

# Burnout and secondary traumatic stress in health-system pharmacists during the COVID-19 pandemic

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**Purpose.** To describe the prevalence of burnout and secondary traumatic stress (STS) in health-system pharmacists during the coronavirus disease 2019 (COVID-19) pandemic.

**Methods.** A cross-sectional, professional pharmacy organization listserv-based online survey of a target group of health-system pharmacists across the United States was conducted. The survey was sent out through professional organization listservers and was anonymous and voluntary. The survey questionnaire included items regarding demographics and employment characteristics, COVID-19-related questions, a survey of respondents' perceptions of the prevalence and severity of burnout, and the Professional Quality of Life Scale (ProQOL). The ProQOL assessed respondents for compassion satisfaction (subcategorized as burnout and STS) and compassion fatigue. Descriptive statistics was used to assess the prevalence of burnout and STS.

**Results.** Four hundred eighty-four health-system pharmacists completed the survey. Based on respondents' self-ratings of burnout, 47% were identified as having current burnout and 81% as having a history of burnout. Based on ProQOL scoring, 65.3% of respondents were identified as having a moderate or high likelihood of burnout, which was a prevalence higher than that indicated by respondents' self-ratings. Additionally, 51.4% of respondents were identified as having a moderate or high probability of STS and 99.4% as having a moderate or high probability of compassion satisfaction.

**Conclusion.** The survey found that over half of health-system pharmacists were affected with burnout, half with STS, and all with compassion satisfaction during the COVID-19 pandemic. Unfortunately, the development of burnout and STS in these health-system pharmacists may lead to several work-related consequences (eg, increase risk of medical errors, depression); therefore, addressing burnout and STS is crucial. Further studies of the consequences of burnout and STS during the COVID-19 pandemic are needed.

**Keywords:** burnout, compassion, coronavirus, COVID-19, pharmacists, ProQOL, stress, trauma

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With more than 17 million reported cases of coronavirus disease 2019 (COVID-19) in the United States from March to November 2020 and approximately 114,000 hospitalizations due to laboratory-confirmed COVID-19 as of mid-December 2020, the COVID-19 pandemic crisis has impacted the healthcare system.<sup>1</sup> As the COVID-19 pandemic continues to surge in various

states, increased work demand on and effort by healthcare professionals, especially in healthcare systems, can lead to increased burnout, psychological symptoms, and secondary traumatic stress (STS). The demands posed during these unprecedented times perhaps have led to greater stress and frustration, which in turn can fuel the exhaustion, cynicism, and inefficacy

that are characteristics of burnout.<sup>2</sup> This process has also been described as compassion fatigue, STS, and vicarious traumatization. Job-related burnout has been described as work-related stress whereby a person has physical or emotional exhaustion with a feeling of decreased accomplishment and personal identity. This can reflect negative feelings associated with the person's work and may be associated with very high workload or lack of support in the work environment. STS has been described as stress due to indirect exposure to extreme or traumatic stressful events as a result of one's work. Those with STS may develop fear, difficulty sleeping, upsetting images, and a need to avoid things that are associated with or remind them of the event. Burnout and STS lead to compassion fatigue. Compassion satisfaction, which has been described as having professional satisfaction in one's position, can also be present. A person who has both compassion fatigue and compassion satisfaction may have a better chance of overcoming compassion fatigue due to increased job satisfaction.<sup>3</sup>

Prior to the COVID-19 pandemic, burnout rates among healthcare professionals were reported to be higher than in the general working population.<sup>2</sup> Additionally, studies indicated that burnout rates for pharmacists were over 50% and largely driven by emotional exhaustion.<sup>4-7</sup> Recently, there have been several studies that have shown an overwhelming psychological impact on frontline healthcare professionals during the COVID-19 pandemic. Two studies reported a high prevalence of psychological burden in non-critical care healthcare professionals in other countries.<sup>8,9</sup> Another study confirmed these findings and also showed high rates of psychological burden among physicians, especially younger, frontline, and less experienced physicians; factors associated with the highest prevalence of mental burden included heavy COVID-19 caseloads, increased hours worked, and limitations in logistic support.<sup>10</sup> A recent systematic review (13 studies;

total  $n = 33,062$ ) showed rates of anxiety and depression in healthcare professionals of 23.2% and 22.8%, respectively.<sup>11</sup> Based on these studies, it can be inferred that the COVID-19 pandemic has put significant pressure and stress on healthcare professionals.

Unfortunately, compassion fatigue, including burnout and STS, can lead to medical errors, impact standards of patient care and relationships with coworkers, and lead to physical and mental health conditions.<sup>3</sup> Therefore, it is crucial to evaluate the extent of compassion fatigue in healthcare professionals, including health-system pharmacists. To our knowledge, there are no published studies specifically focused on the prevalence of burnout and STS and perceptions related to burnout among health-system pharmacists in the setting of the COVID-19 pandemic. The study described here evaluated the prevalence of burnout and STS in health-system pharmacists during the pandemic.

## Methods

**Study design.** A cross-sectional, professional pharmacy organization listserver-based online survey of a target group of health-system pharmacists across the United States was conducted. Our local institutional review board approved the study prior to initiation. The primary objective of the study was to describe the prevalence of burnout and STS in health-system pharmacists during the COVID-19 pandemic. The survey was sent out through American Society of Health-System Pharmacists (ASHP) listservers to 5 ASHP Communities that include health-system pharmacists: the COVID-19 Community ( $n = 53,000$ ), Clinician Well-Being and Resilience Community ( $n = 391$ ), New Practitioners Community ( $n = 7,500$ ), Inpatient Practitioners Community ( $n = 20,800$ ), and Pharmacy Practice Leaders Community ( $n = 14,500$ ). The survey was completed anonymously and on a voluntary basis. A response rate calculation was not performed, since the targeted communities included non-health-system

pharmacists and the collected data therefore did not represent health-system pharmacists only. Pharmacists who indicated that they practice in a US health system were included in the study. Incomplete survey responses were excluded from the study. The survey was sent to the respondents with 4 reminders over a 4-week period (April 21-May 20, 2020).

**Survey design and data collection.** The survey questions were developed through Qualtrics Survey Software, version 2020 (Qualtrics, Provo, UT) by the investigators, reviewed by pharmacists and managers, and modified based on feedback. The survey was tested on 10 internal health-system pharmacists and further revised based on results and feedback from these pharmacists; this established the face and content validity of the survey. The survey questionnaire included 62 items assessing demographics, employment characteristics, views on COVID-19-related topics, respondents' perceptions of burnout prevalence, and respondents' self-ratings of burnout, as well as the Professional Quality of Life Scale (ProQOL) questionnaire. Demographics included age, gender, ethnicity, marital status, parental status, loan status, years in practice, areas of practice, place of employment, institution type and size, location of employment, employment position, employment type (full- or part-time), certifications, highest degree held, postgraduate training, and sleep and exercise status. Employment location was further categorized as (1) within one of the top 10 states by COVID-19 infection rate during the survey period or (2) within states outside of the top 10 states. The top 10 states at the time of the survey were New York, New Jersey, Illinois, Massachusetts, California, Pennsylvania, Michigan, Texas, Florida, and Maryland. The COVID-19-related questions assessed impact on employment hours, position, responsibilities, and salary or benefits, as well as impact on childcare and employment of significant others (if applicable). The Physician Work Life Study (PWLS)

single-item burnout measure was used to assess respondents' self-rating of burnout.<sup>12</sup>

The ProQOL was used to measure the negative and positive effects of helping others who experience suffering and trauma.<sup>13,14</sup> Through assessment with of this tool, which has been used to assess both compassion satisfaction and fatigue in healthcare professionals in extremely stress events, compassion fatigue is subcategorized as consisting of burnout and STS. The ProQOL includes 30 validated, reliable, and standardized questions that provide statements (eg, "My work makes me feel satisfied," "I feel worn out because of my work as a [helper]") for which responses are provided on a Likert scale with scores ranging from 1 (never) to 5 (very often). The survey asks respondents to consider each statement about themselves or their current work situation and reflect on how frequently they have experienced the effect of interest in the last 30 days. An individual score is provided for each statement, with item scoring based on the ProQOL categories: compassion satisfaction, burnout, and STS. Prior to calculating the overall score based on ProQOL category, the scores of the 5 items related to positive experiences were reversed (ie, if 1 was selected, the score was changed to 5). Scores for the 10 ProQOL items related to compassion satisfaction were summed to provide a compassion satisfaction score. For the burnout score, scores for the 10 ProQOL items related to burnout were added up. Scores for the 10 ProQOL items related to STS were summed to provide an STS score. In accordance with the ProQOL scoring method for the 3 ProQOL categories, a calculated score of 22 or less indicated a low likelihood of compassion satisfaction, burnout, or STS; a score between 23 and 41 indicated a moderate likelihood, and a score of 42 or more indicated a high likelihood. For example, a respondent's burnout score of 15 indicated a low likelihood of burnout in that respondent. In general, the higher the score for compassion satisfaction,

**Table 1.** Demographic and Employment Characteristics of Survey Respondents (*n* = 484)

Characteristic	No. (%) <sup>a</sup>
Age, mean (SD) [range], y	41.95 (11.68) [21-70]
Female	346 (71.5)
White or Caucasian	418 (86.4)
Married	337 (69.6)
Has children	286 (59.1)
No. of children, mean (SD) [range]	2.24 (0.91) [1-6]
Age of children, y	
0-9	129 (45.1)
≥10	157 (54.9)
Hobby	
Yes	342 (70.7)
No	142 (29.3)
Exercise regularly	
Yes	296 (61.2)
No	188 (38.8)
Regularly get 7-9 hours of sleep	
Yes	294 (60.7)
No	190 (39.3)
Student loans	
Yes	179 (37.0)
No	305 (63.0)
Annual salary	
≤\$119,999	132 (27.3)
\$120,000-\$159,999	219 (45.3)
≥\$160,000	133 (27.5)
Employed in state in top 10 for COVID-19 cases	206 (42.6)
Type of health system	
University	119 (24.6)
Community, nonprofit	289 (59.7)
Other (government, critical access, for-profit, other)	76 (15.7)
No. of beds in institution	
0-250	164 (33.9)
251-500	144 (29.8)
501-750	75 (15.5)
>750	101 (20.9)
Place of employment	
Inpatient hospital	365 (75.4)
Inpatient + ambulatory care clinic(s)	41 (8.5)

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**Table 1.** Demographic and Employment Characteristics of Survey Respondents ( $n = 484$ )

Characteristic	No. (%) <sup>a</sup>
Ambulatory care clinic(s)	33 (6.8)
Other	45 (9.3)
Current pharmacy position	
Management	236 (48.8)
Pharmacist (nonmanagement)	248 (51.2)
Full-time employment	463 (95.7)
Years of professional experience	
0–5	114 (23.6)
6–10	76 (15.7)
11–20	129 (26.7)
>20	165 (34.1)
Highest degree or training	
BS or PharmD	209 (43.2)
PGY1 residency	159 (32.9)
PGY2 residency	102 (21.1)
Other	14 (2.9)
BPS certified	247 (51.0)
ACLS certified	220 (45.5)
Service areas for nonmanagers	
General medicine	45 (18.1)
ICU	29 (11.7)
Central pharmacy	28 (11.3)
Emergency medicine	24 (9.7)
Ambulatory care	20 (8.1)
Medication safety	13 (5.2)
Infectious disease	12 (4.8)
Hematology/oncology	12 (4.8)
Pediatrics	10 (4.0)
Other (transplant, surgery, investigational drugs, informatics, drug information, other)	55 (22.1)

Abbreviations: ACLS, advanced cardiac life support; BPS, Board of Pharmacy Specialties; ICU, intensive care unit; PGY1, postgraduate year 1; PGY2, postgraduate year 2.

<sup>a</sup>All data are number (percentage) of respondents unless specified otherwise.

the higher the likelihood of greater compassion satisfaction. The higher the score for burnout or STS, the higher the likelihood of burnout or STS to occur. Inversely, the lower the score for compassion satisfaction, the lower the

likelihood of compassion satisfaction; the lower the score for burnout or STS, the lower the likelihood of burnout or STS to occur.

The primary outcome of the study was the prevalence of burnout and STS

in health-system pharmacists during the COVID-19 pandemic. Descriptive statistics was used to describe respondents' characteristics, ProQOL scores and categories, burnout characteristics, and COVID-19-related factors. All statistical analyses were performed using IBM SPSS Statistics for Windows, version 27 (IBM Corporation, Armonk, NY).

## Results

Of the 625 health-system pharmacists who started the survey, 484 completed it. Survey respondents had an average age of 42 years, and most were female (71.5%), Caucasian (86.4%), married (69.6%), and/or had children (59.1%). The majority of survey respondents stated they had a hobby (70.7%), exercised regularly (61.2%), regularly got 7 to 9 hours of sleep per day (60.7%), and/or had no student loans (63.0%). Almost half of survey respondents practiced in a state in the top 10 for COVID-19 cases, and three-fourths worked in an inpatient hospital setting. [Table 1](#) summarizes the demographic, employment, and other characteristics of respondents.

As for the impact of the COVID-19 pandemic on employment status and other related factors (see [Table 2](#)), 46.7% of respondents stated that their work hours had increased. Few respondents indicated that they had lost their job or had been furloughed (<6%) or had a reduction in salary or benefits (16.1%). Unfortunately, almost 34% of respondents stated that they had lost childcare due to the COVID-19 pandemic, which may have impacted their ability to work.

Forty-seven percent of respondents reported that they currently had burnout (based on the PWLS self-ratings), and 81% reported a history of burnout. Of the respondents who reported burnout, almost half indicated that they were definitely burned out and had symptoms of burnout and that burnout was related to the pandemic. As for duration of burnout when experienced (currently or in the past), most respondents (81.3%) reported

**Table 2.** Work and Life Impact of COVID-19 Pandemic on Survey Respondents (*n* = 484)

Factor	No. (%)
Impact on work hours	
Increase	226 (46.7)
Decrease	79 (16.1)
None	179 (36.8)
Furloughed	28 (5.8)
Redeployed	39 (8.1)
Decreased salary	83 (17.1)
Had to work remotely	187 (38.6)
Lost childcare	73 (33.8)
Lost job	6 (1.2)
Significant other's job changed and/or impacted	129 (33.6)

Abbreviation: COVID-19, coronavirus disease 2019.

burnout lasting for up to 12 months. Additionally, the mean respondent-estimated prevalence of burnout among pharmacists in their institutions was 43%, which was similar to the self-reported rate of current burnout (47%). The top 4 main drivers of pharmacist burnout cited by respondents were factors related to (1) workload, (2) efficiency and resources, (3) culture, and (4) work-life integration. Table 3 summarizes respondents' self-ratings, perceptions, and descriptions of burnout.

Based on the ProQOL scoring methodology, almost all respondents (99.4%) were identified as having a moderate or high likelihood of compassion satisfaction (Table 4). However, most respondents (65.3%) were identified to have a moderate or high likelihood of burnout, and about half (51.4%) were identified to have a moderate or high likelihood of STS. The mean (SD) score for compassion satisfaction was 37.8 (5.5); for burnout, 25.3 (6.0); and for STS, 23.2 (6.0)—all within the moderate-likelihood range (a score of 23–41).

## Discussion

Several studies have shown that pharmacists are burned out even aside from the COVID-19 pandemic.<sup>4-7</sup> A recent study showed that critical care pharmacists have a 64% risk of

burnout, which is comparable to the risk among other healthcare professionals practicing in the critical care setting.<sup>15</sup> Another recent study showed that 70% of pharmacy staff had experienced moderate to high levels of burnout, with moderate levels of personal accomplishment and emotional exhaustion, but low levels of depersonalization.<sup>16</sup> Additionally, healthcare professionals who are exposed to traumatic and stressful events, such as the COVID-19 pandemic, can develop burnout stress disorders and, potentially, posttraumatic stress disorder.<sup>17</sup> This phenomenon has been described in several recent studies of nurses, physicians, and other healthcare professionals throughout the world.<sup>18-23</sup> In a recent study by Ruiz-Fernandez et al,<sup>24</sup> the ProQOL was used to assess compassion fatigue, burnout, and compassion satisfaction in 506 nurses and physicians who were working in healthcare centers during the COVID-19 pandemic. Results showed that relative to physicians, nurses tended to have higher compassion satisfaction scores (84.4% had scores in the moderate or high range); however, physicians tended to have higher scores for compassion fatigue (94.1% had scores in the moderate or high range) and burnout (84% had scores in the

moderate or high range). Both nurses and physicians had similar STS scores.

Our study showed that health-system pharmacists have rates of burnout and STS similar to rates reported in recent studies. Forty-seven percent of pharmacists reported self-perceived burnout, and 51% reported that burnout was related to the COVID-19 pandemic. However, ProQOL scores indicated a higher prevalence of pharmacist burnout, with scores showing that 65.3% had a moderate or high likelihood of burnout. Unfortunately, 81% of these pharmacists reported a history of burnout, with most reporting that burnout episodes lasted up to 12 months. In addition to burnout, 51.4% of surveyed pharmacists had a moderate or high likelihood of STS, which is a concern. Inversely, almost all pharmacists (99.4%) had a moderate or high likelihood of compassion satisfaction. These results indicate that in the setting of high rates of burnout and STS most likely due to the COVID-19 pandemic, levels of compassion satisfaction were not impacted. Based on these results, we believe further studies are needed to better define the long-term impact of the COVID-19 pandemic on burnout, STS, and compassion satisfaction.

There were several limitations of our study. The length of the survey perhaps caused fewer responses; however, 484 of 625 respondents (77%) completed the survey. The timing of the survey was still relatively early in the pandemic to ascertain the true effects of burnout, but the purpose of the study was to evaluate the impact of a traumatic event, such as the COVID-19 pandemic and consequent caseload surges, on health-system pharmacists' well-being. Surges of COVID-19 infections and the emergence of unknowns surrounding treatment of these infections occurred between March and May 2020. These unknowns may have caused additional stress in healthcare professionals; therefore, we believe a survey conducted during that time period yielded reliable results related to burnout and STS during a stressful event.

**Table 3.** Survey Results for Self-Reported Burnout and Perceived Drivers and Prevalence of Burnout

Outcome or Survey Item	No. (%) <sup>a</sup>
Burnout self-rating ( <i>n</i> = 484)	
I have burnout	231 (47.7)
History of burnout ( <i>n</i> = 253)	
When you experienced burnout (or are currently), approximately how long did the symptoms last?	
<3 months	192 (39.7)
3–12 months	202 (41.6)
1–5 years	78 (16.1)
>5 years	12 (2.5)
If you are currently or have been recently burned out, is/was burnout related to the COVID-19 pandemic?	
Yes	191 (39.5)
What do you believe are main drivers that have contributed the most to job burnout in your institution? <sup>b</sup>	
Workload	300
Efficiency and resources	257
Culture	189
Work-life integration	183
Lack of rewards	133
Control	128
Meaning in work	118
Flexibility	56
Social support and community at work	55
Other	33
Estimated perceived prevalence of pharmacist burnout in respondent's institution, mean (SD) %	43.3 (23.1)

Abbreviation: COVID-19, coronavirus disease 2019; SD, standard deviation.  
<sup>a</sup>All data are number (percentage) of respondents unless specified otherwise.  
<sup>b</sup>Respondents were instructed to select all that apply.

Overall, our study was unique compared to previous studies in health-system pharmacists, since we identified burnout, STS, and compassion satisfaction in the setting of the COVID-19 pandemic. Additionally, we reported results suggesting an overall prevalence of burnout and/or STS in health-system pharmacist of over 50%. The development of burnout and STS may lead to work-related consequences such as decreased productivity, decreased quality of patient care and patient satisfaction, increased employee turnover, and, more concerning, increased risks of medical errors, substance abuse, depression and suicide, and disrupted relationships.<sup>3</sup> Therefore, it is crucial to address burnout and STS among health-system pharmacists.

### Conclusion

In a survey conducted during the early weeks of the COVID-19 pandemic, more than half of health-system pharmacists were experiencing burnout, as reflected by the high percentage of pharmacists identified as having a moderate or high likelihood of burnout based on ProQOL scoring. Additionally, a large proportion of health-system pharmacists had a moderate or high likelihood of STS, but the level of compassion satisfaction was also high. These results showed that health-system pharmacists still had high compassion satisfaction in the setting of burnout and STS potentially due to the COVID-19 pandemic. Further studies are critical to better

**Table 4.** Results of ProQOL Scoring of Survey Respondents (*n* = 484)

ProQOL scoring category, No. (%) of scores	Compassion Satisfaction	Compassion Fatigue	
		Burnout	Secondary Traumatic Stress
High ( $\geq 42$ )	117 (24.2)	4 (0.8)	2 (0.4)
Moderate (23–41)	364 (75.2)	312 (64.5)	247 (51.0)
Low ( $\leq 22$ )	3 (0.6)	168 (34.7)	235 (48.6)
Mean (SD) score	37.8 (5.5)	25.3 (6.0)	23.2 (6.0)

Abbreviations: ProQOL, Professional Quality of Life Scale; SD, standard deviation.

understanding the long-term effects of the COVID-19 pandemic on the well-being of health-system pharmacists.

## Disclosures

The authors have declared no potential conflicts of interest.

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