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Moral distress among clinicians working in U.S. safety net practices during the COVID-19 pandemic: A Mixed Methods Study

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Abstract

Objective To explore levels of moral distress experienced by clinicians working in U.S. safety net practices during the COVID-19 pandemic, and identify issues that caused moral distress.

Design Cross-sectional survey in late 2020, employing quantitative and qualitative analyses

Setting Safety net practices in 20 U.S. states

Participants 2,073 survey respondents (45.8% response rate) in primary care, dental and behavioral health disciplines who were participating in the National Health Service Corps and states' similar education loan repayment programs and serving in safety net practices.

Measures Ordinally scaled degree of moral distress experienced during the pandemic, and open-ended descriptions of issues that caused most moral distress.

Results Weighted to reflect all surveyed clinicians, 28.4% reported no moral distress related to work during the pandemic, 44.8% reported "mild" or "uncomfortable" levels, and 26.8% characterized their moral distress as "distressing," "intense" or "worst possible." The most frequently described types of morally distressing issues were patients not being able to receive the best or needed care, and patients and staff risking infection in the office. Abuse of clinic staff, suffering of patients and staff, and inequities for patients were also morally distressing, as were politics, inequities and injustices within the community. Clinicians who reported instances of inequities for patients and communities and the abuse of staff were more likely to report higher levels of moral distress.

Conclusions During the pandemic's first nine months moral distress was common among clinicians working in US safety net practices while participating in loan repayment programs. But for only one-quarter was this significantly distressing. As reported for hospital-based clinicians during the pandemic, this study's clinicians in safety net practices were often morally distressed by being unable to provide optimal care to patients. New to the literature is clinicians' moral distress from witnessing inequities and other injustices for patients and communities.

Strengths and limitations of the study

- This is the first study to explore moral distress among clinicians working in safety net practices serving vulnerable populations during the COVID-19 pandemic.
- Studying all participants of educational loan repayment programs provides survey data from clinicians of many disciplines working in many types of safety net practices in 40% of U.S. states.
- Analyses of descriptions of issues causing moral distress among clinicians in outpatient, safety net practices identifies realms of issues not previously identified through extant studies of hospital-based clinicians, specifically moral distress from observed inequities and injustices.
- We cannot directly know how moral distress changed for safety net clinicians with the pandemic because there are no pre-pandemic studies.

News photos and stories of physicians and nurses laboring in intensive care units overflowing with ill and frightened patients are among the most iconic images of the COVID-19 pandemic.[1, 2] These clinicians are shown to be physically and emotionally exhausted, and also said to be *morally distressed* by witnessing and participating in people's illness, care and death in sheer numbers and under circumstances that feel morally wrong.[3-6] The concept of moral distress among health care professionals is relatively new and still evolving.[7-9] In this study, we conceptualize moral distress as the psychological unease or distress that occurs when one witnesses, does things, or fails to do things that contradict deeply held moral and ethical beliefs and expectations.

Likely clinicians in many disciplines and work settings have felt morally distressed during the pandemic,[5, 10] and this has been demonstrated for broad cohorts of principally hospital-based clinicians in the U.S., U.K., and worldwide.[9, 11-13] We are aware of no studies that have assessed moral distress during the pandemic specifically among outpatient clinicians, but such distress is easy to imagine. Through closed offices, restricted services and altered care standards, outpatient clinicians may feel that they have violated their moral duties of beneficence and non-maleficence, that is, to help patients to the best of their ability and not cause them harm.[14, 15] Clinicians can fear infecting patients in the office, but simultaneously be distressed when patients delay or forego needed office visits and care, even for heart attacks and cancer treatment.[16-19] Further, many clinicians, both outpatient and inpatient, can feel they have violated their duty to themselves simply by continuing to see patients and thereby risking infecting themselves and, in turn, their families.[10-12]

Among outpatient clinicians in the U.S, those working in safety net practices—Federally Qualified Health Centers (FQHCs), clinics of the Indian Health Service, county health departments, community mental health facilities, and others—provide care to poor and often racial and ethnic minority patients and communities, which have been more affected by illness and death during the pandemic.[20-24] These public and nonprofit safety net practices also frequently do not have the financial resources to adapt care to continue safely providing services to their patients.[25-27] Moral distress during the pandemic in these special settings therefore may be greater than for outpatient clinicians generally.

Moral distress is not merely an issue of conscience. Studies find that clinicians' moral distress is associated with disengagement from patients, compassion fatigue and poorer quality of care,[28, 29] poorer clinician mental health and burnout,[11, 28, 30-32] and job dissatisfaction and turnover.[28, 31, 33]

This study assesses moral distress at nine months into the COVID-19 pandemic among clinicians working in a wide range of types of safety net practices in 20 U.S. states. With no available complete listing of safety net practices across states or complete rosters of their clinicians, we study moral distress among a large subgroup of safety net clinicians for whom complete roster data are available. These are clinicians participating in federal and state loan repayment and related programs that help clinicians with the costs of their education in exchange for a period of work within safety net practices. This study assesses these clinicians' reported levels of moral distress. Through qualitative analyses it identifies the types of issues that these clinicians found most morally distressing. It also compares the moral distress of primary care, dental and behavioral health clinicians, whose care has required different adaptations to the pandemic with varying challenges to clinicians and patients.[34] This study further assesses how the level of moral distress clinicians report varies with the types of issues they report caused them most distress.

METHODS

Subjects

To study the pandemic's various effects on clinicians working in safety net practices, we surveyed all primary care, dental and behavioral health clinicians and providers in 20 U.S. states who were participating in the education loan repayment (LRP) and scholarship programs of the National Health Service Corps (NHSC) and in states' similar programs with service commitments to work within safety net practices.[35-38] The 20 states (Alaska, Arizona, Arkansas, California, Delaware, Iowa, Kentucky, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, Oregon, Rhode Island, South Carolina, Virginia and Wyoming) constitute 40% of all U.S. states, and do not differ statistically from the 30 other U.S. states in both mean and median total population, mean per-capita income, percentage population living in urban versus rural areas, and number of known positive COVID-19 infections as of December 15, 2020.[39-41] These 20 states participate in the Provider Retention Information System Management (PRISM) Collaborative (one member state declined participation), a voluntary cooperative of states' clinician workforce program offices and offices of rural health that annually surveys clinicians serving in loan repayment and scholarship programs to assess outcomes.[42,43]

The U.S. Bureau of Health Workforce regularly provides the Collaborative with roster information on all clinicians participating in the federal NHSC, and the Collaborative's lead agency for each state provides information on all participants of their state's programs. The current study used this information to field a one-time, COVID-19 focused survey of this clinician cohort.

Invitations to participate in the survey of COVID-19 experiences were emailed to all clinicians who began serving an NHSC or state loan repayment or scholarship program contract in 2018 and 2019 and were serving as of July 1, 2020. Initial survey invitations were sent November 24, 2020, nine months into the pandemic in the U.S., and the survey closed February 7, 2021: 83% of all responses were received by December 31st. An imbedded link on the invitation took participants to the on-line questionnaire presented on Qualtrics 2020 platform (Qualtrics; Provo, UT). Clinicians were informed that participation was voluntary and anonymous.

Research ethics approval

A human subjects exemption was granted by the Non-Biomedical IRB of the Office of Human Research Ethics at the University of North Carolina at Chapel Hill (Reference ID 319209).

Survey instrument

The approximately 10-minute questionnaire primarily posed fixed-choice response questions to clinicians about how the pandemic had affected their patients, jobs and work. It also asked about their stressors during the pandemic, work-related well-being, and plans for remaining in their practices, along with demographic questions.

Moral distress measure

The notion of moral distress for clinicians was initially developed for and has continued to principally focus on hospital-based nurses.[44,45] In recent years, the study of moral distress among clinicians has expanded to other disciplines—although still principally in the hospital setting—and its definition and measurement tools have broadened.[7, 8, 15, 46,47] For this study, we sought a definition and measurement tool of moral distress pertinent to the work of primary care, dental and behavioral health

care practitioners working in the outpatient setting, where care is typically through small practices and patient-practitioner relationships that span years, for patients living at home with their families within communities and often constraining social situations.

This study conceives moral distress as stemming from things that clinicians do or fail to do, whether compelled or not, as well as things that they witness that they feel are morally wrong. This is consistent with the scope of items in the Moral Distress Scale-Revised (MDS-R), which is currently the most widely used and most often adapted tool to assess moral distress.[46,47]

Because of its brevity and ability to be modified for our broad study population, we adapted the single-item measurement tool, the visual analog Moral Distress Thermometer scale, developed for hospital nurses by Wocial and Weaver and since also used with physicians.[5, 48,49] We broadened the measure's original wording, which defined moral distress for subjects as stemming solely from knowing the ethically right thing to do but being restricted from doing it, to include distress from witnessing things that feel morally wrong. Specifically, moral distress was defined in the questionnaire as: "*Moral distress occurs when you witness or do things, whether required by circumstances or not, that contradict your deeply held moral and ethical beliefs and expectations."* Immediately following this definition, participants were asked, *"How much moral distress have you experienced related to work during the pandemic?"* We collapsed the Moral Distress Thermometer's original 11 numbered response options to just 6, while retaining the same 6 response anchors from "none" to "worst possible." We omitted the thermometer image displayed along the response scale because we felt not all disciplines would relate to it. The next, open-ended question in the questionnaire asked participants: *"What specific issues or events caused you most moral distress during the pandemic?"*

Public involvement

Health officials of the 20 states with clinicians participating in this study provided consent for their state's participation and assisted in recruiting clinicians' participation. Twenty-six clinicians working is safety net practices pilot tested the survey instrument. All clinician participants will receive a copy of this paper when published.

Analysis

Descriptive statistics characterize respondents' demographics, disciplines and work settings. The percentage of respondents who reported various levels of moral distress are reported, with comparisons made across the three discipline groups (primary care, dental health and behavioral health) and the various types of practices where they worked (e.g., mental health facilities and correctional facilities). Assessments for statistically significant group differences in moral distress levels are made with the Complex Samples feature of SPSS (IBM Corporation; Armonk, NY), a variant of the second-order Rao–Scott adjusted chi-square to account for clustering of the data because sometimes two or more clinicians worked in the same practice.[50] The above demographic and moral distress level percentages are reported weighted for clinician subgroups that differed significantly in response rates, specifically clinicians' discipline group (behavioral health vs. primary care and dental health), the particular service program clinicians were participating in (NHSC LRP vs. joint state-federal LRPs vs. NHSC Rural Community LRP and states' service programs vs. NHSC Scholarship and NHSC Substance Use Disorder programs), and whether clinicians were participating in the service program at the time of the survey or had completed service within the preceding few months. Weights for the 20 strata varied from 0.62 to 1.40, and the calculated design effect due to weights was 1.037.

We used a grounded theory approach to qualitative analysis of clinicians' descriptions of the issues or events that caused them most moral distress during the pandemic.[51] Three investigators initially read and discussed four sequential batches of 100 responses to understand the range and types of issues that clinicians identified and how they framed them. Respondents generally indicated the moral issue (e.g., people not getting needed care or being put at greater risk of infection), the group that was harmed (e.g., patients, clinic staff or the public) and the person or entity responsible for the harm (e.g., the respondent clinician, their practice, or society). Three investigators then developed and refined a coding scheme by iteratively coding and discussing five additional batches of 70 to 100 responses. The final coding scheme for morally distressing issues included 28 codes that specified both the nature of the moral issue and the group affected. A separate set of 8 codes was used to classify the identified responsible person or entity.

Coding was based principally on what respondents explicitly stated with minimal interpretation so as not to misconstrue clinicians' meaning in their often brief responses. Each clinician's comment was analyzed in its entirety and was assigned a moral issue code and responsible person or entity code. More than one moral issue code and responsible party code was assigned for comments that included more than

one type of moral issue and/or responsible party. Comments that noted multiple examples of the same moral issue and responsible party received a single moral issue code and single responsible party code.

We applied this coding scheme to open-ended responses in a one-third sample of completed questionnaires, i.e., responses in every third group of 100 sequentially received completed questionnaires. Two investigators independently coded all responses. Inter-rater reliability assessed for responses from questionnaires not used in developing the coding scheme was acceptable for both moral issue and harmed group codes (kappa = 0.83, 95% CI, 0.80 – 0.86) and responsible person or entity codes (kappa = .83, 95% CI 0.79—0.86).[52] A third investigator, an experienced qualitative researcher and clinician familiar with care in safety net practices and clinicians' issues there, identified coding differences, which were settled through a combination of discussion and consensus, majority rule, and relying on the third reviewer's insights.

To simplify presentation of findings, we combined codes that had few mentions or were conceptually similar, which generated a more manageable set of 11 moral issue codes and 7 codes for the identified responsible party. Each moral issue and its most commonly identified responsible parties are briefly explained and representative quotes provided aiming to convey both the most common and range of reported situations falling within each category of moral distress (fair dealing).[53] Among respondents whose most distressing situation fell into each of the issue types, we also compare the percentage who reported higher levels of moral distress ("distressing," "intense" or "worst possible" distress levels). Statistical weights are not applied to these percentage estimates, reported only to convey a sense of the more and less common issues, because they are derived from qualitative analysis for which precise extrapolation to a target sample is inappropriate.[54]

Qualitative analysis was carried out on Microsoft Excel (Microsoft Corporation; Redman, WA). Quantitative analyses were run with SPSS version 26. A *p*-value of 0.05 was set for statistical significance.

RESULTS

Of the 4,647 clinicians surveyed, 80 email addresses failed. Of the remaining 4,567 clinicians, 2,073 responded to the questionnaire including its item on degree of moral distress (45.6%). Most (54.9%) were 35-49 years old, with one-third (30.4%) younger than 35 years and 14.6% 50 years or older. Nearly three-quarters (72.9%) were women, and most (60.2%) had children at home. A strong majority were

White (81.0%), with fewer being Black or African American (6.8%), Asian (7.2%), and other or multiple races (5.0%). Hispanic ethnicity was reported by 9.8%.

Degree of moral distress

Among all respondents, the mean reported level of moral distress during the pandemic was 1.58, which is about midway between “mild” and “uncomfortable” on a six-point ordinal scale from “none” to “worst possible.” A total of 28.4% reported that they experienced no moral distress, 44.8% reported “mild” or “uncomfortable” levels of moral distress, and 26.8% characterized their moral distress as “distressing,” “intense” or “worst possible” (Table 1). Primary care, dental and behavioral health clinicians were similar in their proportions at these three grouped levels of moral distress (p=.28). Moral distress levels were also similar for clinicians working across the various types of safety net practices (p=.058).

Table 1. Reported degree of moral distress related to work experienced during the pandemic, by discipline and practice setting

		Degree of moral distress (Weighted %)		
	n	None (n=588)	Mild or Uncomfortable (n=931)	Distressing, Intense or Worst Possible (n=554)
All respondents	2,073	28.4%	44.8%	26.8%
Discipline				
Primary Care combined[1]	1,097	27.9%	45.1%	27.1%
Physician	354	27.6%	47.4%	25.0%
Physician Assistant	228	30.7%	45.1%	24.2%
Advanced Practice Nurse	515	26.7%	43.6%	29.6%
Dental Health combined	294	33.4%	43.1%	23.5%
Dentist	255	33.2%	44.2%	22.6%
Dental Hygienist	39	36.4%	36.4%	27.3%
Behavioral Health combined	682	26.9%	45.1%	28.0%
Licensed Professional Counselor	223	27.6%	43.3%	29.1%
Licensed Clinical Social Worker	241	25.0%	43.6%	31.4%
Psychologist	104	28.6%	46.9%	24.5%
Other Behavioral Health	114	28.4%	50.5%	21.1%
Practice Setting[2]				
FQHC-CHC	1,083	29.3%	44.2%	26.5%
Mental health or SUD facility	260	30.2%	45.5%	24.3%
Indian Health Service or tribal site	215	22.6%	45.7%	31.7%
Rural Health Clinic	145	30.7%	39.4%	29.9%
Correctional facility	41	12.8%	43.6%	43.6%
Other office-based site	296	30.4%	46.9%	22.7%
Hospital-based site	33	17.9%	60.7%	21.4%

Abbreviations: FQHC-CHC, Federally Qualified Health Center-Community Health Center; SUD, substance use disorder

[1] Second-order Rao–Scott adjusted chi-square test for differences in group proportions for the combined disciplines of the primary care, dental health and behavioral health groups, p=.28

[2] Second-order Rao–Scott adjusted chi-square test for differences in group proportions across 7 practice settings, p=.058

Reports of issues causing clinicians most moral distress

The 1,485 clinicians who reported experiencing moral distress during the pandemic were asked what specific issues or events caused them most moral distress: 1,168 (78.6%) provided open text responses. Responses varied in length from a single word (e.g., "Death") to several paragraphs. Of the 411 clinicians whose comments were randomly selected for qualitative analysis, 336 identified a single morally distressing issue and 75 identified two or more issues, generating a total of 508 mentions of issues for analysis.

Responsible persons and entities

In clinicians' descriptions of morally distressing issues that identified a person or party as responsible, it was most often clinicians themselves (31% of all issues mentioned) (Table 2). In most cases, these were situations where clinicians felt they had not provided needed care or had provided suboptimal care to patients because of the exigencies of the pandemic or the requirements of their practices. Clinicians' clinics or organizations were the second most commonly noted responsible party (15%), followed by government, politicians or society (14%), patients (3%), the public (3%), and clinic staff and/or administrators (3%). For one-third of the morally distressing issues reported, the responsible party was unclear or not identified. Many comments that did not identify a responsible party spoke of situations that were widely known to occur during the pandemic and have been frequently highlighted in the lay press, e.g., "*Patient dying alone*;" "*Watching outbreaks unfold in nursing homes*." The lack of a named responsible party in these situations was believed to indicate that clinicians were not assigning responsibility to anything other than the pandemic itself.

Table 2. Persons or entities that clinician's comments identified as responsible for the issues they found most morally distressing (n=508 comments)

Responsible Person or Entity	Representative Comments
The clinician-respondent [n=159; 31% of all responsible parties]	*"Not being able to provide care of the same quality as pre-pandemic;" "having to cancel on clients to take care of myself;" "Being unable to treat patients in need because my clinic closed"*
The clinician's clinic or organization [n=74; 15% of all responsible parties]	*"My clinic wasn't telling staff or clients when there were positive covid cases in the building and i was told not to as well." "the conflict between organization pushing for in person visit when often telemedicine would be more appropriate;"*
Government/politicians/society [n=69; 14% of all responsible parties]	*"Poor handling of COVID at federal and state levels;" "the failure of presidential leadership;" "racism, hatred, lack of moral responsibility shown by others"*
Patients [n=16; 3% of all responsible parties]	*"Patients coming into the consult room and taking off their mask;" "patients dishonesty during screening process"*
The public [n=14; 3% of all responsible parties]	*"Lack of social responsibility of others to wear a mask;" "Anti-maskers/Conspiracy Theorists/ Anti-vaxxers"*
Clinic staff and/or administrator [n=13; 3% of all responsible parties]	*"Providers/staff not following COVID protocols;" "a decline in the medical staff treatment of some of the pts;" "My MA declining COVID testing . . . while family at home had COVID."*
Unspecified/unclear/other [n=163; 32% of all responsible parties]	*"My clients anxiety;" "Needless deaths;" "Potential to exposure;" "Forced lock downs. COVID screening and testing"*

Morally distressing issues

Table 3 presents the 11 categories that clinicians' reported morally distressing issues fell into, with representative verbatim comments. The percentage of each individual or entity identified as responsible for each of the morally distressing issues is shown in Figure 1. The percentage distribution of comments falling into the 11 categories of morally distressing issues was comparable for primary care, dental health and behavioral clinicians (p = .123), with one exception: compared to primary care and behavioral health clinicians, dental health clinicians more often reported issues related to risking infecting patients and clinic staff (17.0% vs. 35.1%, respectively; p = .005).

The 11 categories of morally distressing issues and common subcategories within each follow below.

1. Patients not receiving the best and/or needed care (Principal responsible party: the clinician-respondent (Figure 1)). This was the most commonly reported group of morally distressing issues, comprising 29% of all issues mentioned (Table 2). The limitations of telehealth and virtual care for patients were commonly mentioned, noting that they were often inadequate for appropriate care and posed a barrier to care for some patients.

> *"we've primarily done phone/telehealth. There are times I have anxiety related to "what if I've missed" something because I'm unable to see the person in full."* (Nurse practitioner, Oregon)

> "*Providing care by telephone. Don't feel that I can connect with clients in the same meaningful way*." (Physician, Alaska)

> *"Having to move patients to telehealth even though they themselves may not have the resources to access telehealth services."* (Licensed Professional Counselor, Minnesota)

Other clinicians expressed that various circumstances of the pandemic limited what they could do for patients.

> *"Not being able to provide care of the same quality as pre-pandemic."* (Nurse Practitioner, California)

Some clinicians noted that their clinic's decisions and protocols meant to limit COVID exposure to patients and staff or bolster practice finances affected patients' quality or access to care.

> *"Not being able to provide the care I'd like. Financial decisions negatively affecting patient care."* (Nurse Practitioner, Arizona)

Table 3. Categories of morally distressing issues with representative comments (n=508 comments)

Morally Distressing Issue Category	Representative Comments
Within the clinic	
Patients not receiving the best and/or needed care [n=145; 29% of all issues]	*"Performing telehealth visits that really require in person evaluation;" "Not having the resources to always help my patients;" "telling people they couldn't have dental care because it wasn't emergent;" "Not able to provide the quality of care I would like to"*
Risking infecting patients and/or clinic staff [n=97; 19% of all issues]	*"Worrying about infecting others with covid if i am asymptomatic;" "Had to reuse N95 mask for two to four weeks." "Assuring my family health with client's not following protocol (including masks);" "My clinic wasn't telling staff or clients when there were positive covid cases in the building and i was told not to as well."*
Abuse of staff or ignoring their needs [n=37; 7% of all issues]	*"Overworking staff;" "Lack of support/appreciation from administration;" "Lack of PTO being allowed;" "Feeling like my safety and the safety of my team is not a priority and we are not valued except to keep money coming in . . ."*
The suffering of patients [n=36; 7% of all issues]	*"Patients passing away from Covid, huge number of them infected;" "Increased use of drugs/alcohol as a coping mechanism by patients;" "Listening to patients who have been affected by the pandemic"*
The suffering of clinic staff [n=28; 6% of all issues]	*"Uncertainty of employment;" "Being unable to validate some of my team when they are struggling;" "Work stress;" "Colleagues getting sick or having family members die."*
Inequities for patients [n=8; 2% of all issues]	*"Seeing how my patient population has been disproportionately affected by illness and death because of socioeconomic issues;" "Seeing patients unable to get their healthcare needs met due to financial circumstances, inability to obtain health insurance, loss of income, etc.."*
Within the community	
Politics in the community [n=30; 6% of all issues]	*"Political approach to the pandemic;" "Politicians behavior, behavior of their supports;" "politics and collision with medicine/science"*
The suffering of people in the community [n=27; 5% of all issues]	*"Hearing or seeing others struggle;" "increase in poverty and suicides;" "Forced lock downs;" "knowing that elderly people in nursing homes were contracting and dying from the virus due to employees or family members infecting them. Very sad and irresponsible."*
Inequities and injustice within the community [n=25; 5% of all issues]	*"Exacerbation of health disparities;" "racial injustice, lack of access to healthcare;" "The disproportionate effect of COVID-19 on minority and impoverished communities."*
Risking infecting people in the community [n=22; 4% of all issues]	*"Lack of community commitment for COVID safeguards;" "Lack of social responsibility of others to wear a mask;" "Lack of compliance with CDC recommendations in my community . . ."*
Unclear issues	
Unclear/uncertain/other issue [n=53; 10% of all issues]	*"My patients;" "Helping to run the COVID clinic;" "decisions made by management;" "Being asked to screen patients for covid symptoms despite no medical training;" "COVID 19 vaccines"*

2. Risking infection of patients and/or clinic staff (Principal responsible party: the clinician-respondent and their clinic/organization). Comments related to circumstances that placed patients and clinic staff at risk of COVID infection were the second most common type mentioned (19% of total), and was the most frequently reported morally distressing issue for dental clinicians (35% of their comments). Shortages of personal protective equipment (PPE) were frequently mentioned, as was the importance of balancing patients' needs for in-person care with the infection risks this carried for them and clinic staff.

> *"Worrying about keeping my employees safe, versus the importance of client care."* (Licensed Clinical Social Worker, Oregon)

> *"Got infected with COVID and my wife got infected because I was exposed at work."* (Physician, North Dakota)

3. Abuse of staff and/or ignoring their needs (Principal responsible party: the clinic/organization). Some clinicians felt that their clinics made operational decisions without adequate regard for the effects on clinicians and other staff. Some felt their health was inadequately protected by their organizations and that their needs as people and employees were unheeded.

> *"All our manager and director seem to care about us making money and how many patients we see. I was having to balance being exposed to so many patients then going home to my family and potentially exposing them."* (Dentist, Arizona)

> *"Organization not properly testing or protecting employees. Not providing hazard pay [or] providing FMLA"* (Physician Assistant, South Carolina)

4. The suffering of patients (Principal responsible party: unspecified/unclear/other). Some clinicians noted the tragedy of the pandemic's toll on their patients' physical health, mental health, work and families, and how difficult it was for them, the clinicians, to witness this.

> *"Seeing how it has impacted families in our clinic and feeling powerless to make meaningful change."* (Nurse Practitioner, North Carolina)

> *"More clients in crisis and dealing with high anxiety. There has been less access to resources and supports for them in the community, which leaves me feeling helpless as a clinician."* (Licensed Clinical Social Worker, Oregon)

5. The suffering of clinic staff (Principal responsible party: unspecified/unclear/other). Clinicians recounted illnesses among coworkers (e.g., *"My nurse dying from complications of Covid;" "Colleagues getting sick or having family members dies"*), and fears of illness for themselves. Others spoke of employment challenges (e.g., *"job security;" "partial lay off, decreased hours, having to find a new job for more income"*). Still others spoke of feeling overwhelmed (e.g., *"Continual stress buildup, fear of an unknown outcome;" "Juggling too much"*).

6. Inequities for patients (Principal responsible party: unspecified/unclear/other and the government/politicians/society). A few clinicians remarked that their patients suffered disproportionately during the pandemic because they were a marginalized group, could not afford care, or there were no services available for them.

> *"Diagnosing patients experiencing homelessness with COVID and not being able to provide them with a safe place to isolate/recover."* (Physician, California)

Another four types of morally distressing issues—encompassing 20% of all comments—occurred outside of clinicians' practices within their communities, states or nationally. These issues were not specifically noted to affect clinicians' patients or their care, but seemingly distressed clinicians given their knowledge of and concern about health, health care, public health, science and social justice. The government, politicians and society were frequently identified as causing these issues, but often the cause was unspecified or unclear.

7. Politics in the community (Principal responsible party: the government/politicians/society). Politics and politicalized issues—the elections, the politization of the pandemic, conflicts between people with different political views—were mentioned as morally distressing because they created conflict and upset society, and sometimes for how it affected clinicians' work and families.

> *"Anti-science movement, lack of leadership, CDC tarnished, politics, politization of health measures."* (Physician Assistant, North Carolina)

> *"The politicization of science and mask wearing has been very upsetting as it has put my life and my family's life at risk. . . . when these people get a severe toothache, they expect to be seen by a dentist, who's very life is put at risk by their anti-mask behaviors with I am put in a position to provide oral healthcare."* (Dentist, Nebraska)

8. The suffering of people in the community (Principal responsible party: unspecified/unclear/other). Mentions of the suffering of people in the community generally mirrored the suffering that other clinicians noted for their patients, including the pandemic's impact on people's physical health, mental health, and financial situations. A few comments were about community suffering due to public health measures and other government responses to the pandemic.

> *"The way we are handling "the numbers" as a nation, closing schools, putting child's development and wellbeing in danger . . . "* (Nurse Practitioner, Kentucky)

9. Inequities and injustice within the community (Principal responsible party: the government/politicians/society). The issues mentioned centered around racism and social injustice (*"BLM;" "George Floyd;" "racial injustice;" "racism"*) and disparities in health and health care (*"Witnessing health inequalities and disparities;" "inequality in the healthcare system"*)

10. Risking infecting people in the community (Principal responsible party: various). Comments in this category uniformly spoke of people not wearing masks or otherwise failing to follow the CDC's protocols to mitigate the pandemic's spread. Some comments were about people showing no concern or sense of responsibility for one another.

> *"witnessing people not wear masks or following CDC guidelines"* (Dentist, Montana)

> *"Lack of concern of people for others' wellbeing (selfishness)"* (Physician, Arizona)

11. Unclear/uncertain/other issue (Principal responsible party: various). Some comments were too brief and without sufficient details or context to know what specifically about the issue mentioned was morally distressing to the clinician. For example, the comment *"telehealth or phone"* might be intended to indicate the inadequacies of telehealth but alternatively that the practice could not offer telehealth.

Relationship between the moral distress issue cited and the amount of moral distress reported

Clinicians whose open-ended comments fell across the various 11 categories of moral distressing issues varied in their likelihood of reporting a higher level—distressing, intense or worst possible—of distress, ranging from 29.7% to 62.5% (p = .001) (Figure 2). Clinicians most likely to rate their moral distress in the higher level range reported distressing issues in the categories of inequities for patients, abusing and/or ignoring the needs of clinic staff, and inequities within the community. Clinicians who least often rated

their moral distress in the higher range reported issues related to patients not receiving the best and/or needed care, an unclear/uncertain/other issue, and the suffering of clinic staff.

DISCUSSION

In this study of two thousand clinicians working in generally outpatient safety net practices in 20 U.S. states during the first 9 months of the COVID-19 pandemic, 71.6% reported experiencing moral distress related to their work. Most who experienced moral distress characterized it as "mild" or "uncomfortable," but one-quarter (26.8%) of all clinicians described their moral distress as "distressing," "intense" or "worst possible." Moral distress levels were similar for primary care, dental and behavioral health clinicians, and similar for clinicians working in the various types of safety net practices. Moral distress levels during the pandemic for other, principally hospital-based clinician groups has similarly been characterized in prior studies as generally mild.[4, 5]

The most commonly mentioned issues that this study's outpatient, safety net practice clinicians found most morally distressing related to patients not receiving the best or needed care and the infection risks faced by patients and staff in the clinic. These are among the types of issues that clinicians working in other settings have found morally distressing during the pandemic.[4, 9, 11] But whereas suboptimal care for hospital-based clinicians was often related to having little to offer COVID-infected patients early in the pandemic and shortages of ICU beds and respirators, for these outpatient clinicians it was frequently due to restrictions on the types of care that could be safely provided in the office and the limitations of telehealth.

Some of the other types of issues that most morally distressed this study's clinicians during the pandemic were other things that occurred within their offices, including the suffering of patients and clinic staff, the abuse of staff, and inequities for patients. Clinicians also found things within their communities or across society morally distressing, including the politicization of the pandemic, people failing to wear masks and otherwise take personal responsibility to protect others, people suffering in their health, economically and socially, and people facing inequities and injustices.

Within the common bioethical framework of principalism, not providing best or all needed care and infecting others violate clinicians' moral obligations of beneficence and non-maleficence, that is to help patients to the best of a clinicians' ability and to cause them no harm.[15, 55] These are also the two

moral principles central in the original framing of moral distress among intensive care unit nurses, who can feel compelled to provide care to patients that they believe is futile or harmful.[43, 56]

The broader range of issues found morally distressing to this study's principally outpatient clinicians often violate a third bioethical principle: justice. Injustices were observed when certain patient groups and communities faced barriers to care, health disparities, and social injustices during the pandemic. Importantly, the mean level of moral distress was higher among clinicians who provided examples of inequities and other injustices, whereas lower levels were more often reported by clinicians who cited examples of patients not receiving the best and all needed care. The latter has commonly been assumed to be the main source of moral distress for clinicians during the pandemic, but for these clinicians it was less often the cause of significant moral distress.[10, 57, 58] It is not surprising that inequalities and other injustices cause moral distress for clinicians working in safety net practices, who in their careers were personally motivated to work with patients facing economic, social and geographic barriers to care.[20-24]

The fourth common bioethical principle, autonomy, was reflected in the comments of just a few clinicians who reported moral distress from the pandemic's public health mandates that constrained individual freedoms.

Previous studies and fixed-response option survey instruments of moral distress among clinicians have focused on issues occurring within health care settings, typically the hospital.[46, 47, 59] This study's open-ended query of causes of moral distress during the pandemic elicited many reports of events occurring outside health care settings, such as people not wearing masks in public, and issues sometimes not even directly related to health, such as the pandemic's financial impact on families. The definition of moral distress provided to this study's clinicians specified distress from issues "related to work during the pandemic." It is likely that outpatient clinicians view the community's failure to heed public health mandates is relevant to their work, as it affects local infection rates and, in turn, the number of infected patients they will see in the office, infection risks thereby placed on clinicians and staff, and their offices' ability to provide a full range of care to patients with other needs. And many clinicians found the pandemic's effects on non-health care related aspects of people's lives more morally distressing, and thus more salient to report, than its disruptions to care patients received in the office. It may also be that some clinicians simply had not read or heeded the definition of moral distress provided.

In the morally distressing actions that clinicians themselves had carried out or failed to carry out, their wording generally indicated they were compelled to do so, through statements like, “Not being able to provide care . . .” and “Being unable to treat patients . . .”, often forced by circumstances unavoidable due to the pandemic. Some clinicians perceived the pandemic created conflicts between their individual-focused clinical ethics—making decisions that are best for patients as individuals and respecting their autonomy—and society’s public-focused ethics, that is, prioritizing the population’s health and its other needs.[6, 15] But some clinicians held their clinic or its parent organization responsible for choices that caused their moral distress, most often policies perceived to abuse or ignore the needs of staff or that risked infecting clinic staff and patients. And some clinicians recognized a clash between their clinics’ corporate values and clinicians’ own better understanding and prioritization of people’s health, safety and best care: “This company’s ongoing quest to put profits over people.”

In the absence of studies of moral distress among outpatient and safety net practice clinicians prior to the current pandemic, we cannot be certain that the distress measured here at nine months into the pandemic is greater than if measured in 2019 or earlier. But most issues these clinicians found most morally distressing during the pandemic related directly or indirectly to the pandemic, thus their moral distress has likely increased with the pandemic. Their moral distress may have increased further since early 2021 as vaccines became widely available but then shunned by many people, prolonging the pandemic and causing many needless deaths.[60]

This study has several limitations. Its 45.8% response rate is strong for a survey of clinicians but can still allow response bias. This was addressed through statistical weighting in analyses of demographics and quantified levels of moral distress. If response bias remained, it would have affected the levels of moral distress measured and group comparisons, but not likely the range of issues identified as morally distressing to clinicians in safety net practices. The reported frequencies of the various types of morally distressing issues and responsible parties, derived from mentions in qualitative analyses, should be understood only to show the issues most and least commonly mentioned and not taken as meaningful frequency point estimates of the target population. In terms of generalizability, this study assessed moral distress in a subset of safety net clinicians who participated in service-requiring education loan repayment and scholarship programs. Although this cohort is broad in its disciplines and in the types of safety net practices where clinicians work, their experiences may not fully reflect that of other clinicians working in US safety net practices, who are likely to be older on average and more often in leadership positions. Lastly, some descriptions of morally distressed issues were too brief or otherwise unclear and could not be meaningfully analyzed.

Conclusions and Implications

Moral distress for clinicians during the COVID-19 pandemic has occurred alongside and contributed to their stresses from other sources and their emotional exhaustion and burnout.[4, 5, 15, 61-64] The consequences of moral distress for these clinicians at the levels found and for the issues reported remains to be demonstrated. Clinicians morally distressed by perceived unjust or otherwise harmful policies their safety net practices made may be more likely to join the "Great Resignation" and look for work elsewhere.[28, 29, 65, 66] On the other hand, clinicians' connections with their jobs may not be affected for those morally distressed by things perceived to be unavoidable during the pandemic or otherwise not due to their practices, especially if working during the pandemic has strengthened their sense of meaning in work and thus the value of their jobs.[34, 64, 67]

Various approaches have been suggested to address moral distress among clinicians. Approaches relevant to outpatient practices are for managers to understand what moral distress means for clinicians and its importance to them, create supportive work environments, create ways for clinicians and staff to learn and talk about moral distress and safely raise moral issues, identify and address any ongoing sources of moral distress, and provide clinicians with needed psychological support and time away from work.[9, 10, 64, 68] Managers should openly involve clinicians in operational decisions made during challenging times—indeed, all times—so that decisions can be informed by clinicians' perspectives and clinicians can better understand the choices available to their practices and reasoning behind the decisions made that affect them, their colleagues and their patients.

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Data availability statement Data are available on reasonable request. Access to deidentified, open text survey responses will be available 2 years after article publication to researchers who provide a methodologically sound proposal to achieve specific articulated aims. Proposals should be directed to the project's lead investigator (don_pathman@unc.edu). A data access agreement will be required that spells out the requester's data protection procedures, requirements to protect subject confidentiality, and that limits the use of data to the agreed upon purpose.

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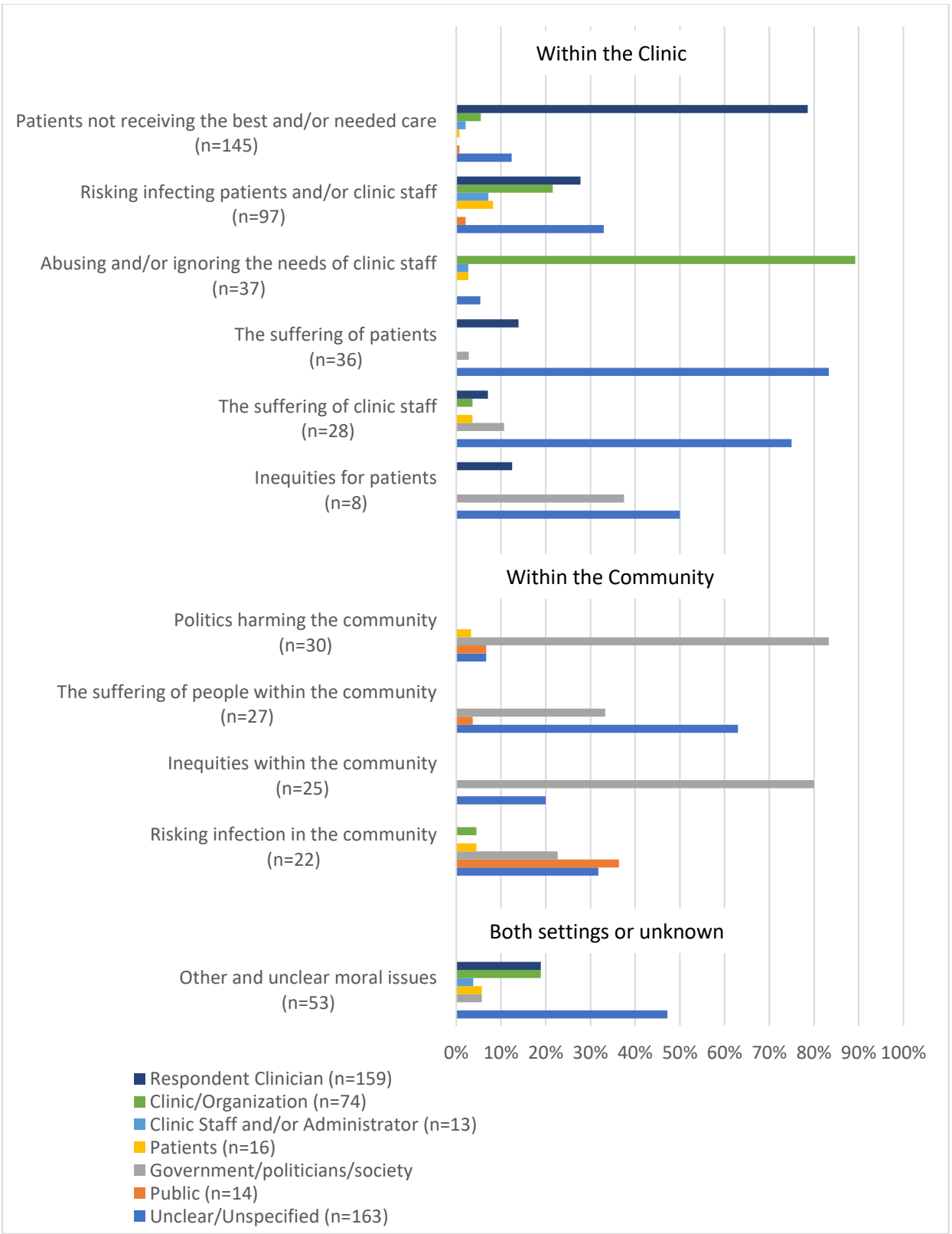
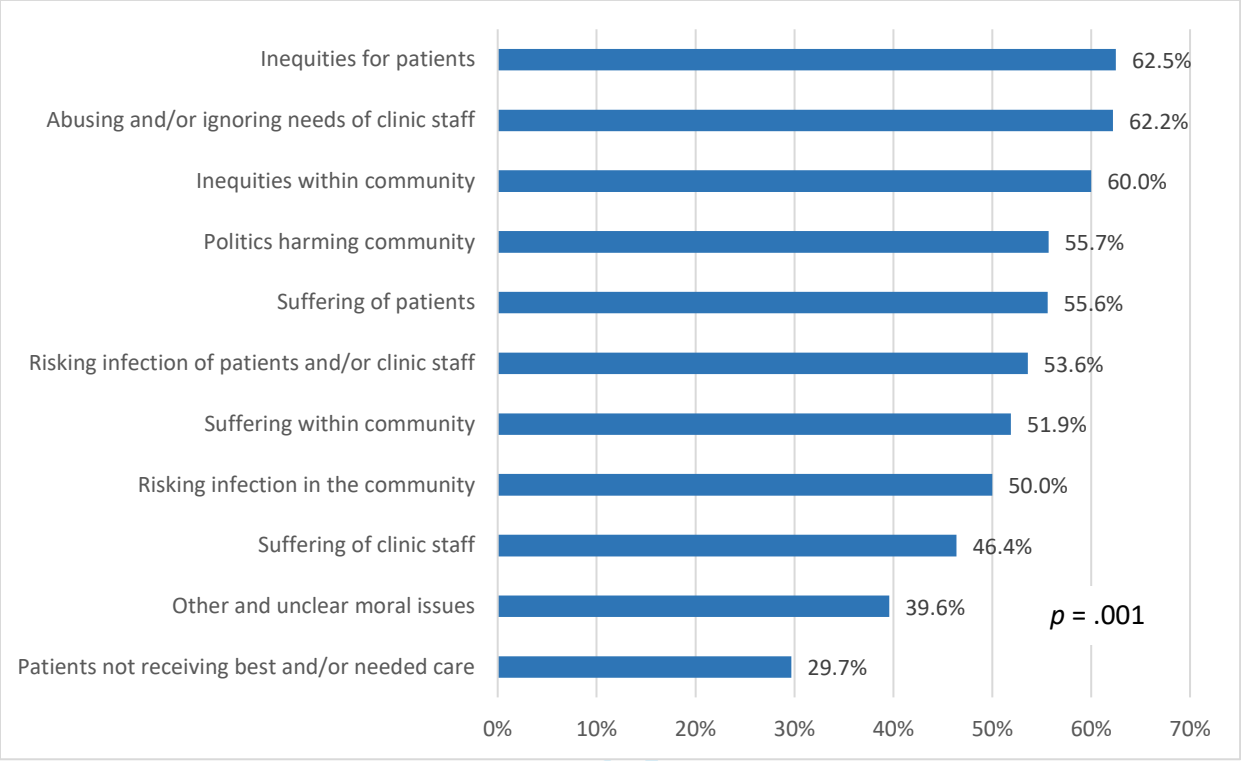
Figure legends

Figure 1. Responsible person or entity (%) identified for each morally distressing issue, n=508 issue mentions

Figure 2. Percentage of respondents who reported a distressing, intense or worst possible level of moral distress (vs. mild or uncomfortable level) among clinicians who reported each type of most morally distressing issue, n=508 issue mentions





Moral distress among clinicians working in U.S. safety net practices during the COVID-19 pandemic: A Mixed Methods Study

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation	Page, location
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1, title
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2, abstract
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	5, top paragraph
Methods			
Study design	4	Present key elements of study design early in the paper	5, first line of Methods
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5-6, first three paragraphs of Methods
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	5-6, first three paragraphs of Methods
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	5, top paragraph; 6-7, "Moral distress measure"
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	6-7, "Moral distress measure"
Bias	9	Describe any efforts to address potential sources of bias	7-8, first paragraph of Analysis
Study size	10	Explain how the study size was arrived at	5, first line of Subjects. Survey included all subjects in 40% of US states; no formal power analysis performed
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	7, first paragraph of Analysis; 9, third paragraph of Analysis
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	7, first paragraph of Analysis; 9, third paragraph

			of Analysis
		(*b*) Describe any methods used to examine subgroups and interactions	7, first line of Analysis
		(*c*) Explain how missing data were addressed	9, first line of Results. The few subjects with missing moral distress level values were counted as nonrespondents in response rate calculations
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	7, first paragraph of Analysis. We used Rao–Scott adjusted chi-square
		(*e*) Describe any sensitivity analyses	NA
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	9, first paragraph of Results; 10, "Reports of issues causing clinicians moral distress"
		(b) Give reasons for non-participation at each stage	NA—only "non-participation" is non-response, for which individuals' reasons are unknown
		(c) Consider use of a flow diagram	NA—simple cross-sectional survey
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	9, first paragraph of Results; Table 1
		(b) Indicate number of participants with missing data for each variable of interest	9, first line of Results. The few missing moral distress level values were treated as nonrespondents in response rate calculations; 10, first line of "Reports of issues causing clinicians most moral

			distress"
Outcome data	15*	Report numbers of outcome events or summary measures	9, "Degree of moral distress"
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	9, "Degree of moral distress"; No adjustments for confounding.
		(*b*) Report category boundaries when continuous variables were categorized	9, second to last paragraph of Methods; 9, "Degree of moral distress"
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	10, top paragraph; 11, top paragraph; 14, last paragraph; Figure 1; Figure 2
Discussion			
Key results	18	Summarise key results with reference to study objectives	15, first three paragraphs of Discussion
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	17, bottom paragraph
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	15-17, first nine paragraphs of Discussion
Generalisability	21	Discuss the generalisability (external validity) of the study results	17, bottom paragraph
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Reported in Funding

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Moral distress among clinicians working in U.S. safety net practices during the COVID-19 pandemic: A Mixed Methods Study

Standards for Reporting Qualitative Research checklist

No.	Topic	Page, location
	Title and Abstract	
S1	Title	1, Title
S2	Abstract	2, Abstract
	Introduction	
S3	Problem formulation	4, Introduction
S4	Purpose or research question	5, top paragraph
	Methods	
S5	Qualitative approach and research paradigm	6-7, analysis of responses to an open-ended response question within an online survey 8, *We used a grounded theory approach to qualitative analysis*
S6	Researcher characteristics and reflexivity	8 (bottom) through 9 (top) Reflexivity not explicitly reported
S7	Context	5, first paragraph of "Methods" Table 1, "Practice Setting"
S8	Sampling strategy	5, first paragraph of "Subjects," no sampling done for clinicians to be surveyed 8, last paragraph, *We applied this coding scheme to open-ended responses in a one-third sample of completed questionnaires, i.e., responses in every third group of 100 sequentially completed questionnaires*.
S9	Ethical issues pertaining to human subjects	6, "Research ethics approval"
S10	Data collection methods	6, second paragraph
S11	Data collection instruments and technologies	6, second paragraph and "Survey instrument"
S12	Units of study	8, second to last paragraph; 10, "Reports of issues causing clinicians most moral distress"
S13	Data processing	NA. This study gathered electronic survey data (i.e., no need for recordings, transcripts, translation)
S14	Data analysis	8, second through fifth paragraphs of Analysis
S15	Techniques to enhance trustworthiness	6, second paragraph, subjects informed that *participation was voluntary and anonymous* 7, definition of moral distress was presented to subjects 8-9 Independent and iterative approach to developing coding scheme.

		Independent coding by two researchers with differences settled by consensus, a third reviewer and/or majority rule Kappa's reported for inter-rater reliability, measured at 0.80 and 0.83 Fair dealing—quotes provided to reader to *convey both the most common and range of reported situations falling within each category of moral distress* (p 9) 15-17, linking findings to prior studies
Results/Findings		
S16	Synthesis and interpretation	10-14
S17	Links to empirical data	10-14 and Tables 2 and 3 provide many verbatim quotes representing common responses and the breadth or responses coded within each moral distress issue and each responsible party code
Discussion		
S18	Integration with prior work, implications, transferability and contributions to the field	15-17, first nine paragraphs of Discussion 17-18, "Conclusions and Implications" Transferability (equivalent to external validity in quantitative research) addressed within limitations, last paragraph before "Conclusions and Implications"
S19	Limitations	17, last paragraph before "Conclusions and Implications"
Other		
S20	Conflicts of interest	Reported in "Competing Interests"
S21	Funding	Reported in "Funding"

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Moral distress among clinicians working in U.S. safety net practices during the COVID-19 pandemic: A Mixed Methods Study

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Abstract

Objective To explore the causes and levels of moral distress experienced by clinicians caring for the low-income patients of safety net practices in the United States (U.S.) during the Coronavirus disease 2019 (COVID-19) pandemic.

Design Cross-sectional survey in late 2020, employing quantitative and qualitative analyses

Setting Safety net practices in 20 U.S. states

Participants 2,073 survey respondents (45.8% response rate) in primary care, dental and behavioral health disciplines working in safety net practices and participating in state and national education loan repayment programs.

Measures Ordinally scaled degree of moral distress experienced during the pandemic, and open-ended response descriptions of issues that caused most moral distress.

Results Weighted to reflect all surveyed clinicians, 28.4% reported no moral distress related to work during the pandemic, 44.8% reported "mild" or "uncomfortable" levels, and 26.8% characterized their moral distress as "distressing," "intense" or "worst possible." The most frequently described types of morally distressing issues encountered were patients not being able to receive the best or needed care, and patients and staff risking infection in the office. Abuse of clinic staff, suffering of patients, suffering of staff, and inequities for patients were also morally distressing, as were politics, inequities and injustices within the community. Clinicians who reported instances of inequities for patients and communities and the abuse of staff were more likely to report higher levels of moral distress.

Conclusions During the pandemic's first nine months moral distress was common among these clinicians working in U.S. safety net practices. But for only one-quarter was this significantly distressing. As reported for hospital-based clinicians during the pandemic, this study's clinicians in safety net practices were often morally distressed by being unable to provide optimal care to patients. New to the literature is clinicians' moral distress from witnessing inequities and other injustices for their patients and communities.

Strengths and limitations of the study

- This study's clinician study cohort is large and broad in terms of its disciplines, types of safety net practice work settings, and states within the United States, and its subject participation rate is strong.

- This study presents office-based clinicians with a broad definition of moral distress and non-constrained measurement tool, the Moral Distress Thermometer, which do not limit findings to what has been learned previously in studies of clinicians working in hospital settings.

- Clinicians' understanding of the single-question Moral Distress Thermometer and some other aspects of its validity were not assessed.

- Relying on open response survey item data to learn about causes of moral distress did not allow us to clarify clinicians' responses or more fully understand what the issues they reported mean to them.

- We cannot directly know how moral distress changed for U.S. outpatient safety net clinicians with the pandemic because there are no studies prior to the pandemic.

INTRODUCTION

News photos and stories of physicians and nurses laboring in intensive care units overflowing with ill and frightened patients have been among the most iconic images of the Coronavirus disease 2019 (COVID-19) pandemic.[1, 2] These clinicians have been shown to be physically and emotionally exhausted, and also said to be *morally distressed* by witnessing and participating in people's illness, care and death in sheer numbers and under circumstances that feel morally wrong.[3-6] The concept of moral distress among health care professionals is several decades old but still evolving.[7-11] In this study, we conceptualize moral distress as the psychological unease or distress that occurs when one witnesses, does things, or fails to do things that contradict deeply held moral and ethical beliefs and expectations.

Likely clinicians in many disciplines and work settings have felt morally distressed during the pandemic.[5, 12] This has been demonstrated for broad cohorts of principally hospital-based clinicians in the United States (U.S.), United Kingdom, and worldwide.[10, 13-15] We are aware of no studies that have assessed moral distress during the pandemic specifically among outpatient clinicians, but such distress is easy to imagine. Through closed offices early in the pandemic and then ongoing restricted services and altered care standards to promote safety, outpatient clinicians may feel that they have violated their moral duties of beneficence and non-maleficence, that is, to help patients to the best of their ability and not cause them harm.[16, 17] Clinicians can fear infecting patients in the office, but simultaneously be distressed when patients delay or forego needed office visits and care, even for heart attacks and cancer treatment.[18-21] Further before the availability of vaccines, proven treatments and adequate personal protective equipment, many clinicians in both outpatient and inpatient settings could feel they have violated their duty to themselves simply by continuing to see patients and thereby risking infecting themselves and, in turn, their families.[12-14] Moral distress during the pandemic can have important consequences for clinicians, as moral distress is associated with disengagement from patients, compassion fatigue and poorer quality of care,[22, 23] poorer clinician mental health and burnout,[13, 22, 24-26] and job dissatisfaction and turnover.[22, 25, 27]

Among outpatient clinicians in the U.S, those in safety net practices, which provide care to poor and often racial-ethnic minority patients who face barriers to receiving care in the U.S. mainstream healthcare system, have worked with patients most affected by illness and death during the pandemic.[28-33] This patchwork of publicly funded or subsidized practices—Federally Qualified Health Centers (FQHCs), clinics of the Indian Health Service, county health departments, community mental health facilities, and others—frequently have not had the financial resources to adapt care to continue

safely providing services to their patients.[34-36] Moral distress during the pandemic for clinicians in these special settings therefore may have been greater than for outpatient clinicians generally.

This study assesses moral distress at nine months into the COVID-19 pandemic among clinicians working in a wide range of types of safety net practices in 20 U.S. states. With no available listing of safety net practices of the many types across states or rosters of their clinicians, we study moral distress within a large subgroup of safety net clinicians for whom complete roster data are uniquely available. Specifically, we study clinicians participating in federal and state loan repayment and related programs that help clinicians pay down debt incurred from the costs of their training in exchange for a period of work within safety net practices.[37-39] This study assesses these clinicians' self-reported levels of moral distress. It categorizes and describes the issues they report caused them most distress during the pandemic. It also compares the moral distress levels and issues of primary care, dental and behavioral health clinicians, whose care required different adaptations to the pandemic with varying challenges to clinicians and patients.[40] This study further assesses how the level of moral distress clinicians report varies with the types of issues they report caused them most distress.

METHODS

Subjects

To study the pandemic's various effects on clinicians working in safety net practices, we surveyed all primary care, dental and behavioral health clinicians and providers in 20 U.S. states who were participating in the education loan repayment (LRP) and scholarship programs of the National Health Service Corps (NHSC) and in states' similar programs that have service commitments to work within safety net practices.[38, 39, 41, 42] The 20 states (Alaska, Arizona, Arkansas, California, Delaware, Iowa, Kentucky, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, Oregon, Rhode Island, South Carolina, Virginia and Wyoming) constitute 40% of all U.S. states, and do not differ statistically from the 30 other U.S. states in both mean and median total population, mean per-capita income, percentage population living in urban versus rural areas, and number of known positive COVID-19 infections as of December 15, 2020, during the survey period.[43-45] These 20 states participate in the Provider Retention Information System Management (PRISM) Collaborative (one member state at the time declined participation), a voluntary cooperative of states' clinician workforce

program offices and offices of rural health that annually surveys clinicians serving in loan repayment and scholarship programs to assess outcomes.[46, 47]

The U.S. Bureau of Health Workforce regularly provides the Collaborative with roster information on all clinicians participating in the federal NHSC, and the Collaborative's lead agency for each state provides information on all participants of their state's programs. The current study used this information to field a one-time, COVID-19 focused survey of this clinician cohort.

Invitations to participate in the survey of COVID-19 experiences were emailed to all clinicians who began serving an NHSC or state loan repayment or scholarship program contract in 2018 and 2019 and were serving as of July 1, 2020. Initial survey invitations were sent November 24, 2020, nine months into the pandemic in the U.S., and the survey closed February 7, 2021: 83% of all responses were received by December 31st. An imbedded link on the invitation took participants to the on-line questionnaire presented on Qualtrics 2020 platform (Qualtrics; Provo, UT). Clinicians were informed that participation was voluntary and anonymous.

Research ethics approval

A human subjects exemption was granted by the Non-Biomedical IRB of the Office of Human Research Ethics at the University of North Carolina at Chapel Hill (Reference ID 319209).

Survey instrument

The approximately 10-minute questionnaire primarily posed fixed-choice response questions to clinicians about how the pandemic had affected their patients, jobs and work. It also asked about their stressors during the pandemic, work-related well-being, and plans for remaining in their practices, along with demographic questions. Questions about moral distress, which appeared midway through the questionnaire, were one part of this broader study and questionnaire.

Moral distress measure

The notion of moral distress for clinicians was initially developed for and has continued to principally focus on hospital-based nurses for the distress nurses can experience when feeling obligated to act in

ways they do not feel are morally right for patients and patients' families.[7, 8, 11, 48, 49] In recent years, the study of moral distress among clinicians has expanded to other disciplines—although still principally in the hospital setting but now also in long-term care settings—and its conceptualization and measurement tools have broadened.[8, 9, 17, 50-52] For this study, we sought a definition and measurement tool of moral distress pertinent to the work of medical primary care, dental and behavioral health care practitioners working in outpatient settings in the U.S., where care is typically in small practices and provided through 15 to 60 minute patient visits, patient-practitioner relationships that often span years, and for patients living at home with their families and within communities and not uncommonly with important limiting social situations. We sought a definition relevant to physicians, nurse practitioners, dentists, psychologists and others who, by nature of their training, work and licensing, generally make independent, relatively unconstrained decisions on their patients' care.

This study conceives of moral distress as stemming from things that clinicians do or fail to do that feel morally wrong to them—consistent with original definitions of moral distress—as well as things that clinicians *witness* that they feel are morally wrong–consistent with the scope of items in the more recently developed and widely used Moral Distress Scale-Revised (MDS-R) and the Measure of Moral Distress for Healthcare Professionals (MMD-HP) and consistent with moral distress as conceptualized by the British Medical Association and others.[7, 10, 50-52] To fit the work of this study's participating disciplines, we also do not limit moral distress to situations when one's professional actions are constrained by others. [8, 9, 11]

Because our questionnaire addresses other topics and assesses issues for many disciplines during the pandemic, we assess moral distress with a brief, single-item measurement tool, the visual analog Moral Distress Thermometer scale developed and validated for hospital nurses by Wocial and Weaver and since also used with physicians.[5, 53, 54] Unlike the Moral Distress Scale-Revised and the Measure of Moral Distress for Healthcare Professionals, the Moral Distress Thermometer does not assess clinicians' degree of moral distress by querying and summing a list of specific experiences they may have had.[50-52, 55] We could not assume that these lists appropriately, accurately and fully captured the issues that morally distress primary care, dental and behavioral health clinicians working in outpatient settings for whom the causes of moral distress have been rarely assessed. The Moral Distress Thermometer more openly and simply asks subjects, "How much moral distress have you experienced"? As initially deployed, the Moral Distress Thermometer defines more distress for subjects as stemming solely from knowing the ethically right thing to do but being restricted from doing it. For the reasons outlined above, we broadened the definition of moral distress presented to subjects: "*Moral distress occurs when*

you witness or do things, whether required by circumstances or not, that contradict your deeply held moral and ethical beliefs and expectations." Immediately following this definition, participants were asked, *"How much moral distress have you experienced related to work during the pandemic?"*

Knowing that many clinicians would complete questionnaires on mobile phones with their small screen sizes, we collapsed the original, vertically listed Moral Distress Thermometer's 11 numbered response options to a more compact 6 options, while retaining the same 6 response anchors (none, mild, uncomfortable, distressing, intense, worst possible).[56] We omitted the thermometer image displayed along the response scale because we felt not all disciplines would relate to it (N.B., the Moral Distress Scale, on which the Moral Distress Thermometer was based, was set on a bookmark image).[53] The next, open-ended question in the questionnaire asked participants: *"What specific issues or events caused you most moral distress during the pandemic?"*

Public involvement

Health workforce office leaders of the 20 states with clinicians participating in this study provided consent for their state's participation and assisted in recruiting clinicians' participation, and two assisted as coauthors. Twenty-six clinicians working in safety net practices pilot tested the survey instrument. All clinician participants will receive a copy of this paper.

Analysis

Descriptive statistics characterize respondents' demographics, disciplines and work settings. The percentage of respondents who reported various levels of moral distress are reported, with comparisons made across the three discipline groups (primary care, dental health and behavioral health) and the various types of practices where they worked (e.g., mental health facilities and rural health clinics). Assessments for statistically significant group differences in moral distress levels are made with the Complex Samples feature of SPSS (IBM Corporation; Armonk, NY), a variant of the second-order Rao–Scott adjusted chi-square to account for clustering of the data because sometimes two or more clinicians worked in the same practice.[57] The above demographic and moral distress level percentages are reported weighted for clinician subgroups that differed significantly in response rates, specifically clinicians' discipline group (behavioral health vs. primary care and dental health), the particular service program clinicians were participating in (NHSC LRP vs. joint state-federal LRPs vs. NHSC Rural

Community LRP and states' service programs vs. NHSC Scholarship and NHSC Substance Use Disorder programs), and whether clinicians were participating in the service program at the time of the survey or had completed service within the preceding few months. Weights for the 20 strata varied from 0.62 to 1.40, and the calculated design effect due to weights was 1.037.

We conducted qualitative content analysis of clinicians' open-ended survey item responses to understand and categorize the issues and events they reported caused them most moral distress during the pandemic.[58] Three investigators initially read and discussed four batches of 100 responses to understand the types and range of issues that clinicians identified and how they framed them. Respondents generally indicated a moral issue (e.g., people not getting needed care or being put at greater risk of infection), the group that was harmed (e.g., patients, clinic staff or the public) and the person or entity responsible for the harm (e.g., the respondent clinician, clinic staff or society), which we used as three properties in organizing codes. The three investigators then developed and refined a coding scheme by iteratively coding and discussing five additional batches of 70 to 100 responses by considering the range of issues that clinicians identified and classifying the types of issues. The final coding scheme included 28 codes that specified both the nature of the moral issue and the group affected. A separate set of 8 codes classified the identified responsible person or entity.

Coding was based on what respondents explicitly stated with minimal interpretation so as not to misconstrue clinicians' meaning in their often brief responses. Each clinician's comment was analyzed in its entirety and was assigned a moral issue and group affected code, and also a responsible party or entity code. More than one moral issue code and/or responsible party code was assigned for comments that included more than one type of moral issue and/or responsible party. Comments that noted multiple examples of the same moral issue and/or responsible party received a single moral issue code and/or single responsible party code.[59]

We applied this coding scheme to open-ended responses in a one-third sample of completed questionnaires, i.e., responses in every third group of 100 sequentially completed questionnaires. Two investigators—a graduate student in a non-health field trained in qualitative research and a senior medical student with some content experience and knowledge but no prior familiarity with qualitative research—independently coded all responses. Inter-rater reliability assessed for responses from questionnaires not used in developing the coding scheme was acceptable for both moral issue and harmed group codes (kappa = 0.83, 95% CI, 0.80 – 0.86) and responsible person or entity codes (kappa = .83, 95% CI 0.79—0.86).[60] A third investigator, an experienced qualitative and quantitative researcher

and clinician familiar with care in safety net practices and clinicians' issues there, identified coding differences, which were settled through a combination of discussion and consensus, majority rule, and relying on the third reviewer's insights.

To simplify presentation of findings, we combined codes that had few mentions and were conceptually similar to generate a more manageable set of 11 moral issue and affected group codes and 7 codes for the responsible party. Each moral issue and its most commonly identified responsible party(ies) are briefly explained and representative quotes provided aiming to convey both the most common and range of reported issues falling within each category of moral distress (fair dealing).[61] The number of mentions of issues falling into each category of moral distress/affected group and each category of responsible party, as well as their percent of all issues mentioned are presented to convey a sense of which issues are more versus less common for these clinicians.[58, 62] Statistical weights are not applied to these percentage estimates as precise extrapolation to a target sample is inappropriate in qualitative research.[63] Among respondents whose most distressing situation fell into each of the issue types, we also compare the percentage who reported higher levels of moral distress (i.e., distress levels of "distressing," "intense" or "worst possible").[58]

Microsoft Excel (Microsoft Corporation; Redman, WA) was used to manage data during coding of participants' typically brief responses with codes subsequently used in quantitative analyses (i.e., counts and group frequency comparisons).[64] Quantitative analyses were run with SPSS version 26. A *p*-value of 0.05 was set for statistical significance.

RESULTS

Of the 4,647 clinicians surveyed, 80 email addresses failed. Of the remaining 4,567 clinicians, 2,073 responded to the questionnaire including its item on degree of moral distress (45.6%). Most respondents (54.9%) were 35-49 years old, with one-third (30.4%) younger than 35 years and 14.6% 50 years or older. Nearly three-quarters (72.9%) were women, and most (60.2%) had children at home. A strong majority were White (81.0%), with fewer being Black or African American (6.8%), Asian (7.2%), and other or multiple races (5.0%). Hispanic ethnicity was reported by 9.8%.

Degree of moral distress

Among all respondents, the mean reported level of moral distress during the pandemic was 1.58, which is about midway between “mild” and “uncomfortable” on the six-point ordinal scale from “none” to “worst possible.” A total of 28.4% reported that they experienced no moral distress, 44.8% reported “mild” or “uncomfortable” levels of moral distress, and 26.8% characterized their moral distress as “distressing,” “intense” or “worst possible” (Table 1). Primary care, dental and behavioral health clinicians were similar in their proportions at these three grouped levels of moral distress (p=.28). Moral distress levels were also similar for clinicians working across the various types of safety net practices (p=.058).

Table 1. Reported degree of moral distress related to work experienced during the pandemic, by discipline and practice setting

		Degree of moral distress (Weighted %)		
	n	None (n=588)	Mild or Uncomfortable (n=931)	Distressing, Intense or Worst Possible (n=554)
All respondents	2,073	28.4%	44.8%	26.8%
Discipline				
Primary Care combined[1]	1,097	27.9%	45.1%	27.1%
Physician	354	27.6%	47.4%	25.0%
Physician Assistant	228	30.7%	45.1%	24.2%
Advanced Practice Nurse	515	26.7%	43.6%	29.6%
Dental Health combined	294	33.4%	43.1%	23.5%
Dentist	255	33.2%	44.2%	22.6%
Dental Hygienist	39	36.4%	36.4%	27.3%
Behavioral Health combined	682	26.9%	45.1%	28.0%
Licensed Professional Counselor	223	27.6%	43.3%	29.1%
Licensed Clinical Social Worker	241	25.0%	43.6%	31.4%
Psychologist	104	28.6%	46.9%	24.5%
Other Behavioral Health	114	28.4%	50.5%	21.1%
Practice Setting[2]				
FQHC-CHC	1,083	29.3%	44.2%	26.5%
Mental health or SUD facility	260	30.2%	45.5%	24.3%
Indian Health Service or tribal site	215	22.6%	45.7%	31.7%
Rural Health Clinic	145	30.7%	39.4%	29.9%
Correctional facility	41	12.8%	43.6%	43.6%
Other office-based site	296	30.4%	46.9%	22.7%
Hospital-based site	33	17.9%	60.7%	21.4%

Abbreviations: FQHC-CHC, Federally Qualified Health Center-Community Health Center; SUD, substance use disorder

[1] Second-order Rao–Scott adjusted chi-square test for differences in group proportions for the combined disciplines of the primary care, dental health and behavioral health groups, p=.28

[2] Second-order Rao–Scott adjusted chi-square test for differences in group proportions across 7 practice settings, p=.058

Reports of issues causing clinicians most moral distress

The 1,485 clinicians who reported experiencing moral distress during the pandemic were asked what specific issues or events caused them most moral distress: 1,168 (78.6%) provided open text responses. Responses varied in length from a single word (e.g., "Death") to several paragraphs. Of the 411 clinicians whose comments were randomly selected for qualitative analysis, 336 identified a single morally distressing issue and 75 identified two or more issues, generating a total of 508 mentions of issues for analysis.

Responsible persons and entities

In clinicians' descriptions of morally distressing issues that identified a person or party as responsible, it was most often clinicians themselves (31% of all issues mentioned) (Table 2). In most cases, these were situations where clinicians felt they had not provided needed care or had provided suboptimal care to patients because of the exigencies of the pandemic or the requirements of their practices. Clinicians' clinics or organizations were the second most commonly noted responsible party (15%), followed by government, politicians or society (14%), patients (3%), the public (3%), and clinic staff and/or administrators (3%). For one-third of the morally distressing issues reported, the responsible party was unclear or not identified. Many comments that did not identify a responsible party spoke of situations that were widely known to occur during the pandemic and have been frequently highlighted in the lay press, e.g., "*Patient dying alone*;" "*Watching outbreaks unfold in nursing homes*." The lack of a named responsible party in these situations was believed by coders to indicate that clinicians were not assigning responsibility to anything other than the pandemic itself.

Table 2. Persons or entities that clinician's comments identified as responsible for the issues they found most morally distressing (n=508 comments)

Responsible Person or Entity	Representative Comments
The clinician-respondent [n=159; 31% of all responsible parties]	*"Not being able to provide care of the same quality as pre-pandemic;" "having to cancel on clients to take care of myself;" "Being unable to treat patients in need because my clinic closed"*
The clinician's clinic or organization [n=74; 15% of all responsible parties]	*"My clinic wasn't telling staff or clients when there were positive covid cases in the building and i was told not to as well." "the conflict between organization pushing for in person visit when often telemedicine would be more appropriate;"*
Government/politicians/society [n=69; 14% of all responsible parties]	*"Poor handling of COVID at federal and state levels;" "the failure of presidential leadership;" "racism, hatred, lack of moral responsibility shown by others"*
Patients [n=16; 3% of all responsible parties]	*"Patients coming into the consult room and taking off their mask;" "patients dishonesty during screening process"*
The public [n=14; 3% of all responsible parties]	*"Lack of social responsibility of others to wear a mask;" "Anti-maskers/Conspiracy Theorists/ Anti-vaxxers"*
Clinic staff and/or administrator [n=13; 3% of all responsible parties]	*"Providers/staff not following COVID protocols;" "a decline in the medical staff treatment of some of the pts;" "My MA declining COVID testing . . . while family at home had COVID."*
Unspecified/unclear/other [n=163; 32% of all responsible parties]	*"My clients anxiety;" "Needless deaths;" "Potential to exposure;" "Forced lock downs. COVID screening and testing"*

Morally distressing issues

Table 3 presents the 11 categories that clinicians' reported morally distressing issues fell into, with representative verbatim comments. The percentage of each individual or entity identified as responsible for each of the morally distressing issues is shown in Figure 1. The percentage distribution of comments falling into the 11 categories of morally distressing issues was comparable for primary care, dental health and behavioral clinicians (p = .123), with one exception: compared to primary care and behavioral health clinicians, dental health clinicians more often reported issues related to risking infecting patients and clinic staff (17.0% vs. 35.1%, respectively; p = .005).

The 11 categories of morally distressing issues and common subcategories within each follow below.

1. Patients not receiving the best and/or needed care (Principal responsible party: the clinician-respondent (Figure 1)). This was the most commonly reported group of morally distressing issues, comprising 29% of all issues mentioned (Table 2). The limitations of telehealth and virtual care for patients were commonly mentioned, noting that they were often inadequate for appropriate care and posed a barrier to care for some patients.

> *"we've primarily done phone/telehealth. There are times I have anxiety related to "what if I've missed" something because I'm unable to see the person in full."* (Nurse practitioner, Oregon)
>
> "*Providing care by telephone. Don't feel that I can connect with clients in the same meaningful way*." (Physician, Alaska)
>
> *"Having to move patients to telehealth even though they themselves may not have the resources to access telehealth services."* (Licensed Professional Counselor, Minnesota)

Other clinicians expressed that various circumstances of the pandemic limited what they could do for patients.

> *"Not being able to provide care of the same quality as pre-pandemic."* (Nurse Practitioner, California)

Some clinicians noted that their clinic's decisions and protocols meant to limit COVID exposure to patients and staff or bolster practice finances affected patients' quality or access to care.

> *"Not being able to provide the care I'd like. Financial decisions negatively affecting patient care."* (Nurse Practitioner, Arizona)

Table 3. Categories of morally distressing issues with representative comments (n=508 comments)

Morally Distressing Issue Category	Representative Comments
Within the clinic	
Patients not receiving the best and/or needed care [n=145; 29% of all issues]	*"Performing telehealth visits that really require in person evaluation;" "Not having the resources to always help my patients;" "telling people they couldn't have dental care because it wasn't emergent;" "Not able to provide the quality of care I would like to"*
Risking infecting patients and/or clinic staff [n=97; 19% of all issues]	*"Worrying about infecting others with covid if i am asymptomatic;" "Had to reuse N95 mask for two to four weeks." "Assuring my family health with client's not following protocol (including masks);" "My clinic wasn't telling staff or clients when there were positive covid cases in the building and i was told not to as well."*
Abuse of staff or ignoring their needs [n=37; 7% of all issues]	*"Overworking staff;" "Lack of support/appreciation from administration;" "Lack of PTO being allowed;" "Feeling like my safety and the safety of my team is not a priority and we are not valued except to keep money coming in . . ."*
The suffering of patients [n=36; 7% of all issues]	*"Patients passing away from Covid, huge number of them infected;" "Increased use of drugs/alcohol as a coping mechanism by patients;" "Listening to patients who have been affected by the pandemic"*
The suffering of clinic staff [n=28; 6% of all issues]	*"Uncertainty of employment;" "Being unable to validate some of my team when they are struggling;" "Work stress;" "Colleagues getting sick or having family members die."*
Inequities for patients [n=8; 2% of all issues]	*"Seeing how my patient population has been disproportionately affected by illness and death because of socioeconomic issues;" "Seeing patients unable to get their healthcare needs met due to financial circumstances, inability to obtain health insurance, loss of income, etc.."*
Within the community	
Politics in the community [n=30; 6% of all issues]	*"Political approach to the pandemic;" "Politicians behavior, behavior of their supports;" "politics and collision with medicine/science"*
The suffering of people in the community [n=27; 5% of all issues]	*"Hearing or seeing others struggle;" "increase in poverty and suicides;" "Forced lock downs;" "knowing that elderly people in nursing homes were contracting and dying from the virus due to employees or family members infecting them. Very sad and irresponsible."*
Inequities and injustice within the community [n=25; 5% of all issues]	*"racial injustice, lack of access to healthcare;" "The disproportionate effect of COVID-19 on minority and impoverished communities;" "The ongoing racism and racial inequality experienced by BIPOC."*
Risking infecting people in the community [n=22; 4% of all issues]	*"Lack of community commitment for COVID safeguards;" "Lack of social responsibility of others to wear a mask;" "Lack of compliance with CDC recommendations in my community . . ."*
Unclear issues	
Unclear/uncertain/other issue [n=53; 10% of all issues]	*"My patients;" "Helping to run the COVID clinic;" "decisions made by management;" "Being asked to screen patients for covid symptoms despite no medical training;" "COVID 19 vaccines"*

2. Risking infection of patients and/or clinic staff (Principal responsible parties: the clinician-respondent and their clinic/organization). Comments related to circumstances that placed patients and clinic staff at risk of COVID infection were the second most common type mentioned (19% of total), and were the most frequently reported morally distressing issue for dental clinicians (35% of their comments). Shortages of personal protective equipment (PPE) were frequently mentioned, as was the importance of balancing patients' needs for in-person care with the infection risks this carried for them and clinic staff.

> *"Worrying about keeping my employees safe, versus the importance of client care."* (Licensed Clinical Social Worker, Oregon)

> *"Got infected with COVID and my wife got infected because I was exposed at work."* (Physician, North Dakota)

3. Abuse of staff and/or ignoring their needs (Principal responsible party: the clinic/organization). Some clinicians felt that their clinics made operational decisions without adequate regard for the effects on clinicians and other staff. Some felt their health was inadequately protected by their organizations and that their needs as people and employees were unheeded.

> *"All our manager and director seem to care about us making money and how many patients we see. I was having to balance being exposed to so many patients then going home to my family and potentially exposing them."* (Dentist, Arizona)

> *"Organization not properly testing or protecting employees. Not providing hazard pay [or] providing FMLA"* (Physician Assistant, South Carolina)

4. The suffering of patients (Principal responsible party: unspecified/unclear/other). Some clinicians noted the tragedy of the pandemic's toll on their patients' physical health, mental health, work and families, and how difficult it was for them, as their clinicians, to witness this.

> *"Seeing how it has impacted families in our clinic and feeling powerless to make meaningful change."* (Nurse Practitioner, North Carolina)

> *"More clients in crisis and dealing with high anxiety. There has been less access to resources and supports for them in the community, which leaves me feeling helpless as a clinician."* (Licensed Clinical Social Worker, Oregon)

5. The suffering of clinic staff (Principal responsible party: unspecified/unclear/other). Clinicians recounted illnesses among coworkers (e.g., *"My nurse dying from complications of Covid;" "Colleagues getting sick or having family members dies"*), and fears of illness for themselves. Others spoke of employment challenges (e.g., *"job security;" "partial lay off, decreased hours, having to find a new job for more income"*). Still others spoke of feeling overwhelmed (e.g., *"Continual stress buildup, fear of an unknown outcome;" "Juggling too much"*).

6. Inequities for patients (Principal responsible parties: unspecified/unclear/other and the government/politicians/society). A few clinicians remarked that their patients suffered disproportionately during the pandemic because they were a marginalized group, could not afford care, or there were no services available for them.

> *"Diagnosing patients experiencing homelessness with COVID and not being able to provide them with a safe place to isolate/recover."* (Physician, California)

The next four types of morally distressing issues listed below—encompassing 20% of all comments—occurred outside of clinicians' practices within their communities, states or nationally. These issues were not specifically noted to affect clinicians' patients or their care, but seemingly distressed clinicians given their knowledge of and concern about health, health care, public health, science and social justice. The government, politicians and society were frequently identified as causing these issues, but often the cause was unspecified or unclear.

7. Politics in the community (Principal responsible party: the government/politicians/society). Politics and politicalized issues—the elections, the politization of the pandemic, conflicts between people with different political views—were mentioned as morally distressing because they created conflict and upset society, and sometimes for how it affected clinicians' work and families.

> *"Anti-science movement, lack of leadership, CDC tarnished, politics, politization of health measures."* (Physician Assistant, North Carolina)

> *"The politicization of science and mask wearing has been very upsetting as it has put my life and my family's life at risk. . . . when these people get a severe toothache, they expect to be seen by a dentist, who's very life is put at risk by their anti-mask behaviors with I am put in a position to provide oral healthcare."* (Dentist, Nebraska)

8. The suffering of people in the community (Principal responsible party: unspecified/unclear/other). Mentions of the suffering of people in the community generally mirrored the suffering that other clinicians noted for their patients, including the pandemic's impact on people's physical health, mental health, and financial situations. A few comments were about community suffering due to public health measures and other government responses to the pandemic.

> *"The way we are handling "the numbers" as a nation, closing schools, putting child's development and wellbeing in danger . . . "* (Nurse Practitioner, Kentucky)

9. Inequities and injustice within the community (Principal responsible party: the government/politicians/society). The issues mentioned centered around racism and social injustice (*"BLM;" "George Floyd;" "racial injustice;" "racism"*) and disparities in health and health care (*"Exacerbation of health disparities;" "Witnessing health inequalities and disparities"*)

10. Risking infecting people in the community (Principal responsible party: various). Comments in this category uniformly spoke of people not wearing masks or otherwise failing to follow the CDC's protocols to mitigate the pandemic's spread. Some comments were about people showing no concern or sense of responsibility for one another.

> *"witnessing people not wear masks or following CDC guidelines"* (Dentist, Montana)

> *"Lack of concern of people for others' wellbeing (selfishness)*" (Physician, Arizona)

11. Unclear/uncertain/other issue (Principal responsible parties: various). Some comments were too brief and without sufficient details or context to know what specifically about the issue mentioned was morally distressing to the clinician. For example, the comment *"telehealth or phone"* might be intended to indicate the inadequacies of telehealth but alternatively that the practice could not offer telehealth.

Relationship between the moral distress issue cited and the amount of moral distress reported

Clinicians whose open-ended comments fell across the 11 categories of moral distressing issues varied in their likelihood of reporting a higher level—distressing, intense or worst possible—of distress, ranging from 29.7% to 62.5% (p = .001) (Figure 2). Clinicians most likely to rate their moral distress in the higher level range reported distressing issues in the categories of inequities for patients, abusing and/or ignoring the needs of clinic staff, and inequities within the community. Clinicians who least often rated

their moral distress in the higher range reported issues related to patients not receiving the best and/or needed care, an unclear/uncertain/other issue, and the suffering of clinic staff.

DISCUSSION

In this study of two thousand clinicians working in a variety of outpatient safety net practices in 20 U.S. states during the first 9 months of the COVID-19 pandemic, 71.6% reported experiencing moral distress related to their work. Most who experienced moral distress characterized it as "mild" or "uncomfortable," but one-quarter (26.8%) of all clinicians described their moral distress levels as "distressing," "intense" or "worst possible." Moral distress levels were similar for primary care, dental and behavioral health clinicians, and similar for clinicians working in the various types of safety net practices. Moral distress levels during the pandemic for other, principally hospital-based clinician groups has similarly been characterized in prior studies as generally mild.[4, 5, 65]

The most commonly mentioned issues that this study's outpatient, safety net practice clinicians found most morally distressing related to patients not receiving the best or needed care and the infection risks faced by patients and staff in the clinic. These are among the types of issues that clinicians working in other settings have found morally distressing during the pandemic.[4, 5, 10, 13] But whereas suboptimal care for hospital-based clinicians was often related to having little to offer COVID-infected patients early in the pandemic and shortages of ICU beds and respirators and issues of fairness in rationing when local infection and hospitalization rates peak, for these outpatient clinicians it was frequently due to restrictions on the types of care that could be safely provided in the office and the limitations of telehealth. Priority-setting dilemmas have been common for hospital-based clinicians in the pandemic due to staff and equipment shortages.[5] Similarly, our study's office-based clinicians spoke of or implied *competing and conflicting priorities*, such as patients' needs for care versus the staff's and patients' needs for safety, and clinics' needs to continue encouraging patient visits to generate revenue versus the staff's need to limit patient visits to numbers that could be managed safely.

Clinicians were also morally distressed during the pandemic by other things that occurred within their offices, including the suffering of patients and clinic staff, the mistreatment and abuse of staff, and inequities for patients. Clinicians also found things within their communities and across society morally distressing, including the politicization of the pandemic, people failing to wear masks and otherwise take

personal responsibility to protect themselves and others, people suffering in their health, economically and socially, and people facing inequities and injustices.

Within the common bioethical framework of principalism, not providing best or all needed care and infecting others violate clinicians' moral obligations of beneficence and non-maleficence, that is to help patients to the best of a clinicians' ability and to cause them no harm.[17, 66] These are also the two moral principles central in the original framing of moral distress among intensive care unit nurses, who can feel compelled to provide care to patients that they believe is futile or harmful.[67]

The broader range of issues found morally distressing to this study's outpatient clinicians often violate a third bioethical principle: justice. Injustices were observed when certain patient groups and communities faced barriers to care, health disparities, and social injustices during the pandemic. Importantly, the level of moral distress was more often in the high range among clinicians who provided examples of inequities and other injustices for patients (62.5%) and within the community (69.0%) than among clinicians who cited examples of patients not receiving the best and all needed care (29.7%). The latter has commonly been assumed to be the main source of moral distress for clinicians during the pandemic, but for these clinicians it was less often the cause of greater moral distress.[12, 68, 69] It is not surprising that inequalities and other injustices frequently cause significant moral distress for clinicians working in safety net practices, who were motivated in their careers to work with patients facing economic, social and geographic barriers to care, often for lower pay.

The fourth common bioethical principle, autonomy, was reflected in the comments of just a few clinicians who reported moral distress from the pandemic's public health mandates that constrained individual freedoms.

Previous studies and fixed-response option survey instruments of moral distress among clinicians have focused on issues occurring within health care settings, typically the hospital.[50, 51, 55] This study's open-ended and unconstrained query of perceived causes of moral distress during the pandemic elicited many reports of events occurring outside health care settings, such as people not wearing masks in public, as well as issues sometimes not even directly related to health, such as the pandemic's financial impact on families. The definition of moral distress provided to this study's clinicians specified distress from issues "related to work during the pandemic". It is likely that outpatient clinicians view the community's failure to heed public health mandates has been relevant to their work, as it affects local infection rates and, in turn, the number of infected patients they will see in the office, infection risks thereby placed on clinicians and staff, and their offices' ability to provide a full range of care to patients

with other needs. And many clinicians found the pandemic's effects on non-health care related aspects of people's lives most morally distressing, and thus more salient to report, than its disruptions to care patients received in the office. It may also be that some clinicians simply had not read or heeded the definition of moral distress provided.

In the morally distressing actions that clinicians themselves had carried out or failed to carry out, their wording generally indicated they felt compelled to do so, through statements like, "Not being able to provide care . . ." and "Being unable to treat patients . . .", often forced by circumstances unavoidable due to the pandemic. Some clinicians perceived the pandemic created conflicts between their individual-focused clinical ethics—making decisions that are best for patients as individuals and respecting their autonomy—and society's public-focused ethics, that is, prioritizing the population's health and its other needs.[6, 17]

Some clinicians held their clinic or its parent organization responsible for choices that caused their moral distress, most often policies perceived to ignore or abuse the needs of staff or that risked infecting clinic staff and patients. And some clinicians recognized a clash between their clinics' corporate values and clinicians' own better understanding and prioritization of people's health, safety and best care: "This company's ongoing quest to put profits over people." Even when clinicians viewed circumstances of the pandemic or their employers as forcing them to alter to which patients, how and what care they provided, their words still often indicated that they felt bad about their roles in carrying out these requirements out: "feeling like I'm not adequately helping clients via telehealth," "Having to see patients on the telephone doesn't always feel right but it [was] required," "feeling like my work isn't enough, that my clients need more than I can give."

In the absence of studies of moral distress among outpatient and safety net practice clinicians prior to the current pandemic, we cannot be certain that the distress measured here at nine months into the pandemic is greater than if measured in 2019 or earlier. But most issues these clinicians found most morally distressing during the pandemic related directly or indirectly to the pandemic, thus their moral distress has likely increased with the pandemic. Their moral distress may have increased further since this late 2020/early 2021 survey, as vaccines have since become widely available but then shunned by many people, prolonging the pandemic and causing many needless deaths.[70]

This study has several important limitations. Its 45.8% response rate is strong for a survey of clinicians but can still allow response bias. This was addressed through statistical weighting in analyses of demographics and quantified levels of moral distress. If response bias remained, it would have affected

the levels of moral distress measured and group comparisons, but not likely the range of issues identified as morally distressing to clinicians in safety net practices. The reported frequencies of the various types of morally distressing issues and responsible parties, derived from mentions in qualitative analyses, should be understood only to show the issues most and least commonly mentioned and not taken as meaningful frequency point estimates of the target population.[58, 62]

Clinicians' interpretation of the original single question Moral Distress Thermometer measurement tool and its adaptation for this study, as well as some other aspects of their validity, have not been assessed.[51] Further, relying on open-ended written response data gave us no opportunity to clarify clinicians' responses or allow us to understand the fuller context, meaning and significance of the issues they report. This should be addressed in future studies.

In terms of generalizability, this study assessed moral distress in a subset of U.S. safety net clinicians who participated in service-requiring education loan repayment and scholarship programs. Although this cohort is broad in its disciplines and in the types of safety net practices where clinicians work, its experiences may not fully reflect that of other clinicians working in their safety net practices, who are more often older and more likely to be in leadership positions because of their seniority. Some but not all studies of moral distress among critical care nurses find that nurses who are more experienced are less likely to experience moral distress. [71]

Conclusions and Implications

Moral distress for clinicians during the COVID-19 pandemic has occurred alongside and contributed to their stresses from other sources and to their emotional exhaustion and burnout.[4, 5, 15, 72-75] The consequences of moral distress for these clinicians at the levels found and for the issues reported remains to be demonstrated. Clinicians morally distressed by perceived unjust or otherwise harmful policies their safety net practices made may be more likely to join the "Great Resignation" and look for work elsewhere.[22, 23, 76, 77] On the other hand, clinicians' connections with their jobs may not be affected for those morally distressed by things perceived to be unavoidable during the pandemic or otherwise not due to their practices, especially if working during the pandemic has strengthened their sense of meaning in work and thus the value of their jobs.[40, 75, 78]

Various approaches have been suggested to address moral distress among clinicians. Approaches relevant to outpatient practices are for managers to understand what moral distress means for clinicians

and its importance to them, create supportive work environments, create ways for clinicians and staff to learn and talk about moral distress and safely raise moral issues, identify and address any ongoing sources of moral distress, and provide clinicians with needed psychological support and time away from work.[10, 12, 75, 79] Managers should openly involve clinicians in operational decisions made during challenging times—indeed, all times—so that decisions can be informed by clinicians' perspectives and clinicians can better understand the choices available to their practices and reasoning behind the decisions made that affect them, their colleagues and their patients.

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Data availability statement Data are available on reasonable request. Access to deidentified, open text survey responses will be available 2 years after article publication to researchers who provide a methodologically sound proposal to achieve specific articulated aims. Proposals should be directed to the project's lead investigator (don_pathman@unc.edu). A data access agreement will be required that spells out the requester's data protection procedures, requirements to protect subject confidentiality, and that limits the use of data to the agreed upon purpose.

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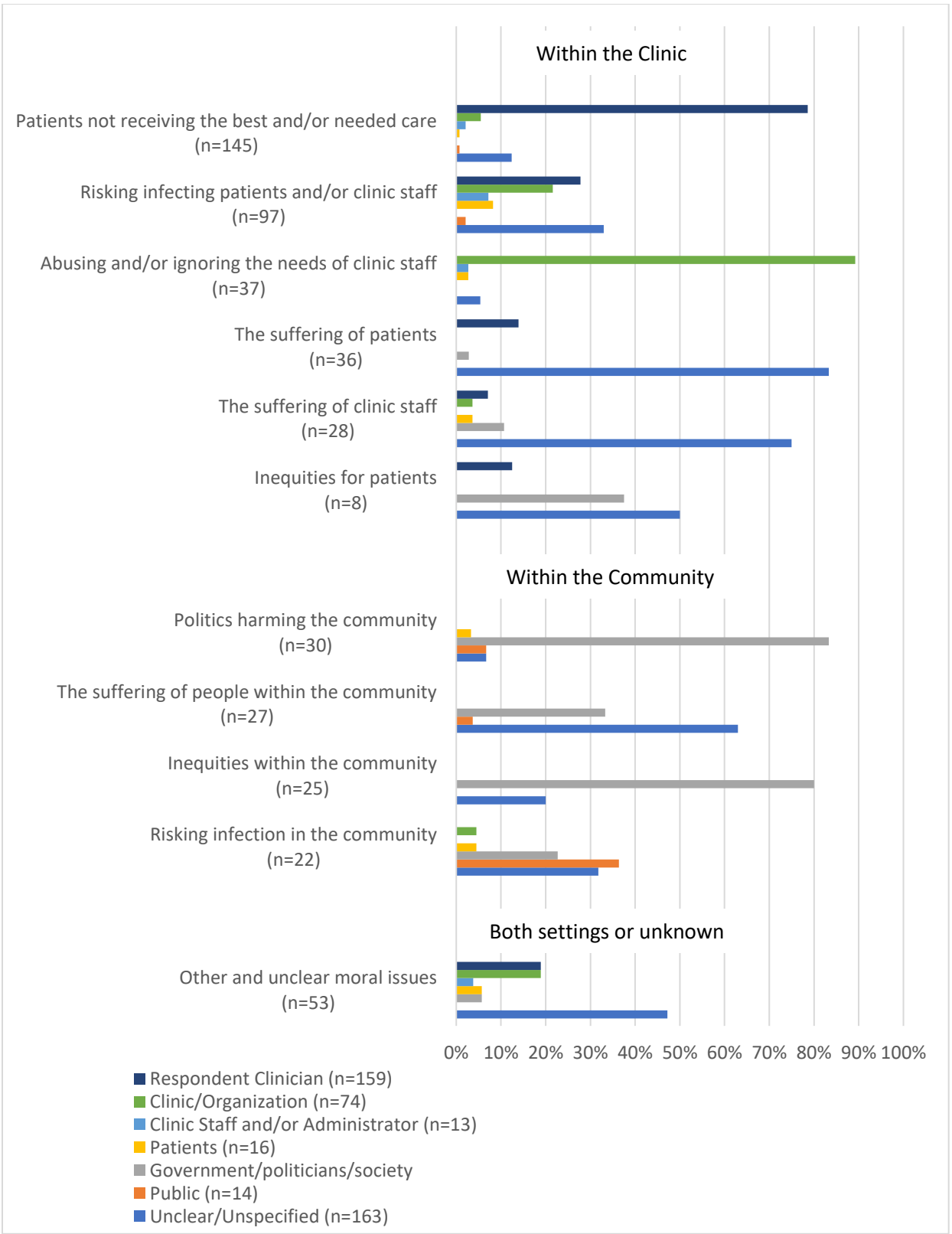
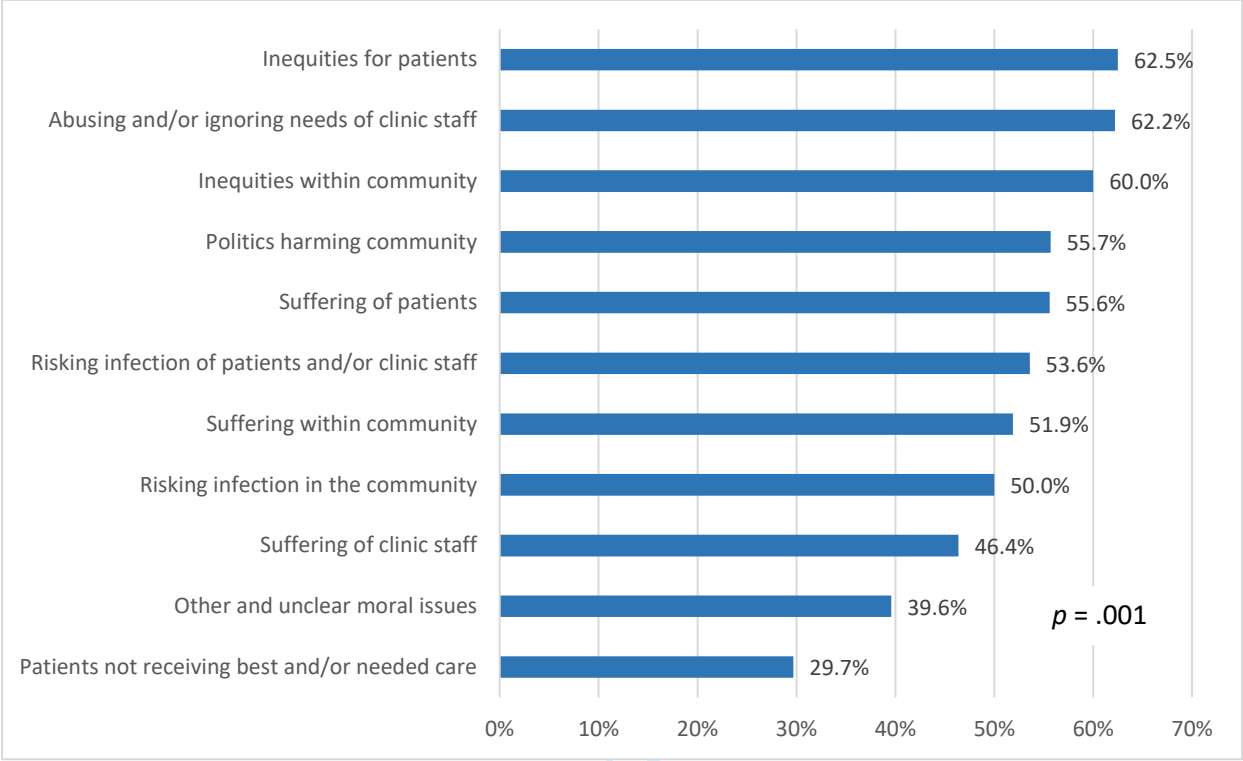
Figure legends

Figure 1. Responsible person or entity (%) identified for each morally distressing issue, n=508 issue mentions

Figure 2. Percentage of respondents who reported a distressing, intense or worst possible level of moral distress (vs. mild or uncomfortable level) among clinicians who reported each type of most morally distressing issue, n=508 issue mentions





Moral distress among clinicians working in U.S. safety net practices during the COVID-19 pandemic: A Mixed Methods Study

Standards for Reporting Qualitative Research checklist

No.	Topic	Page, location
	Title and Abstract	
S1	Title	1, Title
S2	Abstract	2, Abstract
	Introduction	
S3	Problem formulation	4, Introduction
S4	Purpose or research question	5, top full paragraph
	Methods	
S5	Qualitative approach and research paradigm	9-10, *We conducted qualitative content analysis of clinicians' open-ended survey item responses*
S6	Researcher characteristics and reflexivity	9 (bottom) through 10 (top) Reflexivity not explicitly reported
S7	Context	5, last paragraph of Introduction. 5, first paragraph of "Methods" Table 1, "Practice Setting"
S8	Sampling strategy	5, first paragraph of "Subjects," no sampling done for clinicians to be surveyed 9, last paragraph, *We applied this coding scheme to open-ended responses in a one-third sample of completed questionnaires, i.e., responses in every third group of 100 sequentially completed questionnaires*.
S9	Ethical issues pertaining to human subjects	6, "Research ethics approval"
S10	Data collection methods	6, second paragraph
S11	Data collection instruments and technologies	6, second paragraph and "Survey instrument"
S12	Units of study	8, last paragraph; 10, first full paragraph
S13	Data processing	NA. This study gathered electronic survey data (i.e., no need for recordings, transcripts, translation)
S14	Data analysis	8, last paragraph through page 10 first full paragraph
S15	Techniques to enhance trustworthiness	6, second full paragraph, subjects informed that *participation was voluntary and anonymous* 7, adapted a previously used instrument to measure clinicians' amount of moral distress 8 top, definition of moral distress was presented to subjects

		9-10 Independent and iterative approach to developing coding scheme. Independent coding by two researchers with differences settled by consensus, a third reviewer and/or majority rule Kappa's reported for inter-rater reliability, measured at 0.80 and 0.83 Fair dealing—quotes provided to reader to *convey both the most common and range of reported situations falling within each category of moral distress* (p 10) 15-17, linking findings to prior studies
Results/Findings		
S16	Synthesis and interpretation	10-14
S17	Links to empirical data	10-19 and Tables 2 and 3 provide many verbatim quotes representing common responses and the breadth or responses coded within each moral distress issue and each responsible party code
Discussion		
S18	Integration with prior work, implications, transferability and contributions to the field	20-17, first eleven paragraphs of Discussion 23, second paragraph, generalizability 23-24, "Conclusions and Implications" Transferability (equivalent to external validity in quantitative research) addressed within limitations, last paragraph before "Conclusions and Implications"
S19	Limitations	22 bottom through mid 23
Other		
S20	Conflicts of interest	Reported in "Competing Interests"
S21	Funding	Reported in "Funding"

Moral distress among clinicians working in U.S. safety net practices during the COVID-19 pandemic: A Mixed Methods Study

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation	Page, location
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1, title
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2, abstract
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	5, top full paragraph
Methods			
Study design	4	Present key elements of study design early in the paper	5, first line of Methods
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5, last paragraph of Introduction 5-6, first three paragraphs of Methods
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	5, last paragraph of Introduction 5-6, first three paragraphs of Methods
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	5, top paragraph 6, Survey Instrument 6-8, "Moral distress measure"
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	6-8, "Moral distress measure"
Bias	9	Describe any efforts to address potential sources of bias	8-9, first paragraph of Analysis
Study size	10	Explain how the study size was arrived at	5, first line of Subjects. Survey included all eligible subjects in 40% of US states; no formal power analysis performed
Quantitative variables	11	Explain how quantitative variables were handled in the	8, first paragraph

		analyses. If applicable, describe which groupings were chosen and why	of Analysis; 9, third paragraph of Analysis
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	8, first paragraph of Analysis; 9, third paragraph of Analysis
		(*b*) Describe any methods used to examine subgroups and interactions	8, first line of Analysis
		(*c*) Explain how missing data were addressed	10, first line of Results. The few subjects with missing moral distress level values were counted as nonrespondents in response rate calculations
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	8, first paragraph of Analysis. We used Rao–Scott adjusted chi-square
		(*e*) Describe any sensitivity analyses	NA
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	10, first paragraph of Results; 13, "Reports of issues causing clinicians moral distress"
		(b) Give reasons for non-participation at each stage	NA—only "non-participation" is non-response, for which individuals' reasons are unknown
		(c) Consider use of a flow diagram	NA—simple cross-sectional survey
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	9, first paragraph of Results; Table 1
		(b) Indicate number of participants with missing data for each variable of interest	10, first line of Results. The few missing moral distress level values were treated as nonrespondents

			in response rate calculations; 13, first line of "Reports of issues causing clinicians most moral distress"
Outcome data	15*	Report numbers of outcome events or summary measures	10-11, "Degree of moral distress"
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	10-11, "Degree of moral distress"; No adjustments for confounding.
		(*b*) Report category boundaries when continuous variables were categorized	10, "Degree of moral distress"
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	11 13 15, top paragraph 19 bottom paragraph through 10 top partial paragraph Figure 1 Figure 2
Discussion			
Key results	18	Summarise key results with reference to study objectives	20-22, first seven paragraphs of Discussion
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	22 bottom paragraph through 23 first two full paragraphs
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	2-22, first ten paragraphs of Discussion
Generalisability	21	Discuss the generalisability (external validity) of the study results	23, second full paragraph
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Reported in Funding

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

BMJ Open

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Moral distress among clinicians working in U.S. safety net practices during the COVID-19 pandemic: A Mixed Methods Study

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Key words: workforce; ethics; outpatients; justice; COVID-19

Word count: 6,818

Abstract

Objective To explore the causes and levels of moral distress experienced by clinicians caring for the low-income patients of safety net practices in the United States (U.S.) during the Coronavirus disease 2019 (COVID-19) pandemic.

Design Cross-sectional survey in late 2020, employing quantitative and qualitative analyses

Setting Safety net practices in 20 U.S. states

Participants 2,073 survey respondents (45.8% response rate) in primary care, dental and behavioral health disciplines working in safety net practices and participating in state and national education loan repayment programs.

Measures Ordinally scaled degree of moral distress experienced during the pandemic, and open-ended response descriptions of issues that caused most moral distress.

Results Weighted to reflect all surveyed clinicians, 28.4% reported no moral distress related to work during the pandemic, 44.8% reported "mild" or "uncomfortable" levels, and 26.8% characterized their moral distress as "distressing," "intense" or "worst possible." The most frequently described types of morally distressing issues encountered were patients not being able to receive the best or needed care, and patients and staff risking infection in the office. Abuse of clinic staff, suffering of patients, suffering of staff, and inequities for patients were also morally distressing, as were politics, inequities and injustices within the community. Clinicians who reported instances of inequities for patients and communities and the abuse of staff were more likely to report higher levels of moral distress.

Conclusions During the pandemic's first nine months moral distress was common among these clinicians working in U.S. safety net practices. But for only one-quarter was this significantly distressing. As reported for hospital-based clinicians during the pandemic, this study's clinicians in safety net practices were often morally distressed by being unable to provide optimal care to patients. New to the literature is clinicians' moral distress from witnessing inequities and other injustices for their patients and communities.

Strengths and limitations of the study

- This study's clinician study cohort is large and broad in terms of its disciplines, types of safety net practice work settings, and states across the United States, and its subject participation rate is strong.

- This study presents office-based clinicians with a broad definition of moral distress and non-constrained measurement tool, the Moral Distress Thermometer, which do not limit findings to what has been learned previously in studies of clinicians working in hospital settings.

- Clinicians' understanding of the single-question Moral Distress Thermometer and some other aspects of its validity were not assessed.

- Relying on open response survey item data to learn about causes of moral distress did not allow us to clarify clinicians' responses or more fully understand what the issues they reported mean to them.

- We cannot directly know how moral distress changed for U.S. outpatient safety net clinicians with the pandemic because there are no studies prior to the pandemic.

INTRODUCTION

News photos and stories of physicians and nurses laboring in intensive care units overflowing with ill and frightened patients have been among the most iconic images of the Coronavirus disease 2019 (COVID-19) pandemic.[1, 2] These clinicians have been shown to be physically and emotionally exhausted, and also said to be *morally distressed* by witnessing and participating in people's illness, care and death in sheer numbers and under circumstances that feel morally wrong.[3-6] The concept of moral distress among health care professionals is several decades old but still evolving.[7-11] In this study, we conceptualize moral distress as the psychological unease or distress that occurs when one witnesses, does things, or fails to do things that contradict deeply held moral and ethical beliefs and expectations.

Likely clinicians in many disciplines and work settings have felt morally distressed in their work during the pandemic.[5, 12] This has been demonstrated for broad cohorts of principally hospital-based clinicians in the United States (U.S.), United Kingdom, and worldwide.[10, 13-15] We are aware of no studies that have assessed moral distress during the pandemic specifically among outpatient clinicians, but such distress is easy to imagine. Outpatient offices in the U.S. were commonly closed early in the pandemic and then reopened but operated with restricted services and altered care standards to promote safety for more than a year, and these changes may have made outpatient clinicians feel that they were violating their core moral duties to patients of beneficence and non-maleficence, that is, to help patients to the best of their ability and not cause them harm.[16-22] Clinicians could have been morally distressed by the many patients who, out of fear of being infected by coming to their health provider's office, delayed or forewent needed office visits and care, including for heart attacks and cancer treatment.[20, 23-25] Further, for the many months when adequate personal protective equipment was unavailable for health care providers in the U.S. and vaccines not yet available to provide protection, many clinicians in both outpatient and inpatient settings could have felt that they had violated their duty to themselves simply by continuing to see patients and thereby risking becoming infected, and then infecting their families.[12-14, 26-28] Moral distress during the pandemic can have important consequences for clinicians, as moral distress is associated with disengagement from patients, compassion fatigue and poorer quality of care,[29, 30] poorer clinician mental health and burnout,[13, 29, 31-33] and job dissatisfaction and turnover.[29, 32, 34]

Among outpatient clinicians in the U.S, those in safety net practices, which provide care to poor and often racial-ethnic minority patients who face barriers to receiving care in the U.S. mainstream healthcare system, have worked with patients most affected by illness and death during the

pandemic.[35-40] This patchwork of publicly funded or subsidized practices—Federally Qualified Health Centers (FQHCs), clinics of the Indian Health Service, county health departments, community mental health facilities, and others—frequently have not had the financial resources to adapt care to continue safely providing services to their patients.[41-43] Moral distress during the pandemic for clinicians in these special settings therefore may have been greater than for outpatient clinicians generally.

This study assesses moral distress at nine months into the COVID-19 pandemic among clinicians working in a wide range of types of safety net practices in 20 U.S. states. With no available listing of safety net practices of the many types across states or rosters of their clinicians, we study moral distress within a large subgroup of safety net clinicians for whom complete roster data are uniquely available. Specifically, we study clinicians participating in federal and state loan repayment and related programs that help clinicians pay down debt incurred from the costs of their training in exchange for a period of work within safety net practices.[44-46] This study assesses these clinicians' self-reported levels of moral distress. It categorizes and describes the issues they report caused them most moral distress during the pandemic. It also compares the moral distress levels and issues of primary care, dental and behavioral health clinicians, whose care required different adaptations to the pandemic bringing varying challenges to clinicians and patients.[47] It further assesses how the level of moral distress clinicians report varies with the types of issues they report caused them most distress.

METHODS

Subjects

To study the pandemic's various effects on clinicians working in safety net practices, we surveyed all primary care, dental and behavioral health clinicians and providers in 20 U.S. states who were participating in the education loan repayment (LRP) and scholarship programs of the National Health Service Corps (NHSC) and in states' similar programs that have service commitments to work within safety net practices.[45, 46, 48, 49] The 20 states (Alaska, Arizona, Arkansas, California, Delaware, Iowa, Kentucky, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, Oregon, Rhode Island, South Carolina, Virginia and Wyoming) constitute 40% of all U.S. states, and do not differ statistically from the 30 other U.S. states in both mean and median total population, mean per-capita income, percentage population living in urban versus rural areas, and number of known positive COVID-19 infections as of December 15, 2020, during the survey period.[50-52] These 20 states

participate in the Provider Retention Information System Management (PRISM) Collaborative (one member state at the time declined participation), a voluntary cooperative of states' clinician workforce program offices and offices of rural health that annually surveys clinicians serving in loan repayment and scholarship programs to assess program outcomes.[53, 54]

The U.S. Bureau of Health Workforce regularly provides the Collaborative with roster information on all clinicians participating in the federal NHSC, and the Collaborative's lead agency for each state provides information on all participants of their state's programs. The current study used this information to field a one-time, COVID-19 focused survey of this clinician cohort.

Invitations to participate in the survey of COVID-19 experiences were emailed to all clinicians who began serving an NHSC or state loan repayment or scholarship program contract in 2018 and 2019 and were serving as of July 1, 2020. Initial survey invitations were sent November 24, 2020, nine months into the pandemic in the U.S., and the survey closed February 7, 2021: 83% of all responses were received by December 31st. An imbedded link on the invitation took participants to the on-line questionnaire presented on the Qualtrics 2020 platform (Qualtrics; Provo, UT, U.S.). Clinicians were informed that participation was voluntary and anonymous.

Research ethics approval

A human subjects exemption was granted by the Non-Biomedical IRB of the Office of Human Research Ethics at the University of North Carolina at Chapel Hill (Reference ID 319209).

Survey instrument

In this 10-minute questionnaire, items addressing moral distress were part of a broader survey to understand safety net practice clinicians' experiences during the pandemic. Other survey questions asked how the pandemic had affected clinicians' patients, work and jobs, and queried clinicians' stressors and wellbeing. Moral distress was included in this study because of its demonstrated importance to the experiences of clinicians working in hospital settings during the pandemic, and anticipating that moral distress may be particularly important to clinicians caring for low-income populations that had been most affected by the pandemic.

Moral distress measure

The notion of moral distress for clinicians was initially developed for and has continued to principally focus on hospital-based nurses for the distress nurses can experience when feeling obligated to act in ways they do not feel are morally right for patients and patients' families.[7, 8, 11, 55, 56] In recent years, the study of moral distress among clinicians has expanded to other disciplines—although still principally in the hospital setting but now also in long-term care settings—and its conceptualization and measurement tools have broadened.[8, 9, 22, 57-59] For this study, we sought a definition and measurement tool of moral distress pertinent to the work of medical primary care, dental and behavioral health care practitioners working in outpatient settings in the U.S., where care is typically in small practices and provided through 15 to 60 minute patient visits, patient-practitioner relationships that often span years, and for patients living at home with their families and within communities, and supported or limited by families' social situations. We sought a definition relevant to physicians, nurse practitioners, dentists, psychologists and others who, by nature of their training, work and licensing, generally make independent, relatively unconstrained decisions on their patients' care.

This study conceives of moral distress as stemming from things that clinicians do or fail to do that feel morally wrong to them—consistent with original definitions of moral distress—as well as things that clinicians *witness* that they feel are morally wrong–consistent with the scope of items in the more recently developed and widely used Moral Distress Scale-Revised (MDS-R) and the Measure of Moral Distress for Healthcare Professionals (MMD-HP) and consistent with moral distress as conceptualized by the British Medical Association and others.[7, 10, 57-59] To fit the work of this study's licensed independent practitioners, we also do not limit moral distress to situations when one's professional actions are constrained by others. [8, 9, 11]

Because our questionnaire addresses a variety of issues clinicians face during the pandemic and assesses issues for many disciplines working in many practice settings, we assess moral distress with a brief, single-item and unconstraining measurement tool, the visual analog Moral Distress Thermometer scale, which was developed and validated for hospital nurses by Wocial and Weaver and since also used with physicians.[5, 60, 61] Unlike the commonly used Moral Distress Scale-Revised and the Measure of Moral Distress for Healthcare Professionals, the Moral Distress Thermometer does not query and sum a list of specific morally distressing experiences clinicians may have had.[57-59, 62] We could not assume that a list of experiences previously generated for other disciplines and settings would appropriately, accurately and fully captured the issues that morally distress primary care, dental and behavioral health

clinicians working in outpatient settings for whom the causes of moral distress have been rarely assessed. In the questionnaire, clinicians were first presented with the following definition of moral distress: "*Moral distress occurs when you witness or do things, whether required by circumstances or not, that contradict your deeply held moral and ethical beliefs and expectations."* Immediately following this definition, participants were asked, *"How much moral distress have you experienced related to work during the pandemic?"*

Knowing that many clinicians would complete questionnaires on mobile phones with their small screens, we collapsed the Moral Distress Thermometer's original, 11 vertically numbered response options that would not fit on some screens to a more compact 6 response options, while retaining the original 6 response anchors (none, mild, uncomfortable, distressing, intense, worst possible).[63] We omitted the thermometer image displayed along the response scale because we felt not all disciplines would relate to it (N.B., the original Moral Distress Scale, on which the Moral Distress Thermometer was based, was set on a bookmark image).[60] The next, open-ended question in the questionnaire asked participants: *"What specific issues or events caused you most moral distress during the pandemic?"*, with clinicians able to identify the issues they felt caused them moral distress within the definition presented.

Public involvement

Health workforce office leaders of the 20 states with clinicians participating in this study provided consent for their state's participation and assisted in recruiting clinicians' participation, and two assisted as coauthors. Twenty-six clinicians working in safety net practices pilot tested the survey instrument. All clinician participants will receive a copy of this paper.

Analysis

Descriptive statistics characterize respondents' demographics, disciplines and work settings. The percentage of respondents who reported various levels of moral distress are reported, with comparisons made across the three discipline groups (primary care, dental health and behavioral health) and the various types of practices where they worked (e.g., mental health facilities and rural health clinics). Assessments for statistically significant group differences in moral distress levels are made with the Complex Samples feature of SPSS (IBM Corporation; Armonk, NY, U.S.), a variant of the second-order Rao–Scott adjusted chi-square to account for clustering of the data because sometimes two or more

clinicians worked in the same practice.[64] The above demographic and moral distress level percentages are reported weighted for clinician subgroups that differed significantly in response rates, specifically clinicians' discipline group (behavioral health vs. primary care and dental health), the particular service program clinicians were participating in (NHSC LRP vs. joint state-federal LRPs vs. NHSC Rural Community LRP and states' service programs vs. NHSC Scholarship and NHSC Substance Use Disorder programs), and whether clinicians were participating in the service program at the time of the survey or had completed service within the preceding few months. Weights for the 20 strata varied from 0.62 to 1.40, and the calculated design effect due to weights was 1.037.

We conducted qualitative content analysis of clinicians' open-ended survey item responses to understand and categorize the issues and events they reported caused them most moral distress during the pandemic.[65] Three investigators initially read and discussed four batches of 100 responses to understand the types and range of issues that clinicians identified and how they framed them. Respondents generally indicated a moral issue (e.g., people not getting needed care or being put at greater risk of infection), the group that was harmed (e.g., patients, clinic staff or the public) and the person or entity said to be responsible for the harm (e.g., the respondent clinician, clinic staff or society), which we used as three properties in organizing codes. The three investigators then developed and refined a coding scheme by iteratively coding and discussing five additional batches of 70 to 100 responses by considering the range of issues that clinicians identified and classifying the types of issues. The final coding scheme included 28 codes that specified both the nature of the moral issue and the group affected. A separate set of 8 codes classified the identified responsible person or entity.

Coding was based on what respondents explicitly stated with minimal interpretation so as not to misconstrue clinicians' meaning in their often brief responses. Each clinician's comment was analyzed in its entirety and was assigned a moral issue and group affected code, and also a responsible party code for the person or entity said to be responsible for causing the morally distressing issue by compelling the morally distressing action or carrying out the distressing action, whichever was specified. More than one moral issue code and/or responsible party code was assigned for comments that included more than one type of moral issue and/or responsible party. Comments that noted multiple examples of the same moral issue and/or responsible party received a single moral issue code and/or single responsible party code.[66]

We applied this coding scheme to open-ended responses in a one-third sample of completed questionnaires, i.e., responses in every third group of 100 sequentially completed questionnaires. Two

investigators—a graduate student in a non-health field trained in qualitative research and a senior medical student with some content experience and knowledge but no prior familiarity with qualitative research—independently coded all responses. Inter-rater reliability assessed for responses from questionnaires not used in developing the coding scheme was acceptable for both moral issue and harmed group codes (kappa = 0.83, 95% CI, 0.80 – 0.86) and responsible person or entity codes (kappa = .83, 95% CI 0.79—0.86).[67] A third investigator, an experienced qualitative and quantitative researcher and clinician familiar with care in safety net practices and clinicians' issues there, identified coding differences, which were settled through a combination of discussion and consensus, majority rule, and relying on the third reviewer's insights.

To simplify presentation of findings, we combined codes that had few mentions and were conceptually similar to generate a more manageable set of 11 moral issue and affected group codes and 7 codes for the responsible party. Each moral issue and its most commonly identified responsible party(ies) are briefly explained and representative quotes provided aiming to convey both the most common and range of reported issues falling within each category of moral distress (fair dealing).[68] The number of mentions of issues falling into each category of moral distress/affected group and each category of responsible party, as well as their percent of all issues mentioned are presented to convey a sense of which issues are more versus less common for these clinicians.[65, 69] Statistical weights are not applied to these percentage estimates as precise extrapolation to a target sample is inappropriate in qualitative research.[70] Among respondents whose most distressing situation fell into each of the issue types, we also compare the percentage who reported higher levels of moral distress (i.e., distress levels of "distressing," "intense" or "worst possible").[65]

Microsoft Excel (Microsoft Corporation; Redman, WA) was used to manage data during coding of participants' typically brief responses with codes subsequently used in quantitative analyses (i.e., counts and group frequency comparisons).[71] Quantitative analyses were run with SPSS version 26. A *p*-value of 0.05 was set for statistical significance.

RESULTS

Of the 4,647 clinicians surveyed, 80 email addresses failed. Of the remaining 4,567 clinicians, 2,073 responded to the questionnaire including its item on degree of moral distress (45.6%). Most respondents (54.9%) were 35-49 years old, with one-third (30.4%) younger than 35 years and 14.6% 50

years or older. Nearly three-quarters (72.9%) were women, and most (60.2%) had children at home. A strong majority were White (81.0%), with fewer being Black or African American (6.8%), Asian (7.2%), and other or multiple races (5.0%). Hispanic ethnicity was reported by 9.8%.

Degree of moral distress

Among all respondents, the mean reported level of moral distress during the pandemic was 1.58, which is about midway between "mild" and "uncomfortable" on the six-point ordinal scale from "none" to "worst possible." A total of 28.4% reported that they experienced no moral distress, 44.8% reported "mild" or "uncomfortable" levels of moral distress, and 26.8% characterized their moral distress as "distressing," "intense" or "worst possible" (Table 1). Primary care, dental and behavioral health clinicians were similar in their proportions at these three grouped levels of moral distress (p=.28). Moral distress levels were also similar for clinicians working across the various types of safety net practices (p=.058).

Table 1. Reported degree of moral distress related to work experienced during the pandemic, by discipline and practice setting

		Degree of moral distress (Weighted %)		
	n	None (n=588)	Mild or Uncomfortable (n=931)	Distressing, Intense or Worst Possible (n=554)
All respondents	2,073	28.4%	44.8%	26.8%
Discipline				
Primary Care combined[1]	1,097	27.9%	45.1%	27.1%
Physician	354	27.6%	47.4%	25.0%
Physician Assistant	228	30.7%	45.1%	24.2%
Advanced Practice Nurse	515	26.7%	43.6%	29.6%
Dental Health combined	294	33.4%	43.1%	23.5%
Dentist	255	33.2%	44.2%	22.6%
Dental Hygienist	39	36.4%	36.4%	27.3%
Behavioral Health combined	682	26.9%	45.1%	28.0%
Licensed Professional Counselor	223	27.6%	43.3%	29.1%
Licensed Clinical Social Worker	241	25.0%	43.6%	31.4%
Psychologist	104	28.6%	46.9%	24.5%
Other Behavioral Health	114	28.4%	50.5%	21.1%
Practice Setting[2]				
FQHC-CHC	1,083	29.3%	44.2%	26.5%
Mental health or SUD facility	260	30.2%	45.5%	24.3%
Indian Health Service or tribal site	215	22.6%	45.7%	31.7%
Rural Health Clinic	145	30.7%	39.4%	29.9%
Correctional facility	41	12.8%	43.6%	43.6%
Other office-based site	296	30.4%	46.9%	22.7%
Hospital-based site	33	17.9%	60.7%	21.4%

Abbreviations: FQHC-CHC, Federally Qualified Health Center-Community Health Center; SUD, substance use disorder

[1] Second-order Rao–Scott adjusted chi-square test for differences in group proportions for the combined disciplines of the primary care, dental health and behavioral health groups, p=.28

[2] Second-order Rao–Scott adjusted chi-square test for differences in group proportions across 7 practice settings, p=.058

Reports of issues causing clinicians most moral distress

The 1,485 clinicians who reported experiencing moral distress during the pandemic were asked what specific issues or events caused them most moral distress: 1,168 (78.6%) provided open text responses. Responses varied in length from a single word (e.g., "Death") to several paragraphs. Of the 411 clinicians whose comments were randomly selected for qualitative analysis, 336 identified a single morally distressing issue and 75 identified two or more issues, generating a total of 508 mentions of issues for analysis.

Responsible persons and entities

In clinicians' descriptions of morally distressing issues that identified a person or party as responsible, it was most often clinicians themselves (31% of all issues mentioned) (Table 2). In most cases, these were situations where clinicians felt they had not provided needed care or had provided suboptimal care to patients because of the exigencies of the pandemic or the requirements of their practices. Clinicians' clinics or organizations were the second most commonly noted responsible party (15%), followed by government, politicians or society (14%), patients (3%), the public (3%), and clinic staff and/or administrators (3%). For one-third of the morally distressing issues reported, the responsible party was unclear or not identified. Many comments that did not identify a responsible party spoke of situations that were widely known to occur during the pandemic and have been frequently highlighted in the lay press, e.g., "*Patient dying alone*;" "*Watching outbreaks unfold in nursing homes*." The lack of a named responsible party in these situations was believed by coders to indicate that clinicians were not assigning responsibility to anything other than the pandemic itself.

Table 2. Persons or entities that clinician's comments identified as responsible for the issues they found most morally distressing (n=508 comments)

Responsible Person or Entity	Representative Comments
The clinician-respondent [n=159; 31% of all responsible parties]	*"Not being able to provide care of the same quality as pre-pandemic;" "having to cancel on clients to take care of myself;" "Being unable to treat patients in need because my clinic closed"*
The clinician's clinic or organization [n=74; 15% of all responsible parties]	*"My clinic wasn't telling staff or clients when there were positive covid cases in the building and i was told not to as well." "the conflict between organization pushing for in person visit when often telemedicine would be more appropriate;"*
Government/politicians/society [n=69; 14% of all responsible parties]	*"Poor handling of COVID at federal and state levels;" "the failure of presidential leadership;" "racism, hatred, lack of moral responsibility shown by others"*
Patients [n=16; 3% of all responsible parties]	*"Patients coming into the consult room and taking off their mask;" "patients dishonesty during screening process"*
The public [n=14; 3% of all responsible parties]	*"Lack of social responsibility of others to wear a mask;" "Anti-maskers/Conspiracy Theorists/ Anti-vaxxers"*
Clinic staff and/or administrator [n=13; 3% of all responsible parties]	*"Providers/staff not following COVID protocols;" "a decline in the medical staff treatment of some of the pts;" "My MA declining COVID testing . . . while family at home had COVID."*
Unspecified/unclear/other [n=163; 32% of all responsible parties]	*"My clients anxiety;" "Needless deaths;" "Potential to exposure;" "Forced lock downs. COVID screening and testing"*

Morally distressing issues

Table 3 presents the 11 categories that clinicians' reported morally distressing issues fell into, with representative verbatim comments. The percentage of each individual or entity identified as responsible for each of the morally distressing issues is shown in Figure 1. The percentage distribution of comments falling into the 11 categories of morally distressing issues was comparable for primary care, dental health and behavioral clinicians (p = .123), with one exception: compared to primary care and behavioral health clinicians, dental health clinicians more often reported issues related to risking infecting patients and clinic staff (17.0% vs. 35.1%, respectively; p = .005).

The 11 categories of morally distressing issues and common subcategories within each follow below.

1. Patients not receiving the best and/or needed care (Principal responsible party: the clinician-respondent (Figure 1)). This was the most commonly reported group of morally distressing issues, comprising 29% of all issues mentioned (Table 2). The limitations of telehealth and virtual care for patients were commonly mentioned, noting that they were often inadequate for appropriate care and posed a barrier to care for some patients.

> *"we've primarily done phone/telehealth. There are times I have anxiety related to "what if I've missed" something because I'm unable to see the person in full."* (Nurse practitioner, Oregon)
>
> "*Providing care by telephone. Don't feel that I can connect with clients in the same meaningful way*." (Physician, Alaska)
>
> *"Having to move patients to telehealth even though they themselves may not have the resources to access telehealth services."* (Licensed Professional Counselor, Minnesota)

Other clinicians expressed that various circumstances of the pandemic limited what they could do for patients.

> *"Not being able to provide care of the same quality as pre-pandemic."* (Nurse Practitioner, California)

Some clinicians noted that their clinic's decisions and protocols meant to limit COVID exposure to patients and staff or bolster practice finances affected patients' quality or access to care.

> *"Not being able to provide the care I'd like. Financial decisions negatively affecting patient care."* (Nurse Practitioner, Arizona)

Table 3. Categories of morally distressing issues with representative comments (n=508 comments)

Morally Distressing Issue Category	Representative Comments
Within the clinic	
Patients not receiving the best and/or needed care [n=145; 29% of all issues]	*"Performing telehealth visits that really require in person evaluation;" "Not having the resources to always help my patients;" "telling people they couldn't have dental care because it wasn't emergent;" "Not able to provide the quality of care I would like to"*
Risking infecting patients and/or clinic staff [n=97; 19% of all issues]	*"Worrying about infecting others with covid if i am asymptomatic;" "Had to reuse N95 mask for two to four weeks." "Assuring my family health with client's not following protocol (including masks);" "My clinic wasn't telling staff or clients when there were positive covid cases in the building and i was told not to as well."*
Abuse of staff or ignoring their needs [n=37; 7% of all issues]	*"Overworking staff;" "Lack of support/appreciation from administration;" "Lack of PTO being allowed;" "Feeling like my safety and the safety of my team is not a priority and we are not valued except to keep money coming in . . ."*
The suffering of patients [n=36; 7% of all issues]	*"Patients passing away from Covid, huge number of them infected;" "Increased use of drugs/alcohol as a coping mechanism by patients;" "Listening to patients who have been affected by the pandemic"*
The suffering of clinic staff [n=28; 6% of all issues]	*"Uncertainty of employment;" "Being unable to validate some of my team when they are struggling;" "Work stress;" "Colleagues getting sick or having family members die."*
Inequities for patients [n=8; 2% of all issues]	*"Seeing how my patient population has been disproportionately affected by illness and death because of socioeconomic issues;" "Seeing patients unable to get their healthcare needs met due to financial circumstances, inability to obtain health insurance, loss of income, etc.."*
Within the community	
Politics in the community [n=30; 6% of all issues]	*"Political approach to the pandemic;" "Politicians behavior, behavior of their supports;" "politics and collision with medicine/science"*
The suffering of people in the community [n=27; 5% of all issues]	*"Hearing or seeing others struggle;" "increase in poverty and suicides;" "Forced lock downs;" "knowing that elderly people in nursing homes were contracting and dying from the virus due to employees or family members infecting them. Very sad and irresponsible."*
Inequities and injustice within the community [n=25; 5% of all issues]	*"racial injustice, lack of access to healthcare;" "The disproportionate effect of COVID-19 on minority and impoverished communities;" "The ongoing racism and racial inequality experienced by BIPOC."*
Risking infecting people in the community [n=22; 4% of all issues]	*"Lack of community commitment for COVID safeguards;" "Lack of social responsibility of others to wear a mask;" "Lack of compliance with CDC recommendations in my community . . ."*
Unclear issues	
Unclear/uncertain/other issue [n=53; 10% of all issues]	*"My patients;" "Helping to run the COVID clinic;" "decisions made by management;" "Being asked to screen patients for covid symptoms despite no medical training;" "COVID 19 vaccines"*

2. Risking infection of patients and/or clinic staff (Principal responsible parties: the clinician-respondent and their clinic/organization). Comments related to circumstances that placed patients and clinic staff at risk of COVID infection were the second most common type mentioned (19% of total), and were the most frequently reported morally distressing issue for dental clinicians (35% of their comments). Shortages of personal protective equipment (PPE) were frequently mentioned, as was the importance of balancing patients' needs for in-person care with the infection risks this carried for them and clinic staff.

> *"Worrying about keeping my employees safe, versus the importance of client care."* (Licensed Clinical Social Worker, Oregon)

> *"Got infected with COVID and my wife got infected because I was exposed at work."* (Physician, North Dakota)

3. Abuse of staff and/or ignoring their needs (Principal responsible party: the clinic/organization). Some clinicians felt that their clinics made operational decisions without adequate regard for the effects on clinicians and other staff. Some felt their health was inadequately protected by their organizations and that their needs as people and employees were unheeded.

> *"All our manager and director seem to care about us making money and how many patients we see. I was having to balance being exposed to so many patients then going home to my family and potentially exposing them."* (Dentist, Arizona)

> *"Organization not properly testing or protecting employees. Not providing hazard pay [or] providing FMLA"* (Physician Assistant, South Carolina)

4. The suffering of patients (Principal responsible party: unspecified/unclear/other). Some clinicians noted the tragedy of the pandemic's toll on their patients' physical health, mental health, work and families, and how difficult it was for them, as their clinicians, to witness this.

> *"Seeing how it has impacted families in our clinic and feeling powerless to make meaningful change."* (Nurse Practitioner, North Carolina)

> *"More clients in crisis and dealing with high anxiety. There has been less access to resources and supports for them in the community, which leaves me feeling helpless as a clinician."* (Licensed Clinical Social Worker, Oregon)

5. The suffering of clinic staff (Principal responsible party: unspecified/unclear/other). Clinicians recounted illnesses among coworkers (e.g., *"My nurse dying from complications of Covid;" "Colleagues getting sick or having family members dies"*), and fears of illness for themselves. Others spoke of employment challenges (e.g., *"job security;" "partial lay off, decreased hours, having to find a new job for more income"*). Still others spoke of feeling overwhelmed (e.g., *"Continual stress buildup, fear of an unknown outcome;" "Juggling too much"*).

6. Inequities for patients (Principal responsible parties: unspecified/unclear/other and the government/politicians/society). A few clinicians remarked that their patients suffered disproportionately during the pandemic because they were a marginalized group, could not afford care, or there were no services available for them.

> *"Diagnosing patients experiencing homelessness with COVID and not being able to provide them with a safe place to isolate/recover."* (Physician, California)

The next four types of morally distressing issues listed below—encompassing 20% of all comments—occurred outside of clinicians' practices within their communities, states or nationally. These issues were not specifically noted to affect clinicians' patients or their care, but seemingly distressed clinicians given their knowledge of and concern about health, health care, public health, science and social justice. The government, politicians and society were frequently identified as causing these issues, but often the cause was unspecified or unclear.

7. Politics in the community (Principal responsible party: the government/politicians/society). Politics and politicalized issues—the elections, the politization of the pandemic, conflicts between people with different political views—were mentioned as morally distressing because they created conflict and upset society, and sometimes for how it affected clinicians' work and families.

> *"Anti-science movement, lack of leadership, CDC tarnished, politics, politization of health measures."* (Physician Assistant, North Carolina)

> *"The politicization of science and mask wearing has been very upsetting as it has put my life and my family's life at risk. . . . when these people get a severe toothache, they expect to be seen by a dentist, who's very life is put at risk by their anti-mask behaviors with I am put in a position to provide oral healthcare."* (Dentist, Nebraska)

8. The suffering of people in the community (Principal responsible party: unspecified/unclear/other). Mentions of the suffering of people in the community generally mirrored the suffering that other clinicians noted for their patients, including the pandemic's impact on people's physical health, mental health, and financial situations. A few comments were about community suffering due to public health measures and other government responses to the pandemic.

> *"The way we are handling "the numbers" as a nation, closing schools, putting child's development and wellbeing in danger . . . "* (Nurse Practitioner, Kentucky)

9. Inequities and injustice within the community (Principal responsible party: the government/politicians/society). The issues mentioned centered around racism and social injustice (*"BLM;" "George Floyd;" "racial injustice;" "racism"*) and disparities in health and health care (*"Exacerbation of health disparities;" "Witnessing health inequalities and disparities"*)

10. Risking infecting people in the community (Principal responsible party: various). Comments in this category uniformly spoke of people not wearing masks or otherwise failing to follow the CDC's protocols to mitigate the pandemic's spread. Some comments were about people showing no concern or sense of responsibility for one another.

> *"witnessing people not wear masks or following CDC guidelines"* (Dentist, Montana)

> *"Lack of concern of people for others' wellbeing (selfishness)*" (Physician, Arizona)

11. Unclear/uncertain/other issue (Principal responsible parties: various). Some comments were too brief and without sufficient details or context to know what specifically about the issue mentioned was morally distressing to the clinician. For example, the comment *"telehealth or phone"* might be intended to indicate the inadequacies of telehealth but alternatively that the practice could not offer telehealth.

Relationship between the moral distress issue cited and the amount of moral distress reported

Clinicians whose open-ended comments fell across the 11 categories of moral distressing issues varied in their likelihood of reporting a higher level—distressing, intense or worst possible—of distress, ranging from 29.7% to 62.5% (p = .001) (Figure 2). Clinicians most likely to rate their moral distress in the higher level range reported distressing issues in the categories of inequities for patients, abusing and/or ignoring the needs of clinic staff, and inequities within the community. Clinicians who least often rated

their moral distress in the higher range reported issues related to patients not receiving the best and/or needed care, an unclear/uncertain/other issue, and the suffering of clinic staff.

DISCUSSION

In this study of clinicians working in outpatient safety net practices of many types and locations in the U.S. during the first nine months of the COVID-19 pandemic, 71.6% reported experiencing moral distress related to their work. Most characterized their moral distress as "mild" or "uncomfortable," but one-quarter (26.8%) of all clinicians described their moral distress levels as "distressing," "intense" or "worst possible." Moral distress levels were similar for primary care, dental and behavioral health clinicians, and similar for clinicians working in the various types of safety net practices. Prior studies of other, principally hospital-based clinician groups have similarly found moral distress during the first year of the pandemic was mild for most.[4, 5, 72]

The most commonly mentioned issues that this study's clinicians found most morally distressing were when their patients were not receiving the best or all needed care and the infection risks faced by patients and staff within the clinic. Not providing best and all needed care were also issues that clinicians working in other settings found morally distressing during the pandemic.[4, 5, 10, 13] 20Among hospital-based clinicians, this was often from having little to offer critically ill COVID-infected patients early in the pandemic, shortages of ICU beds and respirators, and issues of fairness in rationing when local infection and hospitalization rates peaked. In contrast, this study's outpatient clinicians noted moral distress from suboptimal and limited care when offices closed completely early in the pandemic and then later reopened but for safety reasons restricted the types of care provided and numbers of patients seen, as well as from using telehealth even when clinicians felt it was inadequate for patients' needs. These operational changes were ubiquitous for U.S. outpatient practices during the pandemic's first year, including for the safety net practices where this study's clinicians worked.[47, 73-76]

Other things witnessed within offices during the pandemic that morally distressed clinicians included the suffering of patients and clinic staff and the mistreatment and abuse of staff. That outpatient clinicians' moral distress sometimes stemmed from observing the suffering and mistreatment of *staff* expands the understanding that moral distress from work for clinicians only occurs from actions affecting *patients* and their families. When at work clinicians are around both patients and coworkers, and both groups

have *moral standing*, that is their "interests matter intrinsically . . . in the moral assessment of actions and events."[77] Therefore, both groups can be morally wronged. Thus, it is not be surprising that clinicians can be morally distressed when their coworkers are treated unfairly or otherwise suffer, just as they can be morally distressed when these things happen to patients.

Previous studies and fixed-response option survey instruments of moral distress for clinicians have focused on issues occurring *within* health care settings, typically the hospital.[57, 58, 62] Clinicians in this study were presented with a definition of moral distress that did not limit it to the consequences of restricted actions, and through its open-ended, unconstrained query of perceived causes of moral distress during the pandemic clinicians reported many health-related issues occurring *outside* health care settings, such as people not wearing masks in public. The definition of moral distress provided to this study's clinicians specified distress from issues "related to work during the pandemic." It is likely that outpatient clinicians view the community's failure to heed public health mandates has been relevant to their work, as it affects local infection rates and, in turn, the number of infected patients they will see in the office, infection risks thereby faced by clinicians and staff, and their offices' ability to provide care to patients with other needs. Other clinicians reported moral distress from issues not even directly related to health, such as the pandemic's financial impact on families. These clinicians evidently found the pandemic's effects on non-health care related aspects of people's lives more morally distressing and thus more salient to report than its disruptions to the health and care of patients. It may also be that some clinicians simply had not read or heeded the definition of moral distress provided.

Within the common bioethical framework of principalism, not providing best or all needed care and infecting others violate clinicians' moral obligations of beneficence and non-maleficence, that is to help patients to the best of a clinicians' ability and to not cause them harm.[22, 78] These are also the two moral principles central in the original framing of moral distress among intensive care unit nurses, who can feel compelled to provide care to patients that they believe is futile or harmful.[79]

Some of the broader range of issues found morally distressing to this study's outpatient clinicians violate a third fundamental bioethical principle: justice. Injustices were observed during the pandemic when certain patient groups and communities faced barriers to care, health disparities, and social injustices. Significantly, clinicians' level of moral distress was more often in the high range for those who provided examples of inequities and other injustices for patients (62.5%) and within the community (69.0%) than among clinicians who cited examples of patients not receiving the best and all needed care (29.7%). The latter have been commonly mentioned sources of moral distress for clinicians during the pandemic, but

for these clinicians they were less often the cause of great moral distress.[12, 80, 81] It is not surprising that inequalities and other injustices can cause significant moral distress for clinicians working in safety net practices, who were motivated in their careers to care for patients facing economic, other social and geographic barriers to care, often for lower pay.

The fourth common bioethical principle, autonomy, was reflected in the comments of just a few clinicians who reported moral distress from the pandemic's public health mandates, such as the requirement to wear masks, that constrained individual freedoms.

In the morally distressing actions that clinicians themselves had carried out or failed to carry out, their words often indicated they felt compelled to do so, through statements like, "Not being able to provide care . . ." and "Being unable to treat patients . . .", often evidently forced by circumstances unavoidable in the pandemic. Some clinicians perceived the pandemic created conflicts between their individual-focused clinical ethics—making decisions that are best for patients as individuals and respecting their autonomy—and society's public-focused ethics, i.e., prioritizing the population's health and other needs.[6, 22] Some clinicians indicated that their clinic or its parent organization made decisions that caused their moral distress, most often policies perceived to pay inadequate attention to the needs of staff or that risked infecting clinic staff and patients. Some clinicians acknowledged the clash between their clinics' corporate values and clinicians' own better understanding and prioritization of people's health, safety and best care: "This company's ongoing quest to put profits over people." Even when clinicians viewed circumstances of the pandemic or their employers' decisions had compelled them to alter how many and which patients they saw and how care was provided, they sometimes overtly stated that they felt bad about their role in carrying out these altered care requirements, expressed in statements like "feeling like my work isn't enough, that my clients need more than I can give," and "feeling like I'm not adequately helping clients via telehealth."

In the absence of studies of moral distress among outpatient and safety net practice clinicians prior to the current pandemic, we cannot be certain that the distress measured here at nine months into the pandemic is greater than if measured in 2019 or earlier. But most issues these clinicians reported caused moral distress during the pandemic related directly or indirectly to the pandemic, thus their moral distress had likely increased during the pandemic. Their moral distress may have increased further since this late 2020/early 2021 survey, as vaccines have since become widely available but then shunned by many people, prolonging the pandemic and causing many needless deaths.[82]

This study has several important limitations. Its 45.8% response rate is strong for a survey of clinicians but can still allow response bias. This was addressed through statistical reweighting to the target study population in analyses of demographics and quantifying levels of moral distress. If response bias remained, it would have affected the levels of moral distress measured and group comparisons, but not likely the range of issues identified as morally distressing to these clinicians. The reported frequencies of the various types of morally distressing issues and responsible parties, derived from mentions in qualitative analyses, should be understood only to show the issues most and least commonly mentioned and not taken as meaningful frequency point estimates for the target population.[65, 69]

Clinicians' interpretation of the original single question Moral Distress Thermometer measurement tool and its adaptation for this study, as well as some other aspects of their validity, have not been assessed.[58] Further, relying on open-ended written response data gave us no opportunity to clarify clinicians' responses or allow us to understand the fuller context, meaning and significance of the issues they report. This should be addressed in future studies.

In terms of generalizability, this study assessed moral distress in a subset of U.S. safety net clinicians who participated in service-requiring education loan repayment and scholarship programs. Although this cohort is broad in its disciplines and in the types of safety net practices where clinicians work, its experiences may not fully reflect that of other clinicians working in their safety net practices, who are more likely to be older and in leadership positions because of their seniority. Some but not all studies of moral distress among critical care nurses find that nurses who are more experienced are less likely to experience moral distress. [83]

Conclusions and Implications

This study expands the understanding of the moral distress of clinicians during the COVID-19 pandemic beyond those working in hospitals by assessing moral distress among clinicians working in U.S. outpatient practices that focus on care for poor and otherwise socially vulnerable patients. It finds that most clinicians working in safety net practices experienced moral distress during the pandemic's first year, with one-quarter characterizing its intensity as "distressing" or greater. Moral distress frequently stemmed from the operational changes made by many U.S. practices in response to the pandemic, such as restricting services and the number of office appointments offered each day which delayed care for patients, and requiring virtual visits even when clinicians felt that face-to-face visits provided better

care. Within this unique population of clinicians whose work focuses on care for the poor, some reported that injustices observed for patients, staff and within the community caused them most moral distress during the pandemic, and these particular clinicians more often reported higher levels of moral distress. Other clinicians found the mistreatment and abuse of clinic staff during the pandemic most morally distressing. These findings expand the types of issues recognized as causing moral distress for clinicians beyond prior studies' focus on moral distress from care that does not best serve patients' needs. Future studies should assess whether other clinician groups, including those working in other types of outpatient practices and within hospitals, can also be morally distressed at work by mistreatment of healthcare staff and witnessing injustices.

Moral distress for clinicians during the COVID-19 pandemic has occurred alongside and contributed to their stresses from other sources and to their emotional exhaustion, adverse mental health and burnout.[4, 5, 15, 84-87] The consequences of moral distress for these safety net practice clinicians at the levels found and for the issues reported remains to be demonstrated but are likely meaningful: moral distress for clinicians in other settings is associated with disengagement from patients, poorer quality of care, and burnout.[13, 29-34] Of particular importance to the future staffing of safety net practices, clinicians morally distressed by perceived unjust or otherwise harmful policies made by their safety net practices may be more likely to join the "Great Resignation" and look for work elsewhere.[29, 30, 88, 89] On the other hand, clinicians' retention in their practices may not be affected when they are morally distressed by things perceived to be unavoidable during the pandemic or otherwise not due to their practices, especially if their experiences during the pandemic strengthened their sense of meaning in work and thus the importance of their jobs.[47, 87, 90]

Various approaches have been suggested to address moral distress among clinicians. Managers of outpatient practices should understand what moral distress means for clinicians and its importance to them, create supportive work environments, create ways for clinicians and staff to learn and talk about moral distress and safely raise morally distressing issues, identify and address any ongoing sources of moral distress, and provide clinicians with needed psychological support and time away from work.[10, 12, 87, 91, 92] Clinicians should be involved in operational decisions made during challenging times—indeed, all times—so that decisions can be informed by their perspectives and clinicians can better understand the choices available to their practices and reasoning behind the decisions made that affect them, their colleagues and their patients.

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Data availability statement Data are available on reasonable request. Access to deidentified, open text survey responses will be available 2 years after article publication to researchers who provide a methodologically sound proposal to achieve specific articulated aims. Proposals should be directed to the project's lead investigator (don_pathman@unc.edu). A data access agreement will be required that spells out the requester's data protection procedures, requirements to protect subject confidentiality, and that limits the use of data to the agreed upon purpose.

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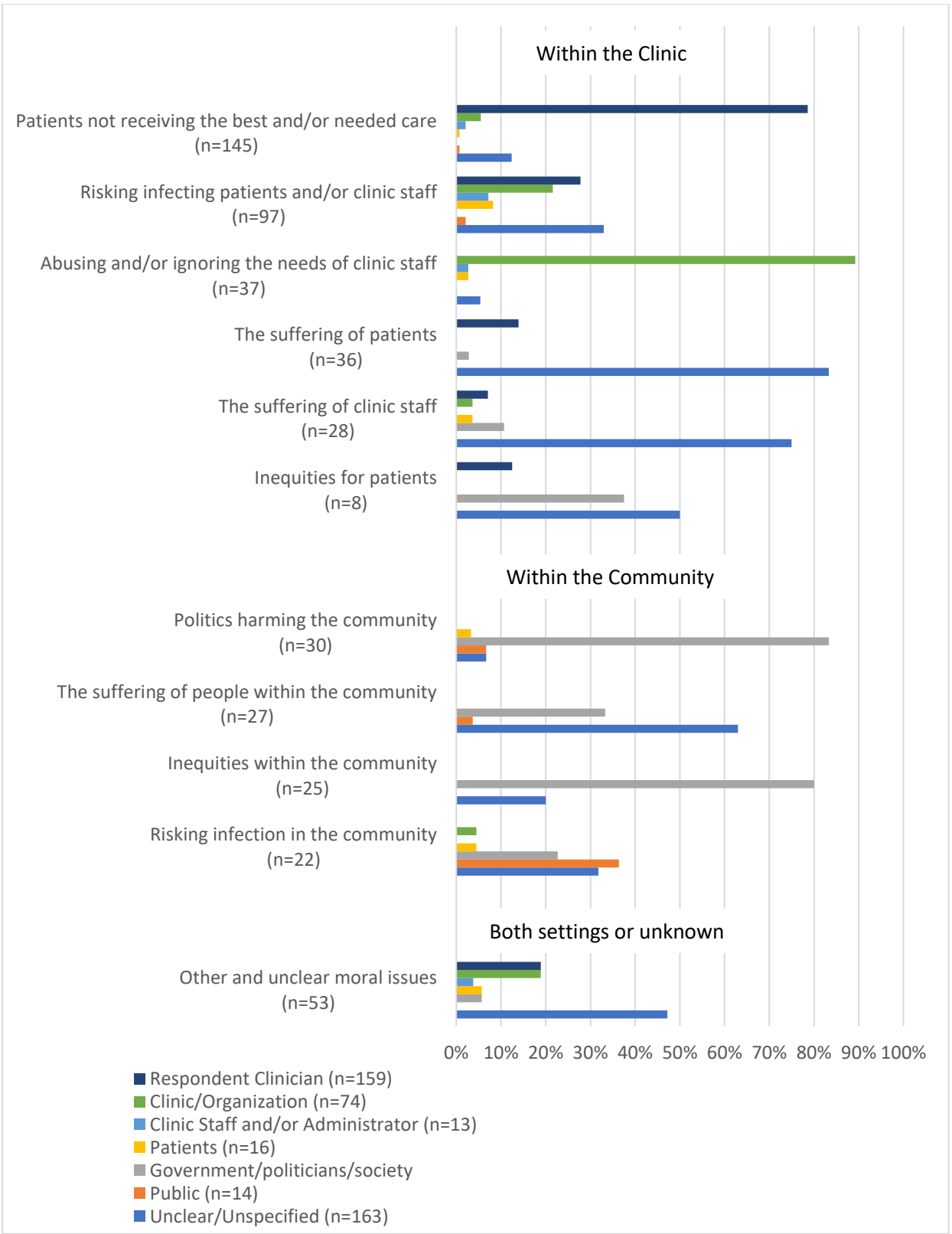
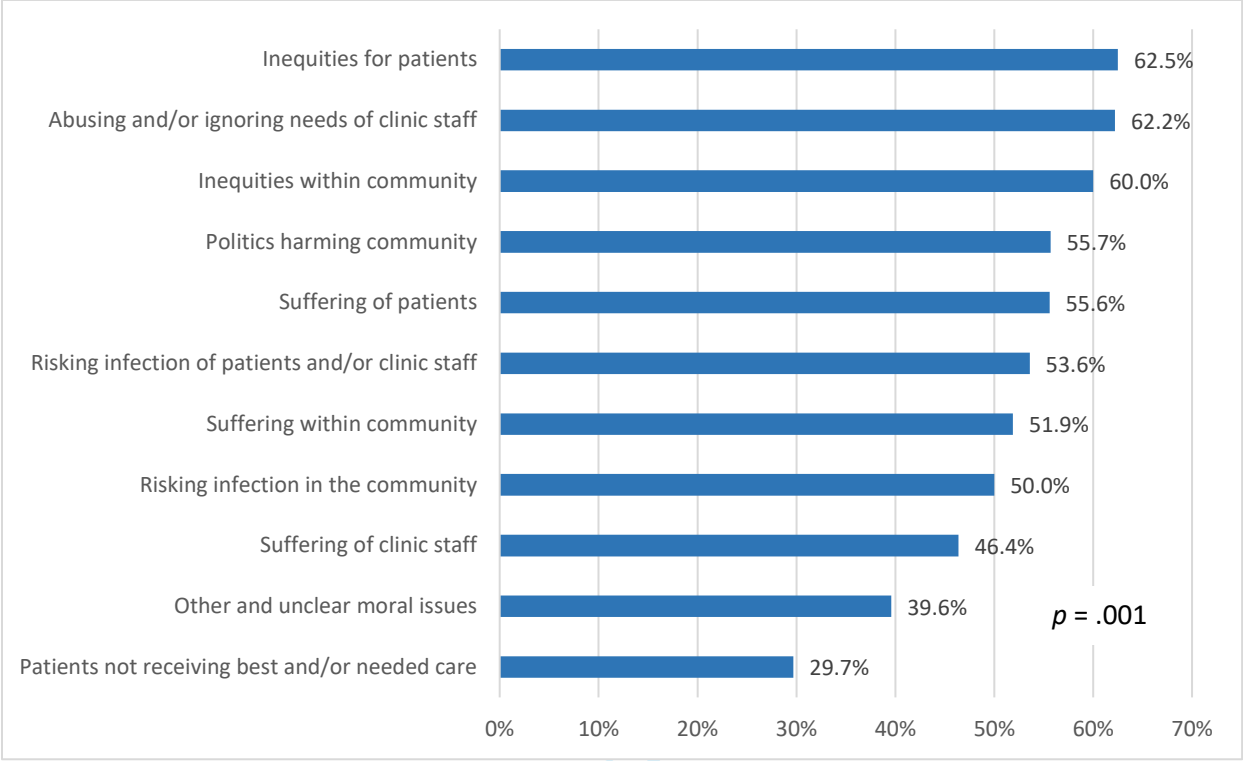
Figure legends

Figure 1. Responsible person or entity (%) identified for each morally distressing issue, n=508 issue mentions

Figure 2. Percentage of respondents who reported a distressing, intense or worst possible level of moral distress (vs. mild or uncomfortable level) among clinicians who reported each type of most morally distressing issue, n=508 issue mentions





Moral distress among clinicians working in U.S. safety net practices during the COVID-19 pandemic: A Mixed Methods Study

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation	Page, location
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1, title
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	2, abstract
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	5, top full paragraph
Methods			
Study design	4	Present key elements of study design early in the paper	5, first line of Methods
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5, last paragraph of Introduction 5-6, first three paragraphs of Methods
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	5, last paragraph of Introduction 5-6, first three paragraphs of Methods
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	5, top paragraph 6, Survey Instrument 6-8, "Moral distress measure"
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	6-8, "Moral distress measure"
Bias	9	Describe any efforts to address potential sources of bias	8-9, first paragraph of Analysis
Study size	10	Explain how the study size was arrived at	5, first line of Subjects. Survey included all eligible subjects in 40% of US states; no formal power analysis performed
Quantitative variables	11	Explain how quantitative variables were handled in the	8, first paragraph

		analyses. If applicable, describe which groupings were chosen and why	of Analysis; 9, third paragraph of Analysis
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	8, first paragraph of Analysis; 9, third paragraph of Analysis
		(*b*) Describe any methods used to examine subgroups and interactions	8, first line of Analysis
		(*c*) Explain how missing data were addressed	10, first line of Results. The few subjects with missing moral distress level values were counted as nonrespondents in response rate calculations
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	8, first paragraph of Analysis. We used Rao–Scott adjusted chi-square
		(*e*) Describe any sensitivity analyses	NA
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	10, first paragraph of Results; 13, "Reports of issues causing clinicians moral distress"
		(b) Give reasons for non-participation at each stage	NA—only "non-participation" is non-response, for which individuals' reasons are unknown
		(c) Consider use of a flow diagram	NA—simple cross-sectional survey
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	9, first paragraph of Results; Table 1
		(b) Indicate number of participants with missing data for each variable of interest	10, first line of Results. The few missing moral distress level values were treated as nonrespondents

			in response rate calculations; 13, first line of "Reports of issues causing clinicians most moral distress"
Outcome data	15*	Report numbers of outcome events or summary measures	10-11, "Degree of moral distress"
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	10-11, "Degree of moral distress"; No adjustments for confounding.
		(*b*) Report category boundaries when continuous variables were categorized	10, "Degree of moral distress"
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	NA
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	11 13 15, top paragraph 19 bottom paragraph through 10 top partial paragraph Figure 1 Figure 2
Discussion			
Key results	18	Summarise key results with reference to study objectives	20-22, first seven paragraphs of Discussion
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	22 bottom paragraph through 23 first two full paragraphs
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	2-22, first ten paragraphs of Discussion
Generalisability	21	Discuss the generalisability (external validity) of the study results	23, second full paragraph
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Reported in Funding

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Moral distress among clinicians working in U.S. safety net practices during the COVID-19 pandemic: A Mixed Methods Study

Standards for Reporting Qualitative Research checklist

No.	Topic	Page, location
	Title and Abstract	
S1	Title	1, Title
S2	Abstract	2, Abstract
	Introduction	
S3	Problem formulation	4, Introduction
S4	Purpose or research question	5, top full paragraph
	Methods	
S5	Qualitative approach and research paradigm	9-10, *We conducted qualitative content analysis of clinicians' open-ended survey item responses*
S6	Researcher characteristics and reflexivity	9 (bottom) through 10 (top) Reflexivity not explicitly reported
S7	Context	5, last paragraph of Introduction. 5, first paragraph of "Methods" Table 1, "Practice Setting"
S8	Sampling strategy	5, first paragraph of "Subjects," no sampling done for clinicians to be surveyed 9, last paragraph, *We applied this coding scheme to open-ended responses in a one-third sample of completed questionnaires, i.e., responses in every third group of 100 sequentially completed questionnaires*.
S9	Ethical issues pertaining to human subjects	6, "Research ethics approval"
S10	Data collection methods	6, second paragraph
S11	Data collection instruments and technologies	6, second paragraph and "Survey instrument"
S12	Units of study	8, last paragraph; 10, first full paragraph
S13	Data processing	NA. This study gathered electronic survey data (i.e., no need for recordings, transcripts, translation)
S14	Data analysis	8, last paragraph through page 10 first full paragraph
S15	Techniques to enhance trustworthiness	6, second full paragraph, subjects informed that *participation was voluntary and anonymous* 7, adapted a previously used instrument to measure clinicians' amount of moral distress 8 top, definition of moral distress was presented to subjects

		9-10 Independent and iterative approach to developing coding scheme. Independent coding by two researchers with differences settled by consensus, a third reviewer and/or majority rule Kappa's reported for inter-rater reliability, measured at 0.80 and 0.83 Fair dealing—quotes provided to reader to *convey both the most common and range of reported situations falling within each category of moral distress* (p 10) 15-17, linking findings to prior studies
Results/Findings		
S16	Synthesis and interpretation	10-14
S17	Links to empirical data	10-19 and Tables 2 and 3 provide many verbatim quotes representing common responses and the breadth or responses coded within each moral distress issue and each responsible party code
Discussion		
S18	Integration with prior work, implications, transferability and contributions to the field	20-17, first eleven paragraphs of Discussion 23, second paragraph, generalizability 23-24, "Conclusions and Implications" Transferability (equivalent to external validity in quantitative research) addressed within limitations, last paragraph before "Conclusions and Implications"
S19	Limitations	22 bottom through mid 23
Other		
S20	Conflicts of interest	Reported in "Competing Interests"
S21	Funding	Reported in "Funding"