

Identifying Strategies to Improve Oral Health Workforce Resilience



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September 2023



OHWRC

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PREFACE

The Oral Health Workforce Research Center (OHWRC) at the Center for Health Workforce Studies (CHWS) at the University at Albany's School of Public Health completed a study to describe the levels of burnout experienced by oral health providers in the safety-net during the COVID-19 pandemic including contributing factors and strategies used to increase workforce resilience.

This report was prepared for OHWRC by Simona Surdu, Margaret Langelier, Ellen O'Malley, Theekshana Fernando, Jinman Pang, and Alex Romero. OHWRC is supported by the Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services (HHS) as part of an award totaling \$450,000 with 0% financed with non-governmental sources. The content of this document is reported by the authors and does not necessarily represent the official views of nor an endorsement by HRSA, HHS, or the US government. For more information, please visit [HRSA.gov](https://www.hrsa.gov).

The mission of OHWRC is to provide accurate and policy-relevant research on the impact of the oral health workforce on oral health outcomes. The research conducted by OHWRC informs strategies designed to increase access to oral health services for vulnerable populations. OHWRC is based at CHWS at the School of Public Health, University at Albany, State University of New York (SUNY), and is the only HRSA-sponsored research center with a unique focus on the oral health workforce. The views expressed in this report are those of OHWRC and do not necessarily represent positions or policies of the School of Public Health, University at Albany, SUNY.

September 2023

ACKNOWLEDGEMENTS

The authors wish to thank the staff at the CareQuest Institute for Health and Health Choice Network, Inc (HCN) and their help with obtaining the data for the quantitative analysis of the HCN survey data that is described in this report.

We especially appreciate the guidance of staff at the National Network for Oral Health Access (NNOHA) for their help in identifying prospective health centers and contacts to participate in these interviews. The authors particularly acknowledge the invaluable assistance of the safety-net dental directors who gave permission and arranged time for staff to contribute to this study and to all who participated in the interviews for this research.

Institutional Review Board

The plan for this study was reviewed and approved by the University at Albany Institutional Review Board (Study No. 22X153).

Suggested Citation:

Surdu S, Langelier M, O'Malley E, Fernando T, Pang J, Romero A. *Identifying Strategies to Improve Oral Health Workforce Resilience*. Rensselaer, NY: Oral Health Workforce Research Center, Center for Health Workforce Studies, School of Public Health, SUNY Albany; September 2023.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
Background.....	2
Health Choice Network (HCN) Survey Data.....	3
Key Informant Interviews	5
References.....	7
TECHNICAL REPORT.....	8
Background.....	9
Health Choice Network (HCN) Survey Data.....	11
Methods.....	11
Data Source	11
Survey Data Collection.....	11
Response Rate.....	12
Measures of Burnout.....	12
Data Analysis.....	13
Findings.....	13
Characteristics of Survey Respondents and Health Centers Providing Dental Care.....	13
Symptoms of Burnout Reported by Survey Respondents.....	15
Burnout by Characteristics of Survey Respondents.....	15
Contributing Factors to Burnout	18
Study Limitations.....	20
Discussion and Conclusions.....	21
Key Informant Interviews	23
Methods.....	23
Data Collection	23
Data Analysis.....	25
Guiding Theoretical Framework.....	26
Key Findings.....	26
Common Themes	26
Burnout Stressors.....	28
Strategies to Address Burnout.....	31
Study Limitations.....	32
Conclusions.....	32
References.....	33

TABLES AND FIGURES

TABLE 1. Characteristics of Survey Respondents (n=588).....	14
TABLE 2. Characteristics of Health Centers Providing Dental Care (n=22).....	15
TABLE 3. Burnout Experienced by Survey Respondents by Time Period.....	15
TABLE 4. Burnout at the Time of the Survey by Characteristics of Survey Respondents.....	16
TABLE 5. Burnout During the COVID-19 Pandemic by Characteristics of Survey Respondents.....	17
TABLE 6. Burnout Prior to the COVID-19 Pandemic by Characteristics of Survey Respondents.....	18
FIGURE 1. Primary Contributors to Burnout Among Survey Respondents With Symptoms of Burnout at the Time of the Study by Clinician Type.....	19
FIGURE 2. Primary Contributors to Burnout Among Survey Respondents With Symptoms of Burnout at the Time of the Survey by Clinician Type, 2021.....	20



EXECUTIVE SUMMARY

BACKGROUND

Burnout is a prevalent problem within the health workforce, with consistent associations between symptoms of burnout and turnover intention, absenteeism and depression, as well as medical errors and increased risks to patient safety.¹ Well before the beginning of the COVID-19 pandemic, burnout reached perilous levels among the US health care workforce. In 2017, more than half of physicians and a third of nurses were experiencing symptoms, demonstrating a consistent increase in prevalence since 2013.² Dentists, dental hygienists, and other oral health workforce have likewise been shown to be impacted by burnout.³ Discussions about burnout emphasize the role of workplace characteristics such as extensive working hours, resource management, and lack of autonomy.⁴ The emergence of the COVID-19 pandemic in March 2020 served to heighten issues of burnout across the health workforce. The chance of infection with COVID-19 among the oral health workforce was considered substantial due to the increased risk of contracting the virus through respiratory aerosols and spatter during dental procedures.

This report describes the results of a mixed-methods study on the prevalence and effects of burnout and stress among the oral health workforce in safety-net dental organizations during the COVID-19 pandemic. This research also aimed to assess the environmental and personal factors that contributed to burnout among oral health providers. The report is organized in 2 parts; the first presents the findings from the quantitative research using survey data collected in 2021 and the second describes the common themes identified from the key-informant interviews conducted in 2022.

HEALTH CHOICE NETWORK (HCN) SURVEY DATA

Methods

Researchers at the OHWRC worked with Health Choice Network (HCN) to analyze its 2021 online survey of clinicians working in 25 community health centers across the US. The survey collected information about clinicians' opinions on the topic of worker burnout and the effects of COVID-19. The survey also included information regarding respondents' clinical backgrounds, years of experience, patients served, and hours worked. The final sample consisted of 588 respondents including primary care, oral health, and mental and behavioral health clinicians. Oral health clinician respondents included 33 dentists, 12 dental hygienists, and 25 dental assistants.

The survey used a Likert scale to collect data on the single-item measure of burnout. Responses were dichotomized as no burnout and having symptoms of burnout at the time of the survey (Sep/Oct 2021). The respondents who reported having symptoms of burnout also were asked about the primary contributors to feelings of burnout. In addition, the survey collected information about burnout experienced during the COVID-19 pandemic (Mar 2020-Sep/Oct 2021) and prior to pandemic. IBM SPSS Statistics Version 27.0 and R were used for statistical analyses.

Key Findings

- Nearly 8 out of 10 respondents reported experiencing symptoms of burnout **during the COVID-19 pandemic** (Mar 2020-Sep/Oct 2021), while nearly 6 in 10 clinicians reported similar experiences both **at the time of the survey** (Sep/Oct 2021) and **prior to pandemic**.
- Proportionally more clinicians reported feeling *under stress* (49.3%) or *definitely burning out* (22.5%) **during the pandemic**, while proportionally more clinicians reported that *symptoms of burnout won't go away* (6.7%) **at the time of the survey** than other study periods.
- There were no significant differences in burnout **during the COVID-19 pandemic** across clinician type, which were uniformly high (79.3% oral health; 80.1% primary care; 76.2% mental and behavioral health; 79.1% other health care), while oral health clinicians were less likely to report being burned out **at the time of the survey** and **prior to the COVID-19 pandemic** relative to other clinicians.
- Clinicians providing care to patients in health centers located in the Western US were proportionally more likely to report symptoms of burnout than those in the Eastern US during all study periods.
- More than a third of respondents reported *EHR or other IT tools affecting their efficiency* and *after-hours work* being primary factors contributing to burnout, while more than a quarter reported *no personal control over their workload (working too many hours)*, *lack of effective teamwork in their organization*, and *too much time spent on bureaucratic tasks* as main contributors to burnout.

- Oral health clinicians more often reported *chaotic work environment* and *lack of effective teamwork in their organization* as primary contributors to burnout than other clinicians; however, differences were not statistically significant, possibly due to the small sample size of oral health clinicians.

Study Limitations

The study findings may be affected by missing data, small sample size, lower statistical power, and generalizability. In addition, this study was not able to describe impact of demographics and family characteristics on the burnout experiences of oral health and other health care professionals.

Discussion and Conclusions

The COVID-19 pandemic exacerbated work-related stressors and negatively impacted the mental health and well-being of the workforce, including oral health providers, physicians, and other health care personnel, and increased the risk of poorer mental health outcomes such as depression, anxiety, and stress.^{5,6,7} The current study findings emphasize the levels of burnout and primary contributing factors to burnout among oral health providers. Our study suggests that burnout varied across the characteristics of survey respondents, with oral health care providers being less likely to report burnout compared to other clinicians at the time of the study and prior to the COVID-19 pandemic. Still, the burnout experiences were uniformly high across all clinician types during the COVID-19 pandemic in 2020-2021. *Chaotic work environment* and *lack of effective teamwork in their organization* were the most frequently reported work-related stressors at the time of the survey in Sep/Oct 2021. Further research is needed to assess the prevalence of burnout in dentistry and potential work and family-related factors associated with burnout using validated questionnaires with nationally representative samples of dentists, hygienists, and assistants.

KEY INFORMANT INTERVIEWS

Methods

Between May-October 2022, key-informant interviews were conducted with 26 people in various positions at 11 safety-net dental organizations throughout the US. The participating organizations and their geographic distribution by region were as follows:

- Northeast
 - Community Health Center of the North Country, New York
 - Whitney Young Health, New York
- West
 - Petaluma Health Center, California
 - Ravenswood Family Health, California
 - Alameda Health System, California
 - Salud Family Health, Colorado
 - Terry Reilly, Idaho
 - Future Smiles, Nevada
- Midwest
 - Apple Tree Dental, Minnesota
- South
 - Mary's Center, District of Columbia and Maryland
 - Charlotte Community Health Center, North Carolina

A formal protocol of questions guided the key-informant interviews to collect information about the impact of COVID-19-related stressors on dental staffs' stress and anxiety levels and to determine if burnout and stress affected recruitment and retention issues for the organizations. All interviews were conducted using the Zoom platform. Interview transcripts were analyzed using Dedoose V.9.0.⁸

Key Findings

- At the **environmental level**, key informants reported that many of the most immediate stressors were directly related to the COVID-19 pandemic. The lack of uniformity in policies and requirements and uncertainty about infectious pathways added to the stress of the COVID-19 pandemic and increased the difficulty with compliance since infection control and public health guidance was evolving daily.

- **Environmental stressors** that impacted dental staff also included closures of schools and day-care centers, loss of jobs in families, illness and death from COVID-19, and the isolation from normal social interactions. Things changed quickly; staff were struggling with demands at home and changing processes and assignments at work.
- At the **organizational level**, reported stressors were primarily related to the difficulties with obtaining sufficient personal protective equipment (PPE), finding ways to support the cost of PPE, changing clinical protocols related to aerosol generating procedures, reassigning clinicians to nontraditional roles, furloughing staff, and ultimately, workforce shortages attributed to the COVID-19 pandemic.
- The most common **individual level** stressors described were related to childcare. Nearly all key informants described that lack of day care and lack of in person schools were significant issues, primarily for single parents, with women being disproportionately impacted. The lack of childcare was among the main reasons dental assistants (and hygienists) chose to leave the health center.
- The safety-net organizations implemented **organizational strategies** to encourage well-being and stress management in their staff with an emphasis on self-care. In addition to more time off, several organizations also offered extra pay and more breaktime for their staff. Another strategy employed was more flexibility for parents around scheduling work.

Study Limitations

The qualitative component of the study had a small sample comprising of staff at 11 safety-net organizations in a few states. Therefore, the study findings may not apply to all safety-net organizations.

Conclusions

The COVID-19 pandemic resulted in increased stress and burnout among their oral health staff as well as among other health care providers and administrative staff. The environmental and personal stressors that contributed to burnout cited by the key informants were complex due to their interconnectedness. In addition to examples of stress and burnout, key informants discussed strategies employed by organizations to address and, when possible, alleviate burnout in the workforce.

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TECHNICAL REPORT

BACKGROUND

Burnout is a prevalent problem within the health workforce, with consistent associations between symptoms of burnout and turnover intention, absenteeism and depression, as well as medical errors and increased risks to patient safety.¹ Burnout is a work-related phenomenon that has been studied extensively over many years and across thousands of publications, with a particular focus on professionals who are responsible for direct service to other individuals (eg, human service workers).² Burnout is characterized by 3 components consisting of physical and psychological symptoms of exhaustion, distance from and cynicism about one's work, and reduced professional efficacy. The health care industry is particularly susceptible to burnout issues given the numerous pressures placed on providers, including the challenges of clinical work, extensive demands on time, lack of autonomy in scheduling and work processes, and competing roles and relationships with management.

Well before the beginning of the COVID-19 pandemic, burnout reached perilous levels among the US health care workforce. In 2017, more than half of physicians and a third of nurses were experiencing symptoms, demonstrating a consistent increase in prevalence since 2013.³ Health care workers who suffer from burnout typically experience detriments to a range of quality-of-life metrics, as well as to the quality of care and service to patients, threatening the delivery of care and potentially exacerbating workforce shortages.^{4,5} Dentists, dental hygienists, and other oral health workforce have likewise been shown to be impacted by burnout.⁶ Discussions about burnout emphasize the role of workplace characteristics such as extensive working hours, resource management, and lack of autonomy.⁷

The emergence of the COVID-19 pandemic in March 2020 served to heighten issues of burnout across the health workforce. In previous studies examining the impacts of epidemics on workers, consistent increases in post-traumatic stress disorder and other mental disorders were shown to correspond in time with the severe acute respiratory syndrome (SARS) outbreak, a disease comparable to COVID-19.⁸ Similarly, studies of health care workers in both regular and frontline roles during the COVID-19 pandemic showed that health care staff regularly reported stress, anxiety, and depressive symptoms as a result of COVID-19. Typically, the strongest concerns were about the possibility of infection with the virus.^{9,10}

The chance of infection with COVID-19 among the oral health workforce is considered substantial due to the increased risk of contracting the virus through respiratory aerosols and spatter during dental procedures. Aerosols generated by dental procedures may be suspended in the air for hours before settling on surrounding surfaces or entering airways, leading to an increased risk. Furthermore, many dental practices were unable to remain open during the height of the COVID-19 pandemic, resulting in an increase in high-risk procedures in safety-net dental settings that remained open for emergency services.

While dental offices eventually re-opened, the course of the COVID-19 pandemic has been long. During recent years, the oral health workforce has reported increased levels of burnout symptoms such as psychological distress and work overload, with consistent emphasis on safety and transmission concerns.¹¹ Addi-

tionally, the COVID-19 pandemic necessitated the use of safety protocols that altered work processes and procedures within private dental practices and public oral health provider organizations. Requirements for air exchange challenged the resources of dental offices in terms of expense, time for installation, and room-vacancy protocols following aerosol procedures. The use of extensive personal protective equipment (PPE) also added additional expense, extra time for training skills including donning and doffing, and strategic planning to ensure a continuous supply of essential PPE.¹² In some cases, these pressures resulted in staff departures and turnover and shortages that further exacerbated stress among remaining staff.¹³ As a result, burnout across the oral health workforce as well as its consequences appear to have been aggravated by the COVID-19 pandemic.

While burnout within the health care workforce has been studied carefully over the years, increases in stress and novel demands related to the COVID-19 pandemic necessitate a renewed focus on dental practitioners. Indeed, the added dimension of provider well-being to the optimization of health system performance (ie, the Quintuple Aim) in the last few years underscores the increasing importance of monitoring burnout and its implications for workforce staffing and quality of care.¹⁴

This report describes the results of a mixed-methods study on the prevalence and effects of burnout and stress among the oral health workforce in safety-net dental organizations during the COVID-19 pandemic. This research also aims to assess the environmental and personal factors that contributed to burnout among oral health providers. The study is comprised of quantitative research using data collected by the Health Choice Network in 2021 through an online survey of clinicians working in 25 community health centers across the US, and qualitative research that includes 26 key-informant interviews conducted in 2022 of dental clinicians and administrators in 11 safety-net dental organizations. The report is organized in 2 parts; the first presents the findings from the quantitative research and the second describes the common themes identified from the interviews.

HEALTH CHOICE NETWORK (HCN) SURVEY DATA

Methods

Data Source

Researchers at the OHWRC worked with Health Choice Network (HCN) to analyze its 2021 EHR (electronic health record) Experience Survey data, with a specific focus on a part of the survey that collected data about burnout. HCN is comprised of a network of community health centers (CHCs), some of which provide dental services that collaborate to provide the operational and technical advantages of a larger health system, while remaining independent.¹⁵ The founding CHCs from Miami-Dade County, Florida, joined together in 1994 to improve administrative efficiencies and increase access to quality care for minority and underserved communities.¹⁵ The HCN network continued to grow and expand to include other health centers, merging expertise and available technologies. In 2023, HCN includes 60 safety-net provider organizations with more than 950 health care delivery sites providing services to nearly 3 million patients in 20 states and US territories.¹⁶

The internal survey fielded by HCN collected information from clinicians about their attitudes and opinions on the topic of worker burnout and the effects of COVID-19. The survey also included information regarding respondents' clinical backgrounds, years of experience, patients served, and hours worked per week. A separate file included aggregated statistics regarding each centers' staff and patient volume.

The burnout module in the survey included a single-item measure of burnout which has been used successfully in a variety of settings. It was first introduced in a survey of physicians in a Health Management Organization (HMO) by Schmoldt and colleagues and has been used extensively in subsequent studies of worker burnout.¹⁷ Measurements of burnout are typically derived from the Maslach Burnout Inventory (MBI), a tool first published in 1981. The MBI corresponds with the World Health Organization's definition of burnout which is characterized by 3 dimensions: emotional exhaustion, depersonalization, and lack of personal accomplishment.¹⁸ However, a variety of short-form instruments have also been used to measure burnout focusing on particular components of the MBI's dimensions, with emotional exhaustion being the most common, or on single-item measures. Studies comparing the single-item version used in HCN's survey with the full MBI instrument have shown that the single-item measure can be effectively used as an alternative to the longer MBI to screen for burnout, especially where emotional exhaustion was the primary component of interest and a shorter survey would be most useful.¹⁹

Survey Data Collection

Surveys were sent to clinicians in all of HCN's CHCs. At the time of survey deployment (September 14-October 23, 2021), the universe of member organizations included 25 health centers in 9 states with a workforce

totaling 540 oral health, 1,956 primary care, and 557 mental and behavioral health clinicians, as well as other specialized health professionals (ie, podiatrists, optometrists, pharmacists). Each respondent received the same survey, regardless of clinical background. Nonclinical staff such as maintenance staff and corporate leaders were not included in survey solicitations.

A second wave of data collection was conducted between March 14-April 8, 2022; however, due to the small number of survey respondents (14 oral health clinicians, 63 primary care, 4 mental and behavioral health clinicians, and 15 other clinicians), the results from this sample are not reported here.

Response Rate

The final sample consisted of 588 respondents. The response rate was highest among primary care clinicians (16.4%; n=320), followed by oral health clinicians (13.0%; n=70), and mental and behavioral health clinicians (8.6%; n=48). The response rate for other clinician respondents (n=131) was not calculated due to lack of information on total number of employees working at the time of survey deployment. Nineteen respondents did not provide information about their clinical background.

Measures of Burnout

The HCN's EHR Experience Survey used a Likert scale to collect data on the single-item measure of burnout. The survey asked participants to indicate which of 5 responses best described their response to the statement, "Using your own definition of burnout, select one of the answers below:

1. I enjoy my work. I have no symptoms of burnout;
2. I am under stress and don't always have as much energy as I did, but I don't feel burned out;
3. I am definitely burning out and have one or more symptoms of burnout (eg, emotional exhaustion);
4. The symptoms of burnout that I am experiencing won't go away. I think about work frustrations a lot;
5. I feel completely burned out. I am at the point where I may need to seek help."

Responses were dichotomized as no burnout (answer 1) and having symptoms of burnout (answers 2-5) at the time of the survey (Sep/Oct 2021).

The survey respondents who reported having symptoms of burnout (answers 2-5) also were asked "What are the primary contributors to your feelings of burnout, if any? (Select all that apply)." Response options included 10 items, which spanned contributing factors such as lack of autonomy, shared values, and the use of EHR tools.

The survey also included a statement, "Using your own definition of burnout, please rate your level of burnout during the following periods: before the COVID outbreak; during the COVID outbreak." Applying

the previously described methodology, survey responses were dichotomized as no burnout (answer 1) and having symptoms of burnout (answers 2-5) during the COVID-19 pandemic (Mar 2020-Sep/Oct 2021) and prior to pandemic.

Data Analysis

Descriptive statistics were used to describe the characteristics of respondents and their reported levels of burnout, as well as factors contributing to burnout. Cochran's Q test was used to determine whether the proportion of burnout varied across the study periods. Chi-square tests were used to test for differences in burnout by staff characteristics, including clinician type, years practicing in health care, average hours of clinical practice, patient types served, and geographic location of the health center. Chi-square tests were also used to test for differences in the selection of factors contributing to burnout at the time of the survey by clinician type. Fisher exact/Fisher-Freeman-Halton exact tests were applied in cases where sample size was small. *P*-values of 0.05 were used as significance cutoffs for all analyses. IBM SPSS Statistics Version 27.0 and R were used for analyses.

Findings

Characteristics of Survey Respondents and Health Centers Providing Dental Care

The largest proportion of survey respondents were in primary care (56.2%), followed by allied health (ie, podiatrists, optometrists, pharmacists, and other personnel) (23.0%), oral health care (12.3%), and mental and behavioral health care (8.4%) (**Table 1**). Oral health clinician respondents included 33 dentists, 12 dental hygienists, and 25 dental assistants. Most clinicians had 5-14 years of experience (39.6%), 40-60 hours of clinical practice per week (62.1%), and served both adult and pediatric patients (56.7%). Finally, majority of respondent clinicians provided care at health centers located in the Eastern US (84.5%).

TABLE 1. Characteristics of Survey Respondents (n=588)

Respondent Characteristics	n	%
Clinician Type		
Oral health care	70	12.3
Primary care	320	56.2
Mental and behavioral health care	48	8.4
Other health care ^a	131	23.0
Total^b	569	100.0
Years Practicing in Healthcare		
0-4 years	154	26.6
5-14 years	229	39.6
15-24 years	98	17.0
24+ years	97	16.8
Total^b	578	100.0
Average Hours of Clinical Practice		
<20 hours per week	79	13.7
20-40 hours per week	129	22.3
40-60 hours per week	359	62.1
60+ hours per week	11	1.9
Total^b	578	100.0
Patient Types		
Adult	173	30.2
Pediatric	75	13.1
Adult and pediatric	325	56.7
Total^b	573	100.0
Health Center Location		
Eastern US	497	84.5
Western US	91	15.5
Total^b	588	100.0

Source: 2021 EHR Experience Survey, Health Choice Network, Inc.

^a Other health care includes care by podiatrists, optometrists, pharmacists, and other personnel.

^b Total number of subjects across variables varies due to missing responses, which varied from 1.7%-3.2%.

At the time of survey deployment, 22 of 25 health centers in the HCN offered dental services. The data provided to the OHWRC included the characteristics of each dental clinic, such as the percentage of patients receiving dental services as well as the number full-time dental staff including dentists, dental hygienists, other dental personnel, and the total number of full-time dental staff (**Table 2**). Dental therapists were not employed at any of the 22 clinics. On average, the percentage of dental patients across the dental clinics was 21.3% (range: 7.8%-38.8%). The average number of oral health providers was 28.4 full-time equivalents (FTEs), including 6.9 dentist FTEs, 3.9 dental hygienist FTEs, and 18.1 other dental personnel FTEs.

TABLE 2. Characteristics of Health Centers Providing Dental Care (n=22)

Health Center Characteristics	Mean	Std. Dev.	Minimum	Maximum
Dental patients (%)	21.3	8.9	7.8	38.8
All dental staff (full-time equivalents, FTEs)	28.4	27.3	1.0	99.5
Dentists (FTE)	6.9	5.2	1.0	22.4
Dental hygienists (FTEs)	3.9	3.9	0.9	13.0
Other dental personnel (FTEs)	18.1	19.2	0.0	76.3

Source: 2021 EHR Experience Survey, Health Choice Network, Inc.

Symptoms of Burnout Reported by Survey Respondents

Survey participants were asked to rate their level of **burnout at the time of the survey** (Sep/Oct 2021), **during the COVID-19 pandemic** (Mar 2020-Sep/Oct 2021), and **prior to the COVID-19 pandemic**. A total of 220 clinicians (72.4%) reported having burnout symptoms during all study periods. Nearly 8 out of 10 respondents reported experiencing symptoms of burnout during the COVID-19 pandemic (79.2%), while nearly 6 in 10 clinicians reported similar experiences both at the time of the survey (56.7%) and prior to the COVID-19 pandemic (57.3%); the difference was statistically significant ($P<0.001$) (**Table 3**). Proportionally more clinicians reported feeling *under stress* (49.3%), *definitely burning out* (22.5%), or *completely burned out* (1.9%) during the COVID-19 pandemic compared to the other time periods. Proportionally more clinicians reported that *symptoms of burnout won't go away* (6.7%) at the time of the survey than other study periods.

TABLE 3. Burnout Experienced by Survey Respondents by Time Period

Burnout Symptoms	At the time of the survey		During the pandemic		Prior to pandemic	
	n	%	n	%	n	%
Symptoms of burnout	271	56.7	381	79.2	278	57.3
Under stress	169	35.4	237	49.3	219	45.2
Definitely burning out	66	13.8	108	22.5	49	10.1
Symptoms of burnout won't go away	32	6.7	27	5.6	9	1.9
Completely burned out	4	0.8	9	1.9	1	0.2
No burnout	207	43.3	100	20.8	207	42.7
Total^a	478	100.0	481	100.0	485	100.0

Source: 2021 EHR Experience Survey, Health Choice Network, Inc.

^a Total number of subjects across variables varies due to missing responses, which varied from 17.5%-18.7%.

Burnout by Characteristics of Survey Respondents

Burnout at the time of the survey (Sep/Oct 2021) varied across the characteristics of survey respondents. Oral health care providers were less likely to report being burned out (43.6%) relative to other clinicians (61.4% primary care; 61.9% mental and behavioral care; 50.0% other clinicians; $P=0.016$) (**Table 4**). Years practicing in health care also influenced the burnout experienced by clinicians at the time of the survey

($P=0.017$). Burnout generally increased with years practicing in health care, with the lowest levels of burnout based on 1-4 years of experience (44.5%), and the highest levels based on 25 or more years (62.8%). There were no significant differences in burnout based on average hours of clinical practice or patient type. Clinicians providing care to patients in health centers located in the Western US were significantly more likely ($P<0.001$) to report symptoms of burnout at the time of the survey (79.7%) compared to those in the Eastern US (52.1%).

TABLE 4. Burnout at the Time of the Survey by Characteristics of Survey Respondents

Respondent Characteristics	No burnout		Symptoms of burnout		Difference between groups (χ^2) <i>P</i>
	n	%	n	%	
Clinician Type					0.016
Oral Health Care	31	56.4	24	43.6	
Primary Care	107	38.6	170	61.4	
Mental and Behavioral Health Care	16	38.1	26	61.9	
Other Health Care ^a	45	50.0	45	50.0	
Years Practicing in Healthcare					0.017
0-4 years	66	55.5	53	44.5	
5-14 years	73	41.6	123	58.4	
15-24 years	32	42.0	45	58.0	
25+ years	34	37.2	47	62.8	
Average Hours of Clinical Practice					0.57
<20 hours per week	25	43.4	34	57.6	
20-40 hours per week	44	39.6	67	60.4	
40-60 hours per week	132	44.9	162	55.1	
60+ hours per week	2	25.0	6	75.0	
Patient Types					0.39
Adult	56	40.0	84	60.0	
Pediatric	34	50.0	34	57.3	
Adult and pediatric	112	42.7	150	50.0	
Health Center Location					<0.001
Eastern US	191	47.9%	208	52.1	
Western US	16	20.3%	63	79.7	

Source: 2021 EHR Experience Survey, Health Choice Network, Inc.

Note: Total number of subjects across variables varies due to missing responses, which varied from 19.7%-21.1%.

^aOther health care includes care by podiatrists, optometrists, pharmacists, and other personnel.

Burnout reported during the COVID-19 pandemic (Mar 2020-Sep/Oct 2021) was proportionally higher across all respondent characteristics (79.3% oral health care; 80.1% primary care; 76.2% mental and behavioral care; 79.1% other health care) than either prior to the COVID-19 pandemic or in ratings of burnout at the time of the survey (**Table 5**). There were no significant differences in reported burnout during the COVID-19 pandemic across respondent characteristics, which were uniformly high. Clinicians in the Western US reported the highest levels of burnout (93.5%).

TABLE 5. Burnout During the COVID-19 Pandemic by Characteristics of Survey Respondents

Respondent Characteristics	No burnout		Symptoms of burnout		Difference between groups (χ^2) <i>P</i>
	n	%	n	%	
Clinician type					0.95
Oral Health Care	12	20.7	46	79.3	
Primary Care	55	19.9	221	80.1	
Mental and Behavioral Health Care	10	23.8	32	76.2	
Other Health Care ^a	19	20.9	72	79.1	
Years Practicing in Healthcare					0.11
0-4 years	33	27.5	87	72.5	
5-14 years	38	19.5	157	86.1	
15-24 years	11	13.9	68	81.5	
25+ years	15	18.5	66	80.5	
Average Hours of Clinical Practice					0.13
<20 hours per week	13	22.0	46	78.0	
20-40 hours per week	14	12.8	95	87.2	
40-60 hours per week	69	23.2	229	76.8	
60+ hours per week	1	12.5	7	87.5	
Patient Types					0.26
Adult	31	21.8	111	78.2	
Pediatric	18	26.5	50	73.5	
Adult and pediatric	47	17.9	215	82.1	
Health Center Location					<0.001
Eastern US	95	24.6	309	76.5	
Western US	5	17.2	72	93.5	

Source: 2021 EHR Experience Survey, Health Choice Network, Inc.

Note: Total number of subjects across variables varies due to missing responses, which varied from 19.4%- 20.6%.

^aOther health care includes care by podiatrists, optometrists, pharmacists, and other personnel.

There was a significant difference in reported **burnout prior to the COVID-19 pandemic** based on clinician type ($P=0.037$). Dentists reported the lowest levels of burnout (46.6%) relative to other clinicians (50.5%-63.1%) (**Table 6**). There were no significant differences based on years practicing in health care, average hours of clinical practice, or patient types. Clinicians providing care to patients in health centers located in the Western US were proportionally more likely ($P<0.001$) to report symptoms of burnout (76.9%) than those in the Eastern US (53.6%).

TABLE 6. Burnout Prior to the COVID-19 Pandemic by Characteristics of Survey Respondents

Respondent Characteristics	No burnout		Symptoms of burnout		Difference between groups (χ^2) <i>P</i>
	n	%	n	%	
Clinician Type					0.037
Oral Health Care	31	53.4	27	46.6	
Primary Care	103	36.9	176	63.1	
Mental and Behavioral Health Care	19	46.3	22	53.7	
Other Health Care ^a	46	49.5	47	50.5	
Years Practicing in Healthcare					0.12
0-4 years	62	51.2	59	48.8	
5-14 years	75	38.8	122	61.3	
15-24 years	31	42.0	49	58.0	
25+ years	34	38.1	47	61.9	
Average Hours of Clinical Practice					0.45
<20 hours per week	24	41.4	34	58.6	
20-40 hours per week	42	38.5	67	61.5	
40-60 hours per week	134	44.4	168	55.6	
60+ hours per week	2	22.2	7	77.8	
Patient Types					0.69
Adult	60	42.3	82	57.7	
Pediatric	26	43.4	43	56.6	
Adult and pediatric	112	42.7	150	50.0	
Health Center Location					<0.001
Eastern US	189	46.4	218	53.6	
Western US	18	23.1	60	76.9	

Source: 2021 EHR Experience Survey, Health Choice Network, Inc.

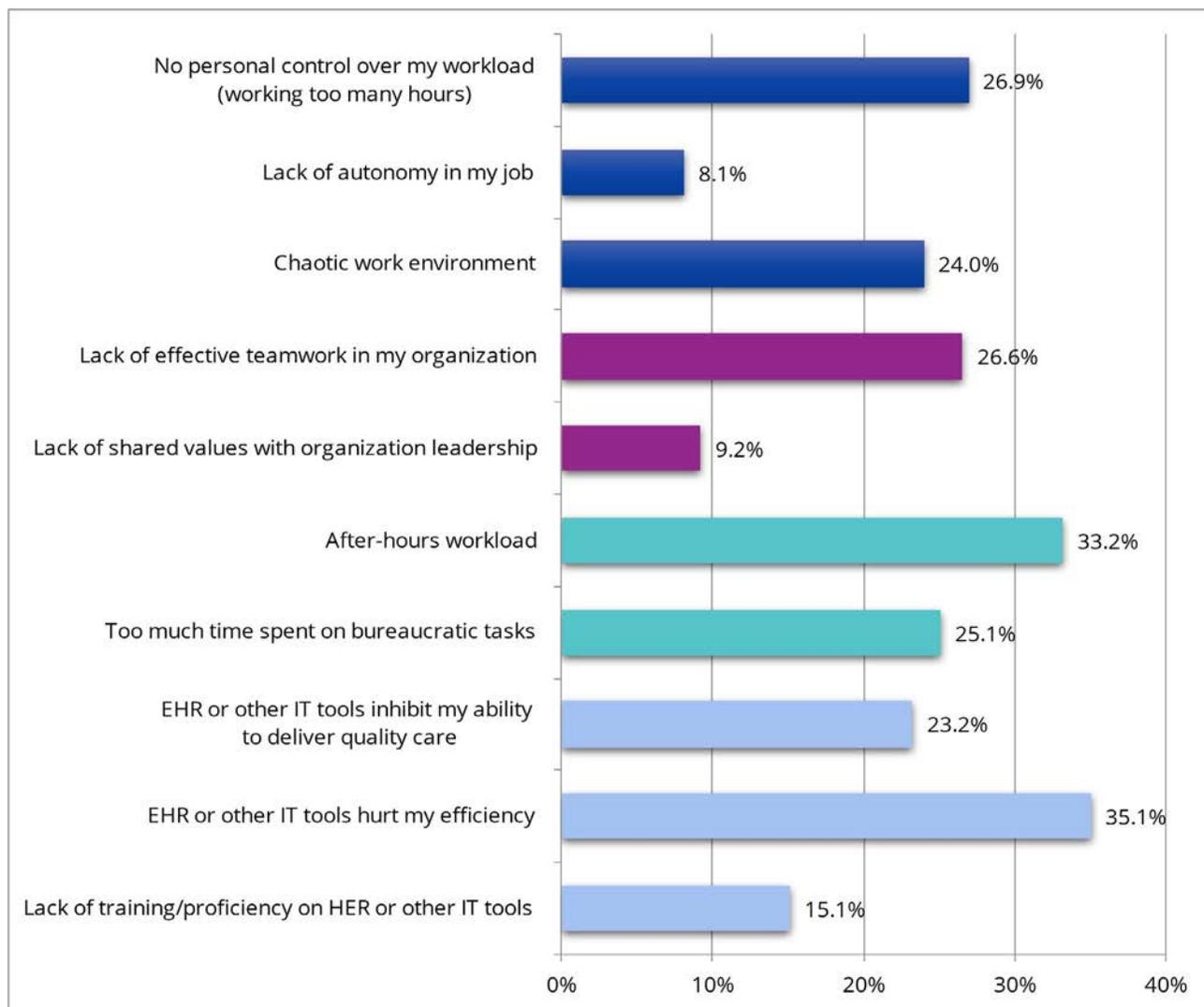
Note: Total number of subjects across variables varies due to missing responses, which varied from 18.7%-19.9%.

^aOther health care includes care by podiatrists, optometrists, pharmacists, and other personnel.

Contributing Factors to Burnout

Survey respondents who reported symptoms of **burnout at the time of the survey** were asked to identify primary contributors to burnout. More than a third of respondent clinicians reported *EHR or other IT tools affecting their efficiency* (35.1%) and *after-hours work* (33.2%) being primary factors contributing to burnout, while more than a quarter reported *no personal control over their workload (working too many hours)* (26.9%), *lack of effective teamwork in their organization* (26.6%), and *too much time spent on bureaucratic tasks* (25.1%) as main contributors to burnout (**Figure 1**).

FIGURE 1. Primary Contributors to Burnout Among Survey Respondents With Symptoms of Burnout at the Time of the Study by Clinician Type

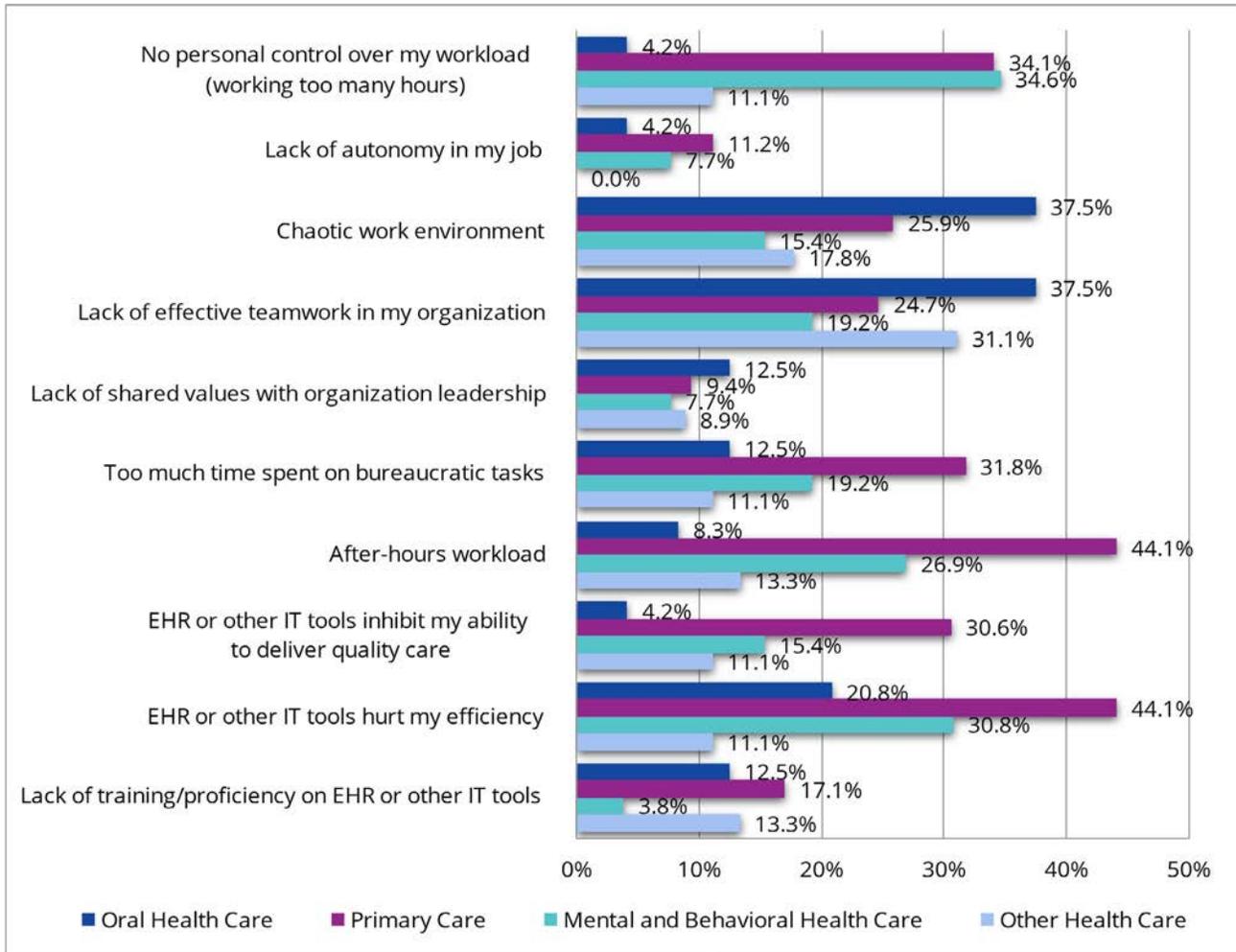


Source: 2021 EHR Experience Survey, Health Choice Network, Inc.

Note: This question included 9 non-mutually exclusive response options. Proportion of subjects with missing information was 21.8%.

Contributors to burnout were also analyzed among clinicians with symptoms of **burnout at the time of the survey** across professional types. Oral health clinicians more often reported *chaotic work environment* and *lack of effective teamwork in their organization* (37.5% vs 15.4%-31.1%) as primary contributors to burnout than other clinicians; however the differences were not statistically significant, possibly due to the small sample size of oral health clinicians (**Figure 2**). Primary care and mental and behavioral care clinicians were significantly more likely to report *no personal control over their workload (working too many hours)* as a contributing factor to burnout compared to oral health clinicians (34.1%-34.6% vs 4.2%-11.1%; $P=0.001$). Survey respondents working in primary care were also significantly more likely to report *after-hours workload* ($P<0.001$), *too much time spent on bureaucratic tasks* ($P=0.011$), and stressors related to *EHR or other IT tools inhibiting their ability to deliver quality care* ($P=0.010$) and/or *hurting their efficiency* ($P=0.022$) than other clinicians.

FIGURE 2. Primary Contributors to Burnout Among Survey Respondents With Symptoms of Burnout at the Time of the Survey by Clinician Type, 2021



Source: 2021 EHR Experience Survey, Health Choice Network, Inc.

Note: This question included 9 nonmutually exclusive response options. Other health care includes care by podiatrists, optometrists, pharmacists, and other personnel. Number of respondents with burnout at the time of the survey who identified a specific contributing factor varied from 0-14 for oral health, mental and behavioral health, and other health care clinicians. Chi-square and Fisher's exact tests were used to test differences in contributing factors to burnout across clinician types and provided similar statistical results. Proportion of subjects with missing information was 25.0%.

Study Limitations

This study has some limitations. The burnout level and contributing factors among oral health and other providers in the safety-net was assessed using HCN's EHR Experience Survey, 2021. The primary purpose of this survey was to learn more about health care providers' training and education, utilization, and satisfaction with an EHR. Therefore, the study findings may be affected by missing data, small sample size, lower statistical power, and generalizability. Our data analyses excluded about 19% of survey respondents who lacked information on the burnout question. Also, the study results are based on clinician respondents from 22 safety-net organizations. These respondents may not represent the burnout experiences and contributing factors among the larger population of health care workforce serving patients in the safety-net system.

Another limitation of this study is the low response rate of 13.0% among oral health providers and 8.6% among mental and behavioral health providers compared to 16.4% among primary care providers, which could lead to response bias. This is a common problem in online surveys, particularly among health care professionals, which on average have 11.4% response rate.²⁰

In addition, self-reported data is subject to recall bias; however, systematic differences in burnout and contributing factors to burnout by clinician types or other characteristics are unlikely. In addition, this study was not able to describe impact of demographics and family characteristics on the burnout experiences of oral health and other health care professionals. Finally, the small number of oral health providers who provided information on burnout limited our ability to evaluate the levels of burnout or to conduct separate data analyses across professions including dentists, hygienists, and assistants.

Discussion and Conclusions

Researchers at the OHWRC evaluated levels of burnout and factors that contributed to burnout among clinicians, including oral health providers, working in the safety-net during the COVID-19 pandemic. The study findings showed that nearly 80% of oral health clinician respondents experienced symptoms of burnout during the COVID-19 pandemic in 2020-2021, while nearly 44%-47% of oral health providers reported similar experiences both at the time of the survey and prior to the pandemic. A recent study of burnout among dentists conducted in the first quarter of 2022 found that 71% of survey respondents reported that their burnout increased during the COVID-19 pandemic, with 58% of dentists experiencing burnout a few times per week or more.¹¹ A study published prior to the COVID-19 pandemic showed that 13.2% of surveyed dentists experienced high burnout, 79.6% of dentists experienced average burnout, and 7.2% experienced low burnout.⁶

The COVID-19 pandemic exacerbated work-related stressors and negatively impacted the mental health and well-being of the workforce, including oral health providers, physicians, and other health care personnel increasing the risk of poorer mental health outcomes such as depression, anxiety, and stress.^{21,22,23} Oral health clinicians were particularly affected due to their high risk of infection as a result of respiratory aerosols and dental procedures, limited access to PPE, layoffs and furloughs, and financial challenges occasioned by dental office closures.²⁴ Recent national studies among oral health clinicians found increased levels of psychological distress.^{25,26}

Our study also suggested that burnout varied across the characteristics of survey respondents, with oral health care providers being less likely to report burnout compared to other clinicians at the time of the study and prior to pandemic. Still, the burnout experiences were uniformly high across all clinician types during the COVID-19 pandemic in 2020-2021. Similarly, the proportion of burnout experienced by clinicians at the time of the study increased with the number of years practicing in health care. Nonetheless, the burnout experiences during the COVID-19 pandemic across all clinicians were proportionally higher irrespective of tenure.

Clinicians providing care to patients in health centers located in the Western US were proportionally more likely to report burnout during all study periods than those in the Eastern US. Hours of clinical practice per week and patient types were not associated with burnout. Oral health providers surveyed indicated that a *chaotic work environment* and/or a *lack of effective teamwork in their organization* were primary contributing factors to burnout at the time of the survey in 2021.

A systematic review of the literature regarding factors associated with burnout in dentists worldwide identified younger age and longer working hours as significant contributors to burnout.²⁷ This review also found that male gender, high level of job strain, and personality type were risk factors for burnout. A study conducted in the US concluded that dentists who were younger, female, and Hispanic/Latina were more likely to report frequent feelings of burnout.¹¹ The use of different research methods (eg, burnout measurement instrument, sampling technique, location) may explain the variation in study findings.

The COVID-19 pandemic has disproportionately affected female-prevalent dental professions such as dental hygienists and assistants due to the increased burdens of caring for children and other family members and the amplified risk of infection/transmission of communicable disease.²⁸ Dental practices experienced unexpected vacancy rates, which further diminished the capacity of dental providers to deliver services and limited access to needed oral health care, particularly for vulnerable populations at high risk of poor oral health and dental disease. Vacancies also increase stress levels among the active workforce who are often required to assume a heavier workload to meet demand. Our study was not able to evaluate the impact of family-related stressors or workforce shortages on burnout among oral health providers as this information was not collected in the HCN's EHR Experience Survey.

The study findings emphasize the levels of burnout and primary contributing factors to burnout among oral health providers in 2021. *Chaotic work environment* and *lack of effective teamwork in their organization* were the most frequently reported work-related stressors. Further research is needed to assess the prevalence of burnout in dentistry and potential work and family-related factors associated with burnout using validated questionnaires with nationally representative samples of dentists, hygienists, and assistants. Moreover, further studies are required to evaluate strategies used to increase resilience and the potential implications of burnout on oral health workforce supply and ultimately, on provision of care for patients.

KEY INFORMANT INTERVIEWS

Methods

Data Collection

Between May-October 2022, unstructured interviews were conducted with 26 key informants in various positions at 11 safety-net dental organizations throughout the US, 9 of which were Federally Qualified Health Centers (FQHCs). Two of the organizations were private, not-for-profit, community dental organizations that provided oral health services for low-income populations in their catchment areas.

The interviews were conducted to obtain information to inform the goals for 3 projects conducted in 2022 by the Oral Health Workforce Research Center (OHWRC). The objectives of the interviews were:

- To understand the environmental and operational effects of COVID-19 on the provision of dental services in the safety-net
- To determine whether or not teledentistry was used to supplement or complement face-to-face encounters with patients during the pandemic
- To describe the impact of COVID-19 related stressors on dental staffs' stress and anxiety and to determine if burnout and stress affected recruitment and retention issues for the organizations

A formal, multidisciplinary protocol of questions guided the interviews for this and the other studies. The protocol was developed after an examination of peer-reviewed literature focused on the COVID-19 pandemic and the resulting difficulties with dental service delivery in private practices, safety-net organizations, and emergency/outpatient settings. The questions related to burnout were informed by peer-reviewed literature on the conceptual origins of burnout, its antecedents, manifestations, consequences, and the interventions designed to reduce its impact.

The protocol was designed to ensure that all substantive areas of interest to study staff relative to the multiple projects were included. The protocol contained several modules that individually and collectively addressed each of the 3 objectives. The questions that were specific to occupational burnout were as follows:

Module D: Oral Health Workforce Burnout and Resilience

1. There has been much discussion about burnout and stress within the health care workforce as a result of the demands of providing clinical services during a pandemic. In your opinion, has this been an issue for the workforce at this FQHC?
2. Has 1 type of worker or profession been more affected by these issues than another? Have any staff chosen to leave their jobs because of COVID-19 pandemic-related concerns or stresses?

3. Can you identify the most often cited stressors for the staff (eg, childcare concerns, transmissibility of the virus)? Has the level of stress and anxiety decreased as more knowledge is gained about the disease and as community supports and services (eg, daycare, schools) have reopened?
4. Has the COVID-19 pandemic impacted the way in which clinicians interact or interface with patients? How has this affected patients and providers?
5. What, if any, strategies has the organization considered to help staff address the emotional challenges of the pandemic? Are there any employee assistance programs, or activities focused on addressing anxiety and stress among the staff?
6. Are there particular efforts to help staff remain engaged and motivated at work (eg, team-level interventions, bonuses/paid time off, scheduling flexibility)?

Not all questions were asked of all informants during the interview process due to time constraints and depending on the relevance of the topic to the role of the informant. The objective of the interviews was to understand how safety-net organizations identified signs of stress and symptoms of burnout during the most difficult months of the COVID-19 pandemic and to learn how these safety-net providers addressed these issues.

The safety-net organizations that participated in the interviews were identified based on guidance from staff at the National Network for Oral Health Access (NNOHA). Each organization was then sent a request describing project objectives and soliciting participation in the interviews. Once consent from organizational management was received, a primary contact was identified and sent the interview protocol.

The participating organizations and their geographic distribution by region were as follows:

- Northeast
 - Community Health Center of the North Country, New York
 - Whitney Young Health, New York
- West
 - Petaluma Health Center, California
 - Ravenswood Family Health, California
 - Alameda Health System, California
 - Salud Family Health, Colorado
 - Terry Reilly, Idaho
 - Future Smiles, Nevada
- Midwest
 - Apple Tree Dental, Minnesota

- South
 - Mary's Center, District of Columbia and Maryland
 - Charlotte Community Health Center, North Carolina

A description of each of these safety-net provider organizations and their more general strategic initiatives during the COVID-19 pandemic can be found in Appendix A of the OHWRC's companion report, [Implications of COVID-19 on Safety-net Oral Health Services](#), posted in the reports section of the OHWRC's website, <https://oralhealthworkforce.org>.

Researchers worked with each organization to identify key informants and to schedule the interviews at times convenient to clinicians. The roles of the 26 interview participants within their organizations varied and included:

- CEO/Founder/Executive Director - 2
- Nonclinical director/manager/supervisory level staff - 6
- Clinical dental/Program director - 9
- Dentist - 2
- Dental hygienist - 4
- Dental assistant - 1
- Administrative/Support staff - 2

Data Analysis

All interviews were conducted using the Zoom platform. The majority were conducted with a single informant but some included 2 or more participants. Each of the 15 individual interviews lasted 30-45 minutes with the 5 group interviews lasting 30-60 minutes. A single moderator facilitated each interview; 2-4 other researchers passively participated to take notes for later transcription.

Following each interview, the notes were compiled to a single transcript describing the insights of the participants. All transcripts were then uploaded to Dedoose V.9.0²⁹ and consolidated for coding and analysis. Two descriptor fields were used to differentiate the transcripts:

- Descriptor Set 1 - Name of safety-net organization
- Descriptor Set 2 - Informant described by primary responsibility

Researchers applied a mixed-coding framework for analysis. The results were then sorted to common themes that emerged from the consolidated resources. Coding and analysis of interview responses resulted in the following narrative related to the issues of stress and burnout.

Guiding Theoretical Framework

Burnout is considered to be a situational, context-dependent phenomenon engendered by work-related stressors with consequences tied primarily to professional attitudes, behaviors and performance, although it has also been associated with personal mental health diagnoses such as depression.³⁰ The processes associated with burnout are complex. The existing literature posits that stressors occur within the context of a multilevel system; their influences can be compounded by time and across multiple levels, akin to other models of workplace care and safety.^{31,32} Researchers at the OHWRC adapted a multilevel system framework based on a modified Social-Ecological Framework to guide the coding and interpretation of interviewer content on worker burnout across the safety-net. In particular, 3 levels guided analyses of burnout—individual, organizational, and external environmental levels.

At each level, it is possible to examine antecedents, consequences, and manifestations of burnout, with each successive level capable of interacting with or affecting other levels. For example, manifestations of burnout may be observed at the individual level by means of physical or psychological symptoms; such experiences may also, in turn, engender upstream observable effects upon organizational level variables, such as service delivery. Conversely, organizational variables such as localized job demands and the availability of resources are likewise capable of interacting downstream with individual factors to alter personal experiences of burnout. Multilevel frameworks of this nature thus allow for the independent examination of each system level as well as emergent phenomena brought about by multidirectional interactions of system levels.

Researchers assessed the cited stressors using the analysis framework and analyzed responses from the 3 levels of the modified socio-ecological framework (individual, organizational, and environmental).

Findings

Common Themes

The COVID-19 pandemic created environmental, organizational, and individual stressors that had an impact on everyone but especially the health workforce. The stressors were significant and numerous, always ubiquitous but sometimes circumstantial. Clinical staff were concerned about the risks inherent in caring for patients including transmitting a highly contagious virus. One of the biggest problems was the uncertainty of COVID-19 pandemic duration, and as one key informant recounted, “first it was weeks, then a few months, a whole summer, and then years.” There were financial stressors including personal or spousal unemployment, closures of schools and childcare providers, health concerns about getting the virus, and deaths of family members from the virus.

The changes in protocols and processes at work also caused dismay. Lunchrooms were closed because they were gathering places for staff; staff were eating lunch alone in their cars. Safety protocols were rigid

and interrupted social interactions. However, many staff felt safe at work because of the infection control precautions; they did not have to worry excessively about transmission, especially if they were using PPE properly.

Organizational leadership from several organizations commented on the importance of not discounting employees' fears because there were very real stressors experienced differently by the individual circumstances of staff. Administrators tried to listen to the problems, help where possible, and pivot work plans as needed.

Dental clinicians are often perfectionists about their work, but the COVID-19 pandemic taught many to do less to solve a dental problem. The elimination of aerosol generating procedures caused clinicians to think carefully about appropriate treatment services, to be realistic about interventions and to be more cautious about expectations. There was a greater reliance on sealants and silver diamine fluoride than prior to the pandemic.

Several interview participants spoke of a drop in morale during the COVID-19 pandemic with more depression and burnout among staff. It was difficult to remain positive when demands were high and ever-changing. Staff who were working were consistently busy and often unable to take breaks; others were doing extra work to cover the duties of absent co-workers who were ill or out of work due to family issues. Some staff were more easily frustrated and dental teams were impacted. Some were unhappy about being assigned to non-dental jobs with which they were unfamiliar. Several organizations re-examined employee assistance programs to offer appropriate resources especially for mental health counseling.

Recruitment to the dental safety-net has always been a problem, but it is now a bigger challenge than during pre-COVID-19 pandemic times. The COVID-19 pandemic precipitated "the great resignation" with people thinking more seriously about their futures and some deciding to retire or change careers. Some workers left because they resisted the vaccine mandate; others made the choice to leave due to family obligations. Most of the turnover was in entry-level roles, such as reception and care coordination, and the reasons included childcare, school schedules, and single motherhood.

FQHCs are still not at pre-COVID-19 pandemic staffing levels because of staff departures and the increased clinical time allocated to safety-related practices and processes. Workforce shortages are limiting the number of patients who can be seen. It is currently difficult to hire dental hygienists, who are important preventive service providers. Safety-net dental providers have a harder time recruiting dental hygienists than private dental practices because the work is a bit more demanding, the hours are often longer, and, at times, the pay is less. Some organizations increased pay to find qualified workforce.

Dental assistants are also scarce. Dental assistants can be hired and trained on the job, but it is hard to find people with the right work ethic to learn the work and stay in the safety-net. Dental assistants are essential to workflow; they prepare patients and operatories which allows for smooth transitions and for treating more than 1 patient at a time.

Several informants commented that they had to rebuild trust in the workforce after furloughs. Many agreed that it will take time to restore a more pervasive feeling of normalcy.

Burnout Stressors

There was consensus among interviewees at each of the health centers participating in the interviews that the COVID-19 pandemic resulted in increased stress and burnout among their oral health staff as well as among other health care providers and administrative staff. Interview participants discussed external stressors at the environmental level and internal stressors at the organizational and individual levels.

Stressors at the Environmental Level

At the **environmental level**, key informants reported that many of the most immediate stressors were directly related to the COVID-19 pandemic. In the early months of 2020, fear of the unknown was a prominent stressor. There was consensus among interview participants that lack of knowledge about COVID-19 was very problematic. An informant summarized these concerns offering that “all of us didn’t know what we didn’t know”.

Several respondents shared their frustration with the “ever changing policies and requirements, including PPE and infection control protocols,” from a broad range of regulators and agencies who sometimes differed in their guidance. The lack of uniformity and uncertainty about infectious pathways added to the stress of the COVID-19 pandemic and increased the difficulty with compliance since infection control and public health guidance was evolving on a daily basis. Several respondents described their underlying and overriding concerns as “if the (mitigation) program will be successful” and “when it (the pandemic) first started, most of us had concerns if we would still have a job”.

Informants also discussed environmental stressors that individually impacted dental staff including closures of schools and day-care centers, loss of jobs in families, illness and death from COVID-19, and the isolation from normal social interactions. Things changed precipitously; staff were struggling with demands at home and changing processes and assignments at work.

Safety-net providers also discussed concerns about risks to their patients who were often front-line workers who were unable to isolate or were from racial and ethnic minorities that were deemed at higher risk for complications from the disease. Environmental stressors affected them such that as the COVID-19 pandemic progressed, levels of frustration with delays in care and strict infection control protocols increased; this had a downstream impact on all staff at the dental centers including public-facing staff and clinicians.

Several respondents also indicated that environmental stressors unrelated to the COVID-19 pandemic enhanced anxiety attributable to the COVID-19 pandemic. They alluded to the confluence of various social justice-related issues and stressors that occurred in early 2020 (such as the murder of George Floyd and the subsequent protests). Many respondents expressed the sense that “everyone felt uncertain and scared”.

Stressors at the Organizational Level

Dental service delivery was immediately interrupted with the declaration of the public health emergency. Consequently, there were unanticipated disruptions in organizational processes and routines. The swift closure of private practices and reductions in service levels in safety-net organizations left clinicians wondering not only about their professional futures but also about the long-term viability of their businesses.

Common themes observed at the **organizational level** of cited stressors were primarily related to the difficulties with obtaining sufficient PPE, finding ways to support its cost, changing clinical protocols related to aerosol generating procedures, reassigning clinicians to nontraditional roles, furloughing staff, and ultimately, to workforce shortages attributed to the COVID-19 pandemic while addressing stress and burnout in the workforce. In addition, the stress of being unable to treat patients in face-to face encounters required practices to find alternative means of helping patients with their dental needs.

One respondent described changes in workforce engagement, succinctly, “people really thought about what they wanted to do with the rest of their lives”. Many respondents described increasing numbers of resignations especially in clinical roles including dental hygienists and dental assistants as a consequence of the pandemic. Many reported open positions in various roles even before the COVID-19 pandemic; however, since the COVID-19 pandemic, that number greatly increased.

One informant remarked, “we work in the mouth, and it was scary for me”. Over 50% of the respondents described concerns related to aerosol generating procedures and the potential for viral transmission in their dental suites.

While some staff were reassigned to other roles during the early months of the pandemic, one dental director described that some “were frustrated by their job and the job they were assigned to do”. One dental director said that they allowed increased flexibility for some staff, “we did allow individuals to work from home if they could work from home; some of our staff, like translators, wanted to work but had kids to take care of, and they could work from home and we would call them and they would help translate and were available to us”.

One respondent stated that there was a “shortage of providers and even though we were constantly interviewing, not many people were looking for jobs”. Several respondents stated that there was high turnover in entry-level roles including care coordination. One informant stated that “not being able to get qualified employees has been difficult”. Nearly all respondents stated that the workforce shortages together with higher demand resulted in constant stress for their workforce, which were also exacerbated by patients being “more aggressive”. One respondent stated that the “clinical workforce were experiencing burnout more, due to workforce shortages of dental hygienists and licensed dental assistants.” Providing a higher volume of patient care (while being short staffed) was complicated because providers routinely identified more severe oral health problems from months and years of neglect in patients who had not sought routine

oral health care during the early years of the COVID-19 pandemic, which meant there was a higher need for more extensive dental care.

Several respondents stated they did not have burnout early on in the COVID-19 pandemic and how stress and burnout were cumulative. They described that by fall 2020 they had burnout. One respondent stated, “gowns were running out, thicker reusable gowns were uncomfortable and made you hot, extra oral suction was loud and was accompanied by complaints from patients of unsafe conditions”. That respondent went on to state, “I was resentful for not being able to get time off in the beginning despite being dedicated”. Another respondent stated their frustration was related to “lack of hazard pay”.

Several dental directors described that the COVID-19 pandemic resulted in many assessing their decision to continue to work in clinical jobs. One dental director remarked, “people decided to change jobs, when you’re under stress you want to change something”. Almost all staff described that the COVID-19 pandemic had caused many staff to leave their jobs with some leaving permanently. One dental director described that “many dental hygienists work part time anyway” and the COVID-19 pandemic informed their decisions to seek early retirement and leave the workforce permanently. Another key informant stated, “I think it’s been an issue across the board in dentistry in general, I don’t know how many dental hygienists or dental assistants who decided not to do this anymore”.

Stressors at the Individual Level

At the **individual level** several dental directors described that their staff had “a lot of anxiety and many weren’t ready to work without vaccines”. One key informant who was a dental assistant described, “beginning of the pandemic, I was a little stressed because we work in the mouth, it was scary for me”. Almost all key informants described that they had concerns about how aerosols would travel in and around the dental suite and worried which surfaces they could contract the virus from. Another respondent stated, “it was definitely a problem, the entire pandemic I was pregnant, and I worked the entire pandemic and that added a lot of burnout and stress and exhaustion.” They went on to describe that not having the information in the early months of the COVID-19 pandemic was a problem, and many expressed a sense of, “all of us didn’t know what we didn’t know”.

Several key informants described that they were working harder during the COVID-19 pandemic and for longer hours. Some were working 12-hour days followed by driving home while having the worry of potentially transmitting COVID-19 to their loved ones, which only added to burnout and stress they were experiencing.

Several dental directors described that they had several staff who had medical conditions and were recommended by their providers to not work with patients directly. The dental directors said they were able to offer them a different role at the organization. One key informant described a tragic example of the personal cost to one of their dental hygienists, “she got sick early on the pandemic and she was in her early 30s with underlying health conditions. She recovered and got COVID again several months later and

was hospitalized and was on a ventilator. While the board was able to employ and pay her to ensure she got her health benefits for a while, ultimately the dental hygienist and the organization had to part ways because she couldn't work. She was a long haul COVID patient, and she passed away shortly afterwards".

Outside of the stress and anxiety around the COVID-19 pandemic, all of the key informants (who were not in leadership roles at their organization) described that a significant cause of stress was their worry about being furloughed. One key informant described, "when it first started, we had the mindset that it was a couple of weeks, then it was a few months, and then a whole summer, things kept changing and getting longer and everyone worried if they would get furloughed, it was stressful financially because when it first started most of our concerns were about if we would have a job". Respondents stated and reiterated about the added stress and burnout because "it impacts everyone, it impacts your family."

The most common individual-level stressors described by key informants were related to childcare. Nearly all health center staff described that lack of day care and lack of in person schools were a significant issue, primarily for single parents. Responses indicated that women were disproportionately impacted and "many had no choice but to stay at home and take care of the kids". Nearly all respondents described that the childcare issue was "at the heart of the problem" and the lack of childcare was among the main reasons for dental assistants (and dental hygienists) choosing to leave the health center. Several respondents also described that children being the last group that was able to be vaccinated was also an issue. Several respondents who were in leadership roles indicated that even offering to change schedules was not very successful in incentivizing dental assistants (and other dental staff) to remain at the health center. One respondent stated that after schools reopened and children went back to schools, that "it didn't change much for us".

One respondent remarked that, "childcare related issues was at the heart of the problem" and went on to state, "if only we had robust systems that can support young parents, we need to have robust systems (to support young parents) for the next challenge".

Strategies to Address Burnout

It was clear during the key informant interviews that many people in leadership roles at organizations understood their oral health workforce was under stress and experiencing burnout. Several informants described that they routinely surveyed staff at safety-net organizations to discuss issues faced by their workforce and to solicit feedback from their workforce to understand their concerns and fears. One key informant described that in a survey of their staff, which included a module on burnout, almost 50% of the staff self-identified as having signs of burnout (the causes cited in that survey being increased workload, not being able to take breaks, and tensions among colleagues).

The safety-net organizations also implemented organizational strategies to encourage well-being and stress management in their staff with an emphasis on self-care. While all safety-net organizations were unable to offer all the strategies listed below, it is important to recognize all organizations did have some kind of

strategy to address stress and burnout. Operationally this included several strategies such as giving staff more time off and more leniency around taking time off. In addition to more time off, several organizations also offered extra pay and more breacktime for their staff. Another strategy employed was more flexibility around scheduling work for parents. One safety-net organization even offered nature hikes and hired a massage therapist for their workforce. One respondent stated that the strategies implemented by their organization, “provided a lot of support during the pandemic, both emotionally and financially”.

One respondent stated that, “the organization did a great job of taking care of our families (patients) and making sure were safe, it was scary for me, and I am grateful for the organization for everything they did for us and our families (patients).”

Another respondent stated that they had an organization-level program to provide staff de-escalation training and had a poster campaign to encourage patience from clients/visitors towards staff and to reinforce the organizations “zero tolerance” policy.

One respondent stated that they examined how their employee assistance program could be used to offer support and resources for mental health stressors and described that they were able to offer counselling and support via that program. They went on to state, “we did training sessions with one of our counsellors, to educate the workforce on what options were available to them”.

Another respondent in a leadership role said, “as an organization, we decided to continue their health coverage to take the financial pressure off them and their families”.

Another respondent stated they did gratitude exercises each day, to acknowledge one good thing and one challenge and described that, “on holidays, birthdays and milestones the staff got food and celebrated together”.

Study Limitations

The qualitative component of the study had a small sample comprising of staff at 11 safety-net organizations in a few states. Therefore, the study findings may not apply to all safety-net organizations. The coding of interview transcripts was conducted by 1 researcher, which limited the ability to test for inter-coder reliability.

Conclusions

The COVID-19 pandemic resulted in increased stress and burnout among their oral health staff as well as among other health care providers and administrative staff. The environmental and personal stressors that contributed to burnout cited by the key informants were complex due to their interconnectedness at each level of the modified socio-ecological framework. In addition to examples of stress and burnout, key informants discussed strategies employed by organizations to address and when possible, alleviate burnout in the workforce.



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