Views from the trenches: California family physicians' challenges and resilience factors while providing patient care during the initial wave of COVID-19

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ABSTRACT

This study examined challenges and factors promoting resilience among 20 California family physicians (FPs) during the first six months of the COVID-19 pandemic. A subset of academic, community, and resident FPs who responded to an online survey also participated in a semi-structured interview that explored concerns, moral distress, burnout, resource needs, support systems, coping strategies, and motivation to continue caring for patients. Thematic analysis was used to identify common themes in participant interviews. Interviewees demonstrated adaptability, resilience, and grit (i.e., commitment to completing a valued goal in the face of setbacks and adversity) despite challenges disrupting patient care, fears for family and self, and frustration due to the politicization of the pandemic. Factors promoting well-being and perseverance included professional and personal support, strong coping skills, and focusing on the meaning derived from practicing medicine. A service orientation that permeates family medicine philosophy and values motivated practitioners to continue to provide patient care while dealing with overwhelming personal and structural challenges. FPs drew strength from their internal coping skills, core family medicine values, and external support, notwithstanding demoralizing effects of mixed messages and politicization of the pandemic. FPs demonstrated resilience and grit in the face of challenges created by the COVID-19 pandemic. Ensuring adequate resources to promote a physically and psychologically healthy workforce while increasing access to care for all patients is crucial to prepare for the next healthcare crisis.

Introduction

The first coronavirus case was recognized in the United States (US) on January 19th, 2020, and the World Health Organization (WHO) declared pandemic status on March 11, 2020. As of May 31, 2022, there were over 82.8 million infections and more than one million deaths reported in the United States. During most of 2020, the US recorded the highest number of daily cases in the world with a 1.8% case fatality rate per 100,000. By September 2020 (the endpoint of our study period), Califor-

nia—the most populous state in the US—reported almost 16,000 COVID-19-related deaths and 819,342 cases.[1]

During a pandemic, as in ordinary times, patients' first contact with the health system is usually through primary care.[2] Primary care clinicians (PCCs) include family physicians (FPs), pediatricians, general internists, geriatricians, obstetrician-gynecologists, as well as nurse practitioners and physician assistants who specialize in these five fields. PCCs are at the forefront of disease prevention and management, health promotion, and vaccine administration.[3,4] For example, PCCs were extensively involved with patient care and policy implementation in the 2009/A/H1N1 pandemic.[5] Within the PCC framework, FPs play a distinctive role as guardians of family and community health. FPs are often the first choice of access to primary healthcare by patients and families as they care for patients of all ages.

In the current COVID-19 pandemic, FPs serve as frontline clinicians, continuing to offer primary care while identifying and mitigating COVID-19 spread.[2,6] They provide essential healthcare access in health professional shortage and underserved areas, often acting as a "primary care safety net."[7] Black, Native American, Latinx populations, and individuals with lower education levels have experienced higher incidence and case-fatality rates of COVID-19,[8,9] and FPs often are these communities' primary healthcare resource. Thus, FPs are especially important to the pandemic response.

By December, 2020, California, which is home to the largest number of family physicians in the U.S., had become the epicenter of the COVID-19 pandemic, setting new records each week for number of cases.[10] Because FPs in California had such broad exposure to patients with COVID-19 during the first phase of the pandemic, we believe an analysis of their experiences will be of value to family doctors, other PCCs, and policymakers elsewhere.

A survey of PCCs' perceptions regarding the COVID-19 pandemic concluded that the U.S. has had a high level of pandemic politicization, in that its pandemic responses often seemed more driven by political perspectives than by medical facts.[11] The politicization of the pandemic, with its accompanying misinformation, disinformation, and cultural missteps exacerbated an already growing mistrust and resentment toward the healthcare system in recent years.[12] In some cases, this led to attacks on physicians conveying public health messages including publishing private information, armed protesters outside physicians' residences, vandalism, harassing telephone calls and social media posts, and threats of physical harm.[13] The politicization of a disease and resultant mistrust of physicians can be demoralizing for FPs who rely on trusting, long-term relationships with patients to deliver effective care.

To ensure that the primary care workforce is prepared for future pandemics, it is important to examine occupational challenges faced by PCCs on the front lines of the COVID-19 pandemic.[14] A recent study revealed that 51% of healthcare workers worldwide reported burnout during this pandemic.[15] FPs experience some of the highest rates of burnout, characterized by exhaustion, cynicism, depersonalization, and reduced job efficacy,[16] compared to other medical specialties.[17] Increased job stress has been shown to correlate with increasing burnout.[18] During the current pandemic, physicians have also experienced significant moral injury and distress which occurs when there has been a betrayal of "what's right" either by authority figures or by oneself.[19] For the purposes of this study, we define "moral distress" as any event with moral implications that results in psychological suffering for those experiencing it.[20] Yet in spite of moral distress and other stressors, some individuals exhibit resilience in the face of increased job demands and personal and professional concerns.[21]

To frame our investigation, we drew on two, then eventually three, theoretical frameworks. Stress and coping theory and resilience theory formed the basis for developing our question route. As we engaged with data analysis and interpretation, we added a third theoretical model—ethics of care—to help us better explain what participants' answers revealed about their motivation and commitment to care.

Stress and coping theory is a fundamental approach when investigating how individuals deal with distressing life events. Pioneering work of Lazarus and Folkman[22] found that psychological stress arises when a person appraises a situation as exceeding their internal and external resources and as posing a threat to their well-being.[23] In this model, coping is a constantly evolving behavioral and cognitive response to stressful situations. The theory acknowledges that there can be ongoing disruption to an individual's equilibrium resulting from persistent adversity, followed by continuous efforts to restore a steady emotional state.[24]

Coping consists of two primary dimensions: problem-focused coping (taking action to change the stressful environment) and emotion-focused coping (managing the emotional reactions to the stressor). Although research concluded that problem-focused coping was generally more effective and productive than emotion-focused coping, the theory allows for benefits from the latter, especially in circumstances in which the individual perceives that no positive action can be taken.[25]

In stress and coping theory, appraisal (how the individual assesses the situation) is central. Primary appraisal has to do with identifying the nature, meaning, and significance of an event. Secondary appraisal occurs when the person decides the event is stressful and then evaluates their internal coping resources (self-efficacy), external resources, and personal coping style (what they've done successfully in the past). Action to mobilize these resources is the result. An unsuccessful outcome requires further reappraisal and coping.[24]

Our study was also informed by resilience theory. We used as a guiding framework Masten's definition of resilience as "the capacity of a system to adapt successfully to significant challenges that threaten its function, viability, or development."[26] In general, resilience is understood as a state, not a trait.[27-29] Like the stress and coping model, resilience theory describes a dynamic process in which resilience may appear and disappear, and may manifest more in one area than another.[30,31] Resilience has been posited as an antidote to burnout,[32] a phenomenon which has taken a tremendous toll on the physician workforce.[33]

Resilience theory first emerged when researchers noted that while adversity acts as the trigger for emotional strain or tension, it can also result in increased adaptability and even growth.[34,35] In this sense, adversity becomes a necessary condition for resilience. This led to an interest in what factors caused people to manifest resilience. Van Breda posed the question: "Why, when people are exposed to the same stress which causes some to become ill, do some remain healthy?"[36] Resilience theory seeks to explain the balance between risk factors (low coping self-efficacy, cognitive inflexibility, poor emotional regulation, minimal social network) and protective factors (effective coping, realistic optimism, cognitive flexibility, effective emotional regulation, self-care, and a strong social network, including both familial and organizational support)[37] that enables individuals to regroup and recommit to positive action.[38]

In an insight of relevance to our inquiry, Lifton observed that when societal guardrails crumble—as happened during the early days of the pandemic— alienation and demoralization can occur that may heighten perceptions of adversity and the need for resilience.[39] Aldin concluded that severe stress can arise when there is a mismatch between stressors and culturally patterned coping responses[40] (such as the assumptions and routine practices embedded in the culture of medicine).

As part of this investigation, we wanted to identify factors that contributed not only to individual physician coping and resilience, but also to their "grit" in the face of unpredictable challenges. We define "resilience" as the ability to recover mental and physical equilibrium after experiencing adversity.[41] "Grit" refers to the perseverance and passion necessary to sustain commitment toward completing a specific endeavor despite episodes of failure, setbacks, and adversity.[42,43] We sought a more nuanced understanding of underlying contributors to the tenacity characteristic of both resilience and grit, which in these physicians manifested as a diligent sense of moral responsibility toward patients.

Stress, coping, and resilience theories focus almost exclusively on the *individual's* well-being.[44] However, the field of family medicine is grounded on principles of ethical, compassionate care not only for each patient, but for families and communities as well. For this reason, we felt that ethics of care theory would be relevant in understanding family physicians' motivations to continue working during the COVID-19 pandemic.

Ethics of care theory focuses on our relations with others, particularly when we have explicitly assumed the responsibility of caring for the other.[45] In ethics of care, the answer to the question "What should I do?" lies not in the individual or the group, but in relationships characterized by attentiveness and empathy. People in caring relationships are acting for "self-and-other together."[46] The interests of caregivers and care recipients are interrelated, not separate.

In contrast to ethical theories such as utilitarianism, deontology, and principalism that are based on universal obligations, care ethics focuses on the distinct responsibilities one person owes another as a result of specific circumstances (such as the therapeutic contract implied in the doctor-patient relationship). There are many arguments that an ethics of care cannot exist without considering the needs of disadvantaged, oppressed groups. For instance, newer formulations of ethics of care theory contend that responsibilities for care extend not only to individuals, but to communities and populations that have experienced historical discrimination. [47,48]

Based on our review of these three theoretical frameworks, the overall purpose of this study was to explore the resilience and motivations of frontline family physicians to continue patient care during the initial six months of the COVID-19 pandemic. Our first goal was to determine FPs' perceptions of adversity, i.e., the perceived stressors and concerns they experienced. Our next goal was to identify FPs' coping strategies in response to these stressors. Our third goal was to explore how these challenges influenced burnout and moral distress, thus potentially building resilience and grit to sustain patient care.

The study was exempt from Institutional Review Board oversight in accordance with the criteria outlined by the University of California Irvine IRB.

Materials and Methods

Subjects

This qualitative pilot study was based on a sample of 20 FPs practicing/training in California during the initial wave of the COVID-19 pandemic. The sample size was determined by theoretical and practical thematic saturation of the data.[49] Interviews took place from July to September 2020. Participants were recruited through professional email listservs by first being invited to respond to a brief survey questionnaire and then to participate in one 60-minute, semi-structured interview about their experiences and concerns when treating patients. Two hundred and nineteen individuals completed the survey, and 41 indicated a willingness to participate in the interview. After 20 interviews, we achieved thematic saturation and a balanced sample based on gender and prac-

tice settings (12 males, eight females, five academic, five community-based, and 10 resident FPs).

Data collection

We developed and used a semi-structured interview guide consisting of nine open-ended questions organized in a progressive sequence to ensure topics were addressed systematically across participants.[50-52] The research team developed questions based on our literature review and clinical experiences (see Appendix). The team piloted and modified interview questions as a result of feedback from three resident and faculty volunteers. Questions prompted participants' personal and professional concerns and challenges when treating patients during the pandemic, how the pandemic affected their relationships with patients and family members, the extent to which the pandemic had affected their well-being, and sources of burden, burnout, and moral distress. We also queried participants about support, coping strategies, and motivation to continue patient care as well as their recommendations for support and resources from their health system, residency, public health, and government leaders.

Procedures

The interviewing team consisted of a medical/PhD student, seven other medical students, and four undergraduate, pre-health professional students. Eight of the researchers were female. All interviewers participated in two 60-minute training sessions on conducting a semi-structured interview over Zoom and received training materials including a summary of key points about interviewing, such as how to paraphrase, clarify, and use probes. Readings and Zoom discussions addressed issues of reflexivity. For example, during Zoom discussions, we noted that because the team consisted of students aspiring to careers in healthcare, they might be more likely to view participants positively and interpret their statements in the most favorable light. This reflexive self-awareness was intended to help interviewers be more thoughtful about how they interpreted participants' answers. The interviewing team was supervised by an academic family physician and a psychologist faculty member.

Prior to their interviews, participants were guaranteed anonymity; participants' names and all other identifying and contact information were eliminated from the interview data transcription. Interviewers also stated that participation was voluntary, and participants could at any time stop the interview and/or refuse to answer any question. Interviewers also obtained verbal consent to record the interview, and only the audio portion was recorded. Interviewers built rapport by identifying themselves as medical or pre-health professional students committed to healthcare and eager to understand the impact of the pandemic on FPs. They emphasized the value of learning about the experiences and stories of FPs working on the frontlines

during the pandemic to inform future efforts. Participants were interviewed from their homes or clinics.

After obtaining consent, a pair of researchers interviewed each participant. Only the researchers and the respective participant were present on Zoom. One researcher led the interview while the other took detailed notes. Definitions of terms (e.g., "burnout," "moral distress") were provided in the survey that all participants completed prior to the interview, and clarifications were given during the interview if requested. The two interviewers debriefed with each other after each interview to clarify and reflect on the interaction.

Anonymized transcripts were generated automatically from Zoom technology and reviewed by interviewers to correct errors in transcription. Team members performed ongoing review of interviews and made minor adjustments to subsequent interviews. Data collection was terminated when thematic saturation was achieved, i.e., when interviewers determined that no new information was being obtained through the interview process.

Data analysis and interpretation

Data analysis followed the steps of thematic analysis.[53,54] The research team familiarized itself with the data by listening to the audio recordings and having all transcribed data reviewed by the research sub-teams. These sub-teams first generated initial codes independently for recurring topics represented in their assigned transcripts. Afterward, they compared notes with their partner and created a unified summary of initial codes. Faculty researchers reviewed, compared, and modified these initial codes across sub-teams and shared them with the larger group. This comparative process enabled us to identify new codes that all sub-team pairs could subsequently use to recode earlier transcripts and apply to new transcripts.

Next, the research team worked together to identify sub-themes based on the codes that linked concepts across codes. Sub-themes were subsequently categorized using an axial coding approach based on emergent interrelationships and patterns. The team addressed intercoder reliability by discussing any disagreements until these were resolved. Relationships among these themes provided the basis for a conceptual model (see Figure 1). Throughout this research, we created an audit trail consisting of field notes and team meeting summaries.

Results

Adversity and appraisal

Participants experienced the initial phase of the pandemic as stressful, disorienting, and frustrating. Although initial concerns varied somewhat among resident, academic, and community physicians, there was widespread confusion and stress. Participants voiced fears that California would replicate the explosion of cases and deaths

elsewhere. One participant asked, "Would we have to run the hospital like an apocalyptic setting?" Referencing the overwhelmed physicians on the East Coast, another participant recalled, "[We worried] we would be expected to work like New Yorkers."

Residents experienced confusion and frustration due to a lack of clear guidance. Examples included not knowing whether to wear masks and being pulled from outpatient training to do inpatient work. Participants in all groups expressed anxiety regarding their unknown future. A community physician commented that "The toughest day emotionally was at the very beginning when none of us knew what was going to happen."

FPs expressed widespread concern for their patients because of inadequate knowledge about COVID-19, inequities in access to care, and reduced access to usual primary care services. They voiced significant trepidation about their patients' well-being and health outcomes, often accompanied by a sense of helplessness in the face of limited COVID-19 treatment options. An academic physician said, "It's just supportive care. [We're] waiting and hoping that patients don't get sicker around day eight to 10."

Some FPs disclosed anxiety about economic and racial inequities exacerbated by the pandemic:

We have patients [who] rely on health insurance that's largely provided by their employers when… businesses are letting people go and unemploy-

ment is skyrocketing. [This pandemic] exposes the limitations of the health system.

Others worried about patients who suffered from chronic diseases delaying routine care,

That's when we start to see people come into the hospital with bad exacerbations of their chronic disease. Because they weren't going to see their doctor or clinic. They weren't coming to the hospital when they initially needed to.

Concerns about vulnerable patients and communities were a manifestation of the FPs' dedication to underserved populations who often had special difficulty managing persistent medical conditions because of physical and psychological constraints imposed by the pandemic.

Professional, financial, and educational concerns were also expressed. Several participants mentioned fears for the health of colleagues and staff, for example: "I worry more about exposure to our staff members who may be coming in asymptomatic or pre-symptomatic actually." Both community and academic physicians discussed apprehension about financial impacts of the pandemic. Patients were reluctant to see their doctors for fear of contracting COVID-19, so the assumptions on which the financial health of many practices were based simply dissolved. Community physicians, in particular, feared their practices closing or being laid off.
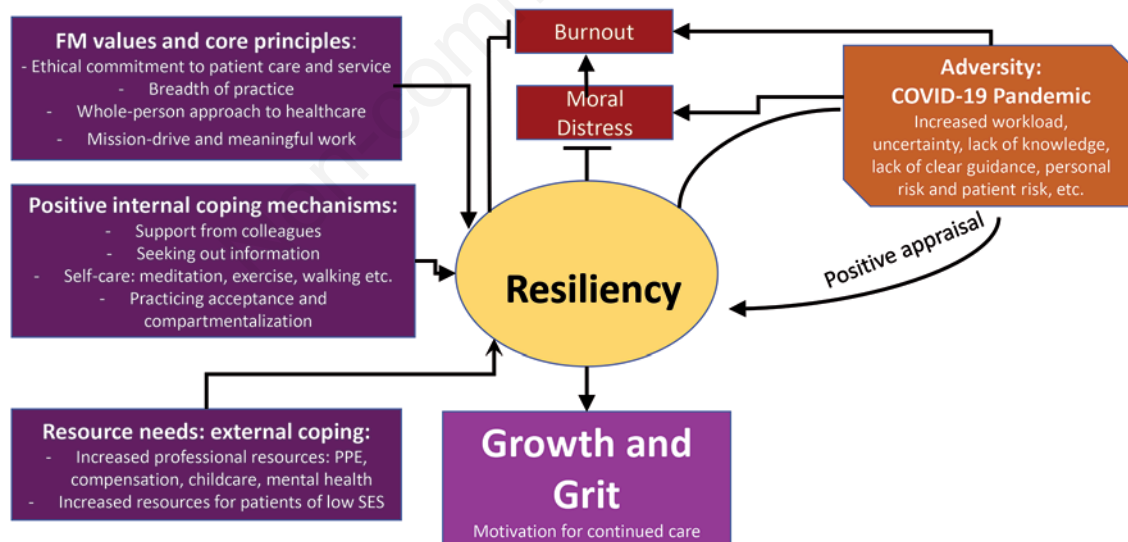
Conceptual Model of Family Medicine Physician's Resiliency, Growth and Grit During the Initial Phase of COVID-19 in California: purple boxes: contributors to resiliency included family medicine (FM) values and principles, internal coping mechanisms, and external resources. Resiliency, defined as "the capacity of a system to adapt successfully to significant challenges that threaten its function, viability, or development" (Masten, 2018), was theorized to protect against burnout both directly and indirectly by safeguarding against moral distress. Resiliency through positive appraisal of adversity contributed to post-traumatic growth and grit manifesting as continued motivation for patient care.

Symbols: ➡ : contributing to, ⊣ :inhibiting

Figure 1. Adversity, coping, support and motivation toward resilience influencing California family physicians' capacity to continue caring for patients during the early phase of the COVID-19 pandemic.

Most residents, and some academic physicians, were concerned that resident education would be negatively affected by the pandemic because of altered responsibilities and inadequate exposure to a variety of patients. In the words of one academic physician, "The teaching component of our practice was hindered." From the resident perspective, one trainee stated:

[The pandemic] affects the medical education process. We may not be able to complete our residency or may have to travel somewhere else to get a particular rotation. [I worry] how it's going to affect my residency training.

As priorities shifted to caring for as many patients as possible, the pre-pandemic scope of training became a secondary consideration.

Personal concerns regarding contracting COVID-19 and spreading it to family members and loved ones also surfaced. FPs' primary worry was that they could potentially infect family members, and almost all participants mentioned taking special precautions to remove hospital clothing or even moving to another residence: "[It's] bringing the virus home, especially with having two kids and a wife." Some feared contracting the disease themselves. One resident described this worry as: "[You] just feel like you're still naked, despite wearing all those protective measures." Although a few participants were not concerned because they were healthy and young or had already contracted and recovered from COVID-19, worries about transmitting or contracting COVID-19 created conflicts between participants' personal and work lives.

Moral distress

FPs' feelings of frustration regarding people not adhering to public health guidelines, politicization of the pandemic, and inadequate production and distribution of PPE were pervasive and intense. Participants' common reactions to adversities triggered by the pandemic were discomfort, disbelief, and outright anger resulting at times in moral distress. As one participant explained, "It's just nuts to be a medical person and see that there is so little respect for science."

Nearly all participants expressed frustration at some people's unwillingness to take the disease seriously or their skepticism regarding the reality of the pandemic, "It's been frustrating watching individuals who have not taken scientists and public health officials seriously. I think it's, you know, directly contributed to a lot of unnecessary suffering and death."

One physician summed up the mask controversy as "just infuriating, absurd." Several physicians shared their perceptions that people were acting selfishly. One community physician complained, "People care so much just about themselves that they show no regard for other people." Another physician noted:

You look at people in the community, and they're just ignoring it. They're putting their family members at risk. They're putting other people in the community at risk. They're putting healthcare providers at great risk.

A few physicians were disappointed with patients who did not disclose their COVID-19-positive status prior to visits or, conversely, with patients who reported symptoms just to get COVID-19 testing. Participants expressed a break in trust between the physician and patient due to such patient behaviors. In one case, the patient did not inform the doctor of his COVID-19 diagnosis until after the physical exam: "It took everything not to come down on him and to be supportive, but that hurt. [I]t shows a total lack of respect and consideration." Another participant commented similarly:

And then they start lying. And I would say that probably about a third of the COVID tests I've ordered are based on patients lying to me, and I've never felt that so strongly before that patients are lying to me, just to get what they want.

These quotes illustrate that FPs found the relational disruption that occurred in some cases during the pandemic to be especially demoralizing and hard to accept.

Yet this disgruntlement, although widespread, was not a uniform reaction. Other physicians showed surprising tolerance in the face of deceptive or thoughtless patient actions. As one FP reported:

I think it would be easier if they would just wear masks, but I also think we have to somehow communicate that in a better way than just like mask shaming them and just yelling "Hey, wear a mask" because, like, their concerns are valid in a sense.

Responses such as this one demonstrate that while some participants were disillusioned in response to patient behavior, others were more sanguine about maintaining a therapeutic relationship.

Almost all participants forcefully conveyed their exasperation that, months into the pandemic, the country had been unable to ramp up testing and production of PPE. In the words of one irritated participant, "Limited cooperation among people in different cities and states and in different types of leadership around the country, you know, varying politicization of the pandemic was very frustrating." Another physician blamed lack of leadership from the top: "When we have the commander in chief really not guiding the public, that drives me bonkers."

FPs communicated pervasive disappointment and anger at the prevalence of misinformation, lack of clear guidance or uniform policies from the federal government, as well as a sense of disillusionment at the inade-

quacies of our public health system's response. In another example, a participant stated, "They're not able to see through the politics to see that this is a public health problem." A different participant expressed their frustration as:

> When it comes to advising people about their health and about what they can do to prevent the spread of the virus, I think we have really suffered from not having a united voice.

On many occasions, most participants declared a sense of betrayal at the inadequate national response to the pandemic.

Burnout *vs.* resilience

Participants described their initial reactions to the pandemic as concern, fear, frustration, and anger. While the majority appraised their abilities to respond to the situation positively and reacted with resilience, some responded with an intensification of burnout, both independent of and associated with moral distress.

Increased burnout among residents and attending physicians was attributed to increased workload and feelings of lack of trust from patients. An FP put it this way: "It's [the pandemic] taken over all of our lives. I mean, I think it's extremely negative, really." Although residents tended to refer to stress more than burnout, we sometimes could infer the presence of the latter because of intense negative emotions they expressed during their interviews. A different participant stated, "It's [the pandemic] draining your energy, not just physically, but emotionally and mentally; it's draining you out." Overall, residents expressed more burnout than faculty and felt the pandemic was a significant contributor.

A few physicians in practice reported that their burnout was worsening because of the pandemic. Several noted they were more burned-out early in the pandemic, but they learned to accept the new status quo by establishing "a new normal." Women FPs were more likely to express burnout than men; they tended to highlight the pressures of clinical and administrative work and the lack of time for self-care and work-life balance as causes.

Despite increased job demands and pressures leading to feelings of burnout, growth through resilience was the dominant response for a majority of participants. Some participants said that they had not experienced burnout at all. Several alluded to the inherent satisfaction of their work and appreciation from patients as being protective against burnout, for example, "Joy will protect against burnout, even if you're working hard." One resident asserted, "[I'm] going on with my life the way that my life would have gone on, essentially, even if there wasn't a pandemic."

Participants overall perceived themselves as resilient. They cited their ability to adapt to telehealth, applying new technology that required reconfiguring the nature of doctor-patient communication. A few physicians did share frustrations regarding their inability to physically examine patients, for instance: "I mean, it's a real art to it [clinical medicine], and it's difficult with these new barriers to establish rapport with a new patient." However, others observed that telehealth promoted greater connectedness with enhanced access and opportunities to observe patients in their homes. Several noted that they were impressed with their own and their colleagues' flexibility, adaptability, and ease of adjustment to this new reality. One FP summed up this sentiment as, "A lot of people have done a lot of great work adapting to a very difficult situation."

Other examples of adaptability included adjusting to new work schedules and assuming new roles. These FPs shared how their breadth of knowledge and scope of practice enabled them to quickly pivot to alleviate burdens on emergency and critical care colleagues. Overall, although the pandemic intensified burnout for some, especially residents, for most, the focus was on resilience and adaptability.

Achieving and maintaining resilience

Participants described the support they received and their coping strategies (both problem-focused and positive emotion-focused) that fostered their resilience. Sharing with colleagues, improving patient care, spending time with family, and engaging in self-care were important means of problem-focused coping, while cognitive strategies to manage negative emotions were examples of emotion-focused coping. Participants acknowledged talking with colleagues as an important form of coping: "It's sharing, sharing our thoughts and feelings with each other, with the residents and just making sure we take care of ourselves." A community physician mentioned the importance of support from other physicians: "I have some really, really, really great [physician] friends and we spend a lot of time talking and texting and calling each other. So that is definitely how I decompress."

Several residents also reported developing more meaningful connections with co-residents due to the pandemic. One noted, "Everybody in my residency, from residents to faculty from the hospital, they're very, very supportive. So I think that just makes a difference." Another said, "I actually feel like I've connected with more people in a deeper level this year than any other year." Other participants expressed similar feelings about how much they relied on colleagues who were also living through the challenges of the pandemic.

Family and friends served as confidants to discuss stress in the workplace. Participants often commented that spending time with family, playing with their children, and sharing experiences with friends and partners was rejuvenating: "I know there was someone inside the house that I can talk to. It makes you forget even temporarily the stress of going to work, especially now with the pandemic." Another physician commented, "I feel very calm. I am fortunate. I really have strong supportive friends, a

very strong supportive family, and my husband really helps out. My kids all help out."

Despite limited time for self-care due to pandemic-related increased workload, most participants were tenacious about making their own well-being a priority through deliberate activities. Several FPs used the internet to stream exercise classes, watch videos, and participate in online clubs. One talked enthusiastically about studying a second language: "I started learning Italian on Duo Lingo. [It] kept me sane by doing something completely different." Another shared, "I'm staying really busy with projects around the house."

Participating in outdoor activities such as walks with family and/or friends and gardening was also mentioned: "…looking at butterflies…I'm a sun person so I sit in the yard." Similarly, another participant noted, "I try to walk every day. I'm also trying to work on strength, flexibility. [A]side from physical fitness, there's also a kind of emotional fitness." Other self-care practices included meditation, journaling, sleeping, cooking, housework, walking, praying, reconnecting with old hobbies and trying new things: "Trying to develop more of a prayer life because that I think helps me connect - why it is I'm doing what I'm doing, why is it that this is all happening."

Others discovered that focusing on improving clinical care reduced their feelings of helplessness: "I think just being able to develop a new way of delivering medicine is a coping strategy." Several participants spent time seeking out reliable sources for COVID-19 news updates so they could give patients trustworthy information. Still others used the pandemic as an opportunity to build on existing programs: "We're trying to work on actually a whole new health program at our rehab place." In this way, work itself became a refuge for many of these physicians.

FPs applied cognitive coping strategies such as acceptance, gratitude, and compartmentalization to regulate negative emotions. Many physicians reflected on how their attitudes and coping strategies helped to foster resilience. "I've become a lot more emotionally resilient," said one. Some described the value of cultivating acceptance of factors beyond their control, for example: "I've had to learn to accept the uncertainty." Several shared their ability to "turn it off" by taking time for themselves. Some consciously meditated on gratitude for family and their work: "Medicine is a very rewarding, very reinforcing profession. There's a lot of gratitude that's expressed [by patients to their physicians]."

In addition to behavioral and cognitive coping, participants also appreciated institutional efforts to provide support. Physicians working at larger institutions felt more supported compared to physicians working as solo practitioners or in small practices. Understandably, community physicians in private practices often felt they had to cope with the pandemic on their own. Among those who did feel satisfied with their professional organization's pandemic response, town halls for listening to employee concerns, providing education and PPE, and offering mental health resources were mentioned as essential in supporting participants to maintain resilience. Most participants felt that their institutions supported them by providing information and being transparent about the evolving situation:

> Honestly, in the beginning when they were doing all the feed the front lines and all that. That was amazing. It really showed how much the community supported us as a whole.

Most agreed their organizations were safeguarding them by doing their best to obtain adequate PPE (although this was not always successful) and promoting their well-being through mental health services and accommodations, as one participant explained: "It's reassuring that we have support from the medical center to try to continue to adapt to the changes we face and the support to adjust our practices." Another commented, "Our hospital has done a really good job, especially in the more recent months to secure more PPE for us." A resident affirmed, "I've been well supported in my mental health by my residency program... frequent check-ins [with staff mental health providers]." In some training settings, FP attendings assumed responsibility for providing care to patients with COVID-19, resulting in several residents feeling protected by their programs. All these examples show that effective institutional support gave participants the sense they were not alone in fighting the pandemic.

Service orientation

Responses to questions about coping and social support helped us understand what enabled these FPs to react with resilience. However, it required a deeper perspective to grasp factors contributing to the grit, courage, resolve, and strength of character they exhibited in the face of highly distressing and helplessness-inducing circumstances. FPs' motivations included a moral imperative as participants described an ethical responsibility to continue patient care. This ethical commitment was rooted primarily in the values and principles of their specialty.

Utilizing a whole-person approach to healthcare enabled these FPs to feel prepared to tackle pandemic challenges. A majority emphasized prioritizing a patient-centered orientation that ensured continuity and participation in the entire trajectory of COVID-19- patient care, from outpatient to hospital and home. The following quote illustrates this point well:

> We are already in the mindset of thinking about population level issues. We're used to thinking about what happens to patients outside the hospital. I think we're used to being a little bit more creative when it comes to dealing with case management social work issues.

Family physicians are trained to think holistically about patients, both when they are hospitalized and when they return to their families and communities. This commitment to continuity is what guarantees that the patient is always placed at the center of care.

Participants also noted mutual trust and shared decision-making as sustaining FM core principles. FPs commented on the importance of adaptability and flexibility: "Family physicians are pretty flexible. We're used to meeting our patients where they are." Listening to patients' perspectives and fears and the ability to extend empathy, compassion, and understanding to patients who were unable to adhere to recommendations were guiding principles that participants mentioned, for example:

> To know them as a primary care doctor, it's great and really rewarding to see people and get to know them over years and take care of them and be able to earn their trust and then give recommendations to improve their health when they're doing well, when they're doing poorly.

The overarching commitment to patient-centered medicine for all patients proved to be a critical factor in these physicians' ability to dedicate themselves to continued practice even under very difficult circumstances.

Physicians were motivated by their determination to provide care especially during times of need. As one doctor said, "I took an oath," thus emphasizing the sacred nature of their responsibility toward patients. Others refocused on their early altruistic motivations for choosing medicine. Several physicians pointed out that being an FP was not about becoming wealthy: "Most family medicine physicians aren't doing it for the money. We're doing it because we want to help." Rather, they felt it was about caring for people when vulnerable: "You share a lot of very personal, very intimate often challenging situations with your patients over the years." In the words of another participant, "In primary care, you stay together, and you build relationships over time."

Duty and feelings of responsibility were powerful drivers: "This is exactly what we signed up for. I cringe when people say we're doing something heroic." Another demurred, "I'm just doing what I was trained to do." Many emphasized their sense of accountability: "It's just kind of our duty as physicians to step up to the plate and do what we can." Because of their professional values, these doctors did not hesitate to take part in pandemic response efforts: "I tend to get busy doing what needs to be done." One resident shared that they were fulfilling a dream and felt privileged to serve their community:

> If you really enjoy medicine and you really like being there for people, then in a situation like this where people really need you, then it's just more

affirming, it's challenging, stressful, but it's also reaffirming, reassuring.

Another resident expressed a similar sentiment:

> Our hands were overworked, and we had a lot of things to do, but at the same time, that doesn't mean I'm going to lose my joyfulness. I'm just going to try and be happy.

This sense of joy in the practice of family medicine, previously noted in relation to ameliorating burnout, was an important part of their motivation toward service.

One physician remarked that it was the "brilliance and resilience of my colleagues" that motivated him to care for patients with COVID-19. Others noted the benefits of feeling part of a group collectively striving to overcome a dangerous disease:

> We didn't sign up for this specific virus necessarily, but we signed up for work that potentially has put us at risk for different, you know, contagious diseases like this, so I'm willing to do the work.

Such statements suggest that, although cognizant of the enormous stresses under which they were operating, these FPs experienced serving their patients and being part of a team as highly meaningful and rewarding.

Many physicians were inspired by the gratitude of their patients, for instance: "It's scary to have a lot of fear with being on the front. But I also feel the appreciation that you never did before." One noted that gratefulness from patients was stronger than ever and kept them going. A slightly different aspect of patient appreciation took this form: "The pandemic gave doctors a sense of importance and increased motivation by feeling valued for their skills." Another stressed the generosity of patients even in such difficult times: "If you keep your focus on your patients, it's really difficult not to feel rewarded because patients are very giving." These and similar quotes suggest that, for these physicians, medicine is a calling, the ethical responsibility they felt toward serving others, and patients' appreciation helped sustain their continued commitment to patient care.

Resource needs

While participants prioritized the influence of their intrinsic values and commitment to service that attracted them to family medicine, they also recognized that to help mitigate burnout, they required additional external resources. Recommended resources included enhanced support for frontline clinicians and their patients, for example: "And then even when the tests get turned around, they just haven't had the resources to contact patients with results." Several participants were concerned

about the need for improved resources for patients with low socioeconomic status, as one explained:

> When that [treatment and testing] is available, without a system to ensure people get access to that. We have some limitations and problems in our [healthcare] system that have been exposed by this.

Recommendations also emphasized working toward a more comprehensive and equitable healthcare system, such as providing free masks and mental health services. Some participants also suggested additional financial and training resources to ensure that all patients have access to telehealth and to accessible, affordable, and reliable testing. In addition, they suggested improvements to reporting and following patients with positive COVID-19 results: "Better testing, better centralized information, better reporting on the number of cases." Many expressed the need for accurate information about COVID-19 and best practices to share with their patients.

Participants noted how their patients' care could benefit from additional professional resources: "[We need] resources, materials, and some additional funding to help offset the loss in revenue." The need for increased financial support for primary care, especially during times of reduced revenues, was on the minds of both academic and community physicians, for example: "A monetary investment in primary care is needed so that you can afford to continue to provide care for patients with chronic medical conditions." Other suggestions included more accessible and timely information for frontline physicians and a secure supply chain of equipment:

> If I had one resource that had everything that I need to know repository for COVID-19 information that would help not just me, but the rest of the healthcare organization period, including the public.

Another FP expressed her frustration about the lack of PPE:

> I just think we deserve… How can they not supply us with more PPE? Do they even care about our safety if they can't provide us with the proper…. I just wish they would provide us with more masks.

Participants also endorsed the need for strong public health leadership and policies—"I think we have really suffered from not having a united voice on that [pandemic response]" —and improved health education for the public:

> Repeated [public health] education [is essential], even for those people who are denying the existence of [this virus]. If you repeat that information to them that this virus is real and this infection is

real and can kill. [I'm] just hoping it will be instilled in their mind that this virus is not a joke.

Some advocated for mandates to promote public compliance with mitigation measures such as masking. Beyond public health education, FPs recommended stronger science education. One participant, for instance, mentioned school programs for children:

> I think, down the road, what this tells us is that we need to really bolster scientific education in schools for kids so that they understand the scientific method and that will help them become more flexible mentally in the future.

Residents requested resources including mental health and other support. Some mentioned that they or their peers had sought counseling and would benefit from improved access to mental health services: "Yeah, so the mental health counseling. I think that's the biggest one." Other residents called for hardship benefits and loan forgiveness, for example: "There needs to be more said in terms of whether maybe loan forgiveness or reimbursement in support of telehealth." Still others focused on expanding residency resources to support career progression during a pandemic: "Virtual interviewing versus how to even find a job versus the financial education piece on that." Concern regarding future employment was a salient theme:

> I think especially because there's this added stress right now that COVID has really changed the landscape of the job market or changed a lot of things still even for our graduating class, potentially. And so, there's a lot of just extra anxiety with that.

As demonstrated by this remark and others like it, while FPs served their patients with dedication and loyalty, they noted their work could be better supported with additional resources. Residents, in particular, called for increased resources, benefits, and assurances about their futures.

Discussion

This study provides an in-depth review of California FPs' experiences and reactions during the first six months of the COVID-19 pandemic. FPs experienced initial fear, confusion, and vulnerability; subsequently, they demonstrated the grit and resilience necessary to care for patients during tumultuous times. Underpinning this response was participants' sense of moral responsibility toward their patients. The study also identifies various ways in which the healthcare system might better support primary care physicians and patients during future public health disasters.

Prior research suggests that the stressors clinicians experienced in this study were similar to those reported

in a study of nearly 3000 health workers in 60 countries practicing during the COVID-19 pandemic.[15] Challenges identified in this study were also similar to those experienced by health workers during the 2009A/H1N1 pandemic in Israel, Australia, and England. Then, as now, clinicians struggled with PPE shortages, uncertainties in knowledge, conflicting information from multiple sources, and limited communication from the frontlines to authorities.[55] Challenges unique to the COVID-19 pandemic in the US included a high level of politicization and inconsistent public health messages not evidenced in these earlier studies. These differences generated confusion and mistrust of the medical and scientific communities as well as frustration, anger, and disappointment in physicians.

As posited by stress and coping theory, physicians in this study experienced extremely stressful circumstances given the threat to their own and their family members' health prior to the availability of vaccines. During stressful circumstances, it is understandable for overwhelmed physicians to question whether their work is worth the risk, yet we found the opposite. Most physicians in this study demonstrated resilience and grit in the face of unexpected challenges. Most quickly adjusted to unfamiliar protocols and clinical practices, notably telehealth. Most described problem-focused coping (e.g., seeking information, securing PPE, implementing telehealth) and emotion-focused coping strategies (e.g., practicing meditation, acceptance, and gratitude) in response to the stress. These coping mechanisms along with participants' reports of continued motivation to care for patients and, in most cases, avoid burnout demonstrate how FPs built resilience and grit during this time of increased demand on their external and internal resources.

This remarkable persistence in caring for patients was rooted in a strong sense of ethics of care[45] prevalent among FPs. Ethics of care theory emphasizes the relational rather than the individual nature of human existence.[56] It is notable that FPs in this study expressed many concerns that were relational in nature. Participants feared for their patients and for their own families. Some expressed anger towards the government and some members of the public rooted in a sense that many people no longer seemed to have confidence in the mutual relationship of trust that forms the core of family medicine. Even in voicing personal concerns, such as feelings of helplessness and fears about their own health, these FPs were aware of the potential negative implications for their patients.

Every one of these physicians was inspired by core values of family medicine such as cultivating therapeutic relationships with patients, compassionate listening, and shared decision making that can also be understood within an ethics of care framework. These core values assuaged their frustrations and enabled them to continue caring for patients.[57] Many reported positive feelings of connection

and satisfaction from providing meaningful, life-saving services. Additionally, they felt that their job duties aligned with strongly held values about providing healthcare for patients in difficult circumstances and times of great need. In a further example of how an ethics of care supported their ongoing work, when participants made suggestions for additional resources, these were primarily directed toward supporting their patients and themselves so that they could continue to provide optimal care, especially for patients in disadvantaged communities.

Conceptual model

As a result of this work, we formulated a conceptual model representing the various patterns and relationships we discovered (Figure 1). In this model, the adversity of the COVID-19 pandemic was a stressor that could lead to either resilience, post-traumatic growth and grit, and/or moral distress and burnout. Negative appraisals, characterized by significant personal and professional concerns and fears, contributed to burnout and moral distress for some FPs. However, a majority of FPs positively appraised the challenges to focus on problem solving and self-preservation. This required ingenuity, adaptation, restructuring clinical responsibilities, and resilience. FPs' resilience was buoyed by their own values, the values of family medicine, and tangible support from employers, co-workers, families, and friends.

Triangulation with quantitative study

Comparing our qualitative findings with the results from our large quantitative survey (in submission) revealed differences and commonalities. One unexpected finding is that interview participants reported less burnout than the subjects in the quantitative survey. This may have been because acknowledging burnout in a face-to-face interview might be more difficult than in an anonymous survey. Also, whereas moral distress and burnout were related in the survey results, often the interviewed participants demonstrated high resilience in the face of moral distress, i.e., participants often reported high levels of disappointment and anger *and* described themselves as engaging in many self-preserving behaviors. We conclude that this finding of low burnout in the face of high moral distress resulted from the ways in which participants had metabolized an ethics of care philosophy into their practice of medicine.

As noted, we also found parallels with the quantitative results. For example, women in both the qualitative and quantitative arms tended to mention burnout more frequently than men. Further, when comparing the surveys to the interviews, we found that those in both groups demonstrating resilience were more likely to report employer support, self-care, and personal wellness practices. Finally, both qualitative and quantitative results identified significant frustrations with lack of PPE.

Strengths and limitations

To the researchers' knowledge, this is the first study of its kind to directly investigate the personal experiences of FPs throughout the state of California by in-depth interviews during the early COVID-19 pandemic. As noted, because of California FPs' extensive exposure to patients with COVID-19, this one-of-a-kind information should be especially valuable to other PCCs and policymakers. The study contributes new knowledge about how these FPs' core values and commitments to the doctor-patient relationship promoted their resilience and motivation to sustain patient care. In addition, the study's distinctive three-part theoretical foundation (stress and coping theory, resilience theory, and ethics of care theory) provides nuanced insights into relationships among its various themes.

In terms of our methodological rigor, we accomplished theoretical triangulation by drawing on three different theoretical models to interpret our results. We also had triangulation of methods in that we were able to compare our qualitative findings with the results of the quantitative arm of the study. Finally, we benefitted from researcher triangulation, in that we had individuals with epidemiological, psychological, and medical training involved in the research, as well as researchers at different levels of training, including undergraduate, medical student, resident, and academic faculty. Since many of the investigators were affiliated with a department of family medicine they were easily able to establish rapport with the interviewees, thus increasing the likelihood of candor

On the other hand, convenience sampling is a limitation of the present study design, given the possibility of sampling bias toward motivated participants possibly impacting internal validity and skewing results toward positive responses. Another limitation was that we conducted only a single interview with each participant. Out of respect for participants' overwhelming clinical demands as well as multiple other personal and professional obligations, we decided not to make further demands on their time. For this reason, we did not return transcripts to participants for review, which may have precluded them from modifying, changing, or adding to their initial responses. However, the context of the interviews was informal and expansive, and the question route readily allowed for opportunities to modify or change responses.

Although only 20 interviews were conducted, we did achieve theoretical saturation of the data in that interviewers judged that no new information or themes were emerging during the final interviews. It is also true that the study was conducted during the first six months of the pandemic. Thus, our findings pertain only to this initial phase, and their relevance to other phases of in the pandemic would need to be further studied. For example, as time went on, the pandemic has had an increasingly negative impact on physicians' well-being.[58]

A final note is that almost all of our interviewees practiced primarily in outpatient settings, typical of a majority of FPs. As such, this study did not explore the experiences of physicians practicing primarily in inpatient settings where patients' suffering and deaths without family support triggered additional moral distress.[59]

Conclusions

This qualitative study describes the challenges, coping strategies and motivations of 20 California FPs practicing during the early phase of the COVID-19 pandemic. FPs will continue to play vital roles in providing access to primary healthcare and caring for patients during the COVID-19 pandemic. This study demonstrates the dedication, resilience, and grit of FPs by serving their patients and communities despite personal risks and professional uncertainties. It identifies important resources to promote well-being and job satisfaction at times of intense stress and job strain. Furthermore, this study underscores the importance of supportive working environments to ensure a physically and mentally healthy frontline workforce during future public health emergencies. We hope these findings will inform future training and practice. Future research, both qualitative and quantitative, can build on this foundation, continuing to pursue questions of how frontline physicians cope with the extraordinary stressors of pandemic conditions and what sustains them ethically in this essential work.

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