assess how the COVID-19 pandemic affected (1) pharmacy operations, (2) personal employment, (3) personal feelings of burnout as well as satisfaction, emotional health, and other domains. For this study, we focused on questions related to burnout domains and emotional health. For the reward domain, we focused on questions related to changes in personal employment. We identified the survey questions from previously used surveys, including the 2019 National Pharmacist Workforce Survey; where needed, we developed new questions. For the workload domain, we used questions related to exhaustion that were used in the 2019 National Pharmacist Workforce Survey. Similarly, for the social interactions domain, we used questions to measure depersonalization that were used in the 2019 National Pharmacist Workforce Survey. We developed questions about a pharmacist’s social and emotional health. The survey was pilot tested using a convenience sample of academic, community, and hospital pharmacists. We report on 27 questions from the survey in this study. The online survey was distributed through e-mail using a 3-contact Dillman approach, and data were collected using Qualtrics (Qualtrics LLC, Provo, UT).

Sample

The sampling frame included licensed pharmacists living in the state of Wisconsin obtained from the Wisconsin Department of Health and Professional Services database of in-state pharmacy licenses, current as of July 23, 2020. The list obtained included a total of 6651 individuals; however, only 1300 (19.5%) provided functioning e-mail addresses (Appendix 1). Pharmacists with e-mail addresses available in the database received 3 e-mails containing a hyperlink to the online survey. They were asked to click on the survey link to access the survey. The survey respondents were allowed to skip questions that they did not feel comfortable answering. The 3 e-mail prompts to pharmacists were distributed on the following dates: (1) August 25, 2020, (2) September 8, 2020, and (3) September 22, 2020. On October 17, 2020, the survey data files were downloaded.

Statistical analysis

The analysis focused on the 2 largest pharmacist populations: community and hospital/health system settings. Proportions and means were calculated for key variables. The responses from pharmacists in community and hospital/health system settings were compared using *t* tests and chi-square tests for bivariate relationships. Likert-scale responses to the question stem “To what degree did you experience the following during the COVID-19 pandemic?” were dichotomized from a 5-point scale. The combination of the responses corresponding to “extremely” and “a lot” was compared with the combination of the responses corresponding to “moderately,” “very little,” and “not at all.” We chose this specification to ensure that we focused on large, meaningful changes to a pharmacist’s experiences. For the MBI items with the question stem “To what degree did you experience the following before COVID-19 compared to during the COVID-19 pandemic?” the pharmacists recorded their responses before and during the COVID-19 pandemic. The responses to these items showed whether pharmacists’ burnout had increased or decreased.

Results

Sample

Of the 1300 pharmacists with active e-mail addresses, a total of 439 pharmacists responded to the survey, resulting in a response rate of 33.8% (see Appendix 1 for study flow). The sample used for this study included pharmacists who self-identified as working in community or hospital/health system practice settings.

Impact of COVID-19 on employment status and rewards

The primary work-related reward is financial compensation (e.g., salaries, overtime, bonuses).⁶ As seen in Table 1, we found that community and hospital/health system pharmacists were affected by COVID-19. We found that, compared with community pharmacists, hospital/health system pharmacists were more likely to have had their hours reduced, 13% versus 36%, respectively, $P < 0.01$, and, conversely, community-based pharmacists were more likely to have their hours increased than hospital/health system pharmacists (19% vs. 8%, respectively, $P = 0.01$). Our survey findings showed that 6% of the hospital pharmacists and 1% of the community pharmacists experienced a reduction in hourly wages or salaries as a

result of COVID-19. Moreover, 6% of the hospital pharmacists and 2% of the community pharmacists experienced temporary furloughs during the COVID-19 pandemic.

In addition to pharmacists’ experiences, we also examined pharmacists’ concerns about their employment. We observed that 23% of the pharmacists were concerned about their financial well-being, with no difference between community and hospital-based pharmacists (Table 2). Moreover, we found that 26% of the hospital-based pharmacists and 14% of the community pharmacists were concerned about being furloughed or losing their job during the outbreak.

Exhaustion and workload

Overall, 42% of the pharmacists indicated that they experienced an increase in workload or work-related responsibilities during the COVID-19 outbreak, with no statistical difference between hospital and community practice settings (42% and 41%, respectively, $P = 0.77$) (Table 1). As shown in Table 2, Panel B, 45% of the pharmacists reported increased feelings of physical exhaustion at work, and 53% reported increased feelings of emotional exhaustion at work during the COVID-19 pandemic.

Depersonalization and social interactions

With regard to social interactions, approximately one-fourth of the pharmacists reported that their ability to connect with colleagues and patients decreased during the COVID-19 pandemic. Both community and hospital pharmacists reported feeling less interested in talking with patients during the COVID-19 pandemic (26% community, 22% hospital).

Impact of COVID-19 on social/emotional health

We found that COVID-19 negatively affected pharmacists in the community and hospital/health care settings (Table 2, Panel A). Most of the pharmacists felt confident about being able to do their job (72% for hospital/health care and 64% for community); however, approximately 40% of the pharmacists reported experiencing more anxiety, and approximately one-fourth experienced more sadness or depression. Interestingly, despite seeing large differences between community and hospital/health systems regarding the impact of COVID-19 on pharmacists’ employment status, we saw that a little more

Table 1
Impact of the COVID-19 pandemic on personal employment

Domain	Total, N = 234 (%)	Hospital, N = 127 (%)	Community, N = 107 (%)	P value
Not affected	54	43	66	< 0.01
Hours reduced	26	36	13	< 0.01 ^a
Hours increased	13	8	19	0.01 ^a
Hourly/wage reduced	3	6	1	0.06
Alternative service, role, or activity	8	10	5	0.11
Temporary furlough	4	6	2	0.15
Lost job	0	0	0	1.00
Job offer rescinded	1	1	1	0.90

Abbreviation used: COVID-19, coronavirus disease 2019.

Note: All P values are based on a chi-square test.

^a Pharmacists could answer yes to more than 1 question.

Table 2
Impact of the COVID-19 pandemic on social/emotional health and burnout

Domain	Overall (%)	Hospital, N = 128 (%)	Community, N = 101 (%)	P value
Panel A: To what degree did you experience the following during the COVID-19 pandemic? (i.e., between April 2020 and today?) ^a				
I felt confident I was able to do my job successfully during the outbreak	69	72	64	0.128
I felt or experienced more anxiety during the outbreak	41	42	40	0.817
I felt or experienced more sadness or depression during the outbreak	25	24	25	0.860
I was concerned about my personal health and safety during the outbreak	32	32	32	0.994
I was concerned about getting infected at work during the outbreak	30	28	32	0.529
I was concerned about spreading the infection to my family and loved ones	47	46	50	0.530
I was concerned about my financial well-being during the outbreak	23	26	20	0.263
I was concerned about being furloughed or losing my job during the outbreak	21	26	14	0.025 ^a
I experienced an increase in workload or work-related responsibilities during the outbreak	42	42	41	0.773
Panel B: To what degree did you experience the following before COVID-19 compared to during the COVID-19 pandemic?				
Burnout dimension: Exhaustion from excessive workload				
Any increase during the COVID-19 pandemic				
A sense of dread when I think about work I have to do	47	45	51	0.369
Feeling physically exhausted at work	45	47	43	0.516
Lacking enthusiasm at work	47	47	47	0.991
Feeling emotionally exhausted at work	53	51	56	0.522
Burnout dimension: Depersonalization/Lack of community or social interaction				
Any decrease during the COVID-19 pandemic				
Feeling empathetic with patients	11	8	14	0.143
Feeling empathetic with my colleagues	9	8	11	0.423
Feeling sensitive to others' feelings/emotions	9	9	9	0.904
Feeling interested in talking with patients	24	22	26	0.536
Feeling connected with patients	25	19	33	0.019 ^a
Feeling connected with my colleagues	25	28	21	0.203

Abbreviation used: COVID-19, coronavirus disease 2019.

Note: Likert scale variables were dichotomized from a 5-point scale. We grouped "extremely" and "a lot" versus "moderately," "very little," and "not at all."

^a Statistically significant P values.

than 40% of the pharmacists in both settings had an increase in work responsibilities.

Discussion

Our survey found that pharmacists have been affected by COVID-19 in multiple dimensions. First, we found that many community pharmacists' hours increased, and we observed the opposite association with hospital-based pharmacists. This is likely due to hospital systems reducing services in response to, or in expectation of, a surge of patients with COVID-19. Second, for both hospital and community pharmacists, social and emotional health was negatively affected by COVID-19. These factors suggest that burnout increased during the COVID-19 pandemic for both community and hospital/health-system pharmacists. Our survey findings showed that the COVID-19 pandemic has increased the prevalence of increasing workload, diminished reward, and reduced social interactions, placing pharmacists at higher risk for burnout.

Workload

Burnout is primarily a job-specific phenomenon that is commonly associated with excessive workload and increasing job demands relative to the resources available.¹⁴ Our survey found that more than 40% of the pharmacists indicated that they experienced an increase in workload or work-related responsibilities during the COVID-19 outbreak. Elevated or excessive workload without adequate recovery can result in negative physical and emotional outcomes, including exhaustion, which is what we observed in our survey. We found that close to half of the pharmacists reported increased feelings of physical exhaustion at work and increased feelings

of emotional exhaustion at work during the COVID-19 pandemic. During the response to COVID-19, pharmacists were working longer hours, taking on additional responsibilities, and assuming new roles or activities, which likely contributed to feelings of physical and emotional exhaustion. Pharmacists are now expected to be leading the COVID-19 vaccination efforts. It is likely that pharmacists' workload and feelings of exhaustion will continue to increase as they continue to administer the COVID-19 vaccine.

Reward

Work-related rewards can take many forms, including financial compensation (e.g., salaries, overtime, bonuses).¹⁵ COVID-19 brought about financial concerns for many businesses and organizations, which forced administrators to make very difficult employment decisions. Our survey found that at least 1 in 5 pharmacists were concerned about their financial well-being and were concerned about being furloughed or losing their job during the outbreak. Reductions in compensation and hours, as well as temporary furloughs, were more prevalent among hospital pharmacists in our study. This was likely attributed to the preemptive canceling of elective procedures and clinic visits to proactively prepare for a surge of patients with COVID-19 needing inpatient hospital beds. The anticipated surge hit the Midwest region later than anticipated, resulting in low inpatient census and lost revenue for hospitals and health systems during the early part of the pandemic. For example, although the number of new cases per day peaked in New York on April 3, 2020 (10,842 cases), the number of new cases per day peaked in Wisconsin on November 15, 2020 (7045 cases).^{16,17}

Insufficient rewards and the accompanying feelings of continually having to do more with less are among the 6 major risk factors for burnout.^{14,18,19} The financial impact of COVID-19 may have caused pharmacists to be concerned about losing their jobs and their financial stability. The COVID-19 vaccination efforts will likely require further expansion of workload and responsibilities, additional hours, and reduced time off, while likely not providing any financial rewards or incentives. As pharmacists continue to be asked to do more with less, burnout will likely increase. If financial rewards are not an option, social and intrinsic rewards will be essential for recognizing the efforts of pharmacists.

Social interactions

With regard to social interactions, approximately one-fourth of the pharmacists reported that their ability to connect with colleagues and patients decreased during the COVID-19 pandemic. The transition to working remotely or providing care remotely may have contributed to pharmacists feeling less connected with both colleagues and patients during the pandemic. The social isolation of working remotely and feeling less connected with colleagues during the pandemic is likely 1 of the factors contributing to increased burnout among practicing pharmacists.

For those who continued to work on site during the pandemic, physical barriers (e.g., plexiglass partitions), social distancing, and wearing masks that prevent one from recognizing facial expressions, as well as the fear of contracting COVID-19, may have contributed to the pharmacists' feeling less connected with both colleagues and patients. This is consistent with the findings from our survey because many pharmacists reported feeling less interested in talking with patients during the COVID-19 pandemic, were concerned about getting infected at work during the pandemic, and were also concerned about spreading the infection to their family or loved ones.

Recommended interventions to combat and prevent burnout

Efforts to reduce burnout often focus only on how the individual can combat burnout. Individual interventions often include promoting recovery in the form of adequate sleep and physical activity, incorporating mindfulness, improving coping and resiliency skills, or implementing strategies for work-life integration.²⁰ However, organizational structure and leadership contribute to burnout.^{14,21} For example, when managers provide limited supervision, unclear expectations, and limited feedback and recognition, it can all contribute to staff burnout.²¹ Given the job-specific nature of burnout, interventions at both the individual and organizational levels are necessary to curtail burnout. Beyond merely stating that well-being is a priority, administrators must also take action by creating work conditions that prevent burnout and implementing systemic structural changes that truly foster well-being.^{22,23}

Pharmacy administrators should also monitor staff feelings or reports of burnout and engage staff in open dialogue about the potential causes. Similarly, pharmacy administrators should involve staff in developing workplace changes, especially when making difficult decisions (e.g., reducing

compensation, implementing furloughs). Findings from several studies of direct care providers show that burnout was strongly associated with poor work control and low participation in decision making.^{24,25} Engaging pharmacy staff in decision making with openness, respect, and trust can foster staff feelings of control and fairness while reducing burnout.

Limitations

This study has some limitations. First, we surveyed pharmacists only in Wisconsin, which limits generalizability. Second, our survey may suffer from nonresponse bias where the pharmacists with the highest workload would have the least amount of time to respond to a survey. Therefore, our results would be a conservative estimate of the impact of COVID-19 on many aspects of burnout. Third, when analyzing responses from the question stem "To what degree did you experience the following during the COVID-19 pandemic?" we dichotomized Likert responses from a 5-point scale and included "moderately" with "very little," and "not at all." This ensured that we only focused on very large changes, and therefore our estimates are conservative and should be interpreted as being a lower bound estimate of how COVID-19 has affected pharmacists. Fourth, this is a cross-sectional survey, and we are not able to conclusively determine that COVID-19 was the true cause of the changes we observed. Feelings of burnout may have been affected by other factors if the COVID-19 pandemic had not occurred. However, owing to the disruption caused by COVID-19 to society, we find it unlikely that such trends would have occurred in the absence of COVID-19.

Conclusion

Pharmacists are rising to the challenges at hand with courage and confidence in their abilities. However, the COVID-19 pandemic is taking, and will continue to take, a toll on pharmacists' physical and mental health. This research suggests that many pharmacists are experiencing increased burnout as a result of COVID-19, which will likely increase as pharmacists begin to administer millions of doses of the COVID-19 vaccine in the months ahead. Now, more than ever, health care and pharmacy organizations need to take action and combat burnout to ensure that a robust pharmacy workforce continues to be available.

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Appendix 1

Study flow diagram to show how sample was created. Abbreviations used: Tech, technicians; Am care, ambulatory care.

