






Exploring rural doctors' early experiences of coping with the emerging COVID-19 pandemic

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Abstract

Purpose: To understand how rural doctors (physicians) responded to the emerging COVID-19 pandemic and their strategies for coping.

Methods: Early in the pandemic doctors (physicians) who practise rural and remote medicine were invited to participate through existing rural doctors' networks. Thirteen semi-structured interviews were conducted with rural doctors from 11 countries. Interviews were transcribed verbatim and coded using NVivo. A thematic analysis was used to identify common ideas and narratives.

Findings: Participants' accounts described highly adaptable and resourceful responses to address the crisis. Rapid changes to organizational and clinical practices were implemented, at a time of uncertainty, anxiety, and fear, and with limited information and resources. Strong relationships and commitment to their colleagues and communities were integral to shaping and sustaining these doctors' responses. We identified five common themes underpinning rural doctors' shared experiences: (1) caring for patients in a context of uncertainty, fear, and anxiety; (2) practical solutions through improvising and being resourceful; (3) gaining community trust and cooperation; (4) adapting to unrelenting pressures; and (5) reaffirming commitments. These themes are discussed in relation to the Lazarus and Folkman stress and coping model.

Conclusions: With limited resources and support, these rural doctors' practical responses to the COVID-19 crisis underscore strong problem-focused coping strategies and shared commitments to their communities, patients, and colleagues. They drew support from sharing experiences with peers (emotion-focused coping) and finding positive meanings in their experiences (meaning-based coping). The psychosocial impact on rural doctors working at the limits of their adaptive resources is an ongoing concern.

KEYWORDS

coping strategies, COVID-19 pandemic, rural physicians

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INTRODUCTION

The emergence of the COVID-19 global pandemic in early 2020 created unprecedented challenges for doctors (physicians), particularly in under-resourced health care systems ill-prepared for such a crisis.¹⁻⁵ Frontline rural health care workers (HCWs) often faced the complexities of a previously unknown disease with minimal resources and training, and substantial risk of self-exposure.⁶ The combined stressors of increased workload, risk of infection, and fear of exposing their families led to a heightened risk of psychological distress among HCWs.⁷ Parallels can be drawn with the severe acute respiratory syndrome (SARS) epidemic that affected 29 different countries in 2002-2004. SARS resulted in high rates of infection⁸ and profound mental health impacts among HCWs, including high levels of fear and anxiety, uncertainty, work stress, and even stigma.⁹⁻¹¹ Long-term effects of burnout, psychological distress, and post-traumatic stress were reported among HCWs who cared for SARS patients.¹² It is likely that these effects are compounded for rural doctors working in relative professional isolation, who may not have access to specialized support and services.

To date, most studies of the impacts and experiences of COVID-19 on HCWs have been based in tertiary hospitals in major cities.¹⁻⁵ This exploratory study seeks to understand the experiences of doctors in small rural communities, where the context is different from tertiary medical practice. In previous work, we have explored rural doctors' lived experiences when working at the limits of their scope of practice to provide the medical care needed by their community—a concept we refer to as clinical courage.¹³ Building on that knowledge, we focus here on how rural doctors in different countries have responded to the emerging COVID-19 pandemic.

METHODS

The study design was undertaken from a constructivist epistemology which positions meaning as socially constructed and shared between participant and researcher.

Recruitment

Rural doctors (physicians) were invited to participate via emails distributed to World Organisation of Family Doctors (WONCA) Working Party on Rural Practice and the Society of Rural Physicians of Canada email lists. A number of authors are active members of these rural online networks. Cohort diversity was sought across gender, self-reported stage of career, and geographical location of practice. This was consistent with our aim to understand the experiences of doctors in small rural communities, where the context is different from tertiary medical practice. Even across diverse geographical settings, rural doctors share the experience of working in relative professional isolation, without access to specialized support and services. As an international research group, we were able to use our affiliations with international

rural networks to facilitate recruitment. Inclusion criteria included: currently practising as a rural doctor; having experience preparing for or managing patients with COVID-19; and having a proficiency in spoken English.

Data collection

Semi-structured interviews were undertaken by Zoom video conference and recorded with participant's consent. The interviewers (IC, LW, DC, and JK) were experienced rural doctors. This contributed to recruitment opportunities through online networks, building rapport and trust during the interviews and brought an informed insider stance to this study. The team also included a nonclinical researcher to provide an external perspective during data analysis. The interview questions (Box 1) explored the participants' stories of preparing for and managing COVID-19 in their community, their strategies for coping during this time, and their perceptions about drawing upon clinical courage.¹³ The focus of this paper is the shared understanding of coping strategies of rural doctors while preparing for or managing COVID-19; their perceptions about clinical courage will be explored separately.

1. Tell me a bit about yourself and your current rural practice.
2. What has your experience been of preparing for or managing COVID-19 in your community?
3. Can you describe a time during the COVID-19 pandemic when you have had to draw upon your own clinical courage or where you have witnessed a rural colleague draw on their own clinical courage?
4. What lessons have you learnt about clinical courage with these recent experiences?
5. In our research to date, we have found 6 features of clinical courage. They are: standing up to serve anybody and everybody in the community; accepting uncertainty and persistently seeking to prepare; deliberately understanding and marshalling resources in the context; humbly seeking to know one's own limits; clearing the cognitive hurdle when something needs to be done for your patient; collegial support to stand up again. How do these features resonate for you?
6. How are you looking after yourself? What are your coping strategies?
7. What support would be helpful?
8. What lessons have you learnt dealing with COVID-19?

Interviews were conducted from October to December 2020 and were between 25- and 77-minutes duration. Recordings were fully transcribed, deidentified, returned to participants for confirmation, and imported into NVivo 12 (QSR International Pty Ltd., Doncaster, Australia). We paused data collection after 13 interviews and based on our analysis at that stage, we decided that further data collection was

not required. This was informed by two considerations: (1) the information power and richness of the accounts, which had allowed us to identify common themes that were well-supported by the existing interview data; and (2) the likely shift in doctors' experiences and narratives as the pandemic had quickly evolved from being an emerging clinical issue.

Analysis

A thematic analysis was used to identify common ideas and narratives across the interviews.¹⁴ Transcripts were examined by the group to identify initial codes, categories, and develop an initial coding index.¹⁵ Two researchers then reviewed each transcript to assign the data to codes and categories, and key themes were identified by constantly comparing transcripts, recognizing patterns and associations.¹⁵ The group reflected back on the original data to check participant accounts were accurately represented in the final themes. Finally, we sought participants' feedback on our preliminary results to confirm that quotes were taken in context. Several participants responded with positive feedback that supported our interpretations. An example is included in the results.

Ethics approval

Ethics approval was granted by the University of Adelaide Human Research Ethics Committee (Project number H-2020-168).

RESULTS

The sample comprised early-career, mid-career, and experienced rural doctors from 11 countries, as shown in Table 1. At the time of this study, COVID-19 had reached all these countries with varying impacts. Rural doctors' experiences were clearly influenced by their specific contexts and cultures, but our analysis identified five common themes: caring for patients in a context of uncertainty, fear, and anxiety; practical solutions through improvising and being resourceful; gaining community trust and cooperation; adapting to unrelenting pressures; and reaffirming commitments. These themes, with supporting participant quotes, are described in the following sections.

Theme 1. Caring for patients in a context of uncertainty, fear, and anxiety

Due to the rapid global spread of COVID-19, rural doctors often felt underprepared to tackle community transmission and manage patients with the disease. The uncertainty from feeling isolated, in terms of access to credible information and resources, left doctors with feelings of fear and anxiety, and a sense of not being in control as multiple problems were encountered. These feelings were exacerbated by a lack of

personal protective equipment (PPE), limited COVID-19 testing, rapid system changes, possible COVID-19 positive patients turning up unexpectedly, and the flood of media exposure.

"initially, I went into panic mode." (01 Zimbabwe)

"It felt like we were constantly not knowing what was going to happen next. We did whatever we could, but we kept having obstacles that we hadn't anticipated. And every time we found another one, we had to make a new plan. And it just felt like a continuous thing. It felt like we were constantly chasing our own tail." (11 South Africa)

In this context, doctors were continuously appraising the risk to themselves and their families when treating COVID-19 patients.

In this period I had tested myself twice for antibodies and I was sure I had it and I must be positive because I was coming across so many patients with COVID-19 but I'm still negative and I'm still scared and still worried but it's how things are going on in my country. (12 Pakistan)

Even my staff are really scared about what will happen to us especially because – the nature of our work would require us to handle these patients. So, I had to like sit down with them and talk with them, process the emotions that we're having during that time. I really had to talk with them about that because I realized that during that time, we were really fearful about, mainly because of our families, the people that we love and care about who might get sick because of the nature of the work that we do. (09 Philippines)

The extent of fear and anxiety was also clear in narratives about some doctors or HCWs who avoided treating COVID-19 patients. Conversely, many stories described a commitment to patient care, regardless of the risks.

The worst day was when basically our nurses walked off the job, and the clinical team ended up doing everything from preparing supper in the kitchen to changing bedpans and dressings in the ward. That was a really low day for me, but, yes, I've subsequently read just about every single hospital had, at least, one day like that. A day of reckoning. (05 South Africa)

Why did you put yourself at risk?...It was just the obvious thing to do. I'm here as a doctor, that's my job and of course, I'm, going to do that. (04 Australia)

TABLE 1 Participants' characteristics and geographical contexts

Country	Participants--rural doctors/physicians (n)	National daily new COVID-19 cases (per million) ^a		World Bank Income level ^b
		October 1, 2020	December 31, 2020	
Australia	Experienced male (2)	0.6	0.8	High
Bosnia and Herzegovina	Experienced male (1)	62.7	117.6	Upper-middle
Democratic Republic of Congo (DRC)	Mid-career male (1)	0.2	2.1	Low
New Zealand	Experienced female (1)	0.5	1.0	High
Nigeria	Experienced male (1)	0.8	3.8	Lower-middle
Pakistan	Experienced male (1)	2.8	9.5	Lower-middle
Philippines	Early-career female (1)	22.3	10.7	Lower-middle
South Africa	Experienced male (1) Mid-career female (1)	21.5	211.0	Upper-middle
Thailand	Experienced male (1)	0.1	2.3	Upper-middle
Wales (UK)	Early-career female (1)	91.9	630.6	High
Zimbabwe	Early-career female (1)	0.9	10.2	Lower-middle

^aSource: Our World in Data. Daily new confirmed COVID-19 cases per million people (7-day rolling average). Due to limited testing, the number of confirmed cases is lower than the true number of infections.

https://ourworldindata.org/explorers/coronavirus-data-explorer?tab=map&zoomToSelection=true&time=2020-12-31&facet=none&pickerSort=asc&pickerMetric=location&hideControls=true&Metric=Confirmed_cases&Interval=7-day_rolling_average&Relative_to_Population=true&Align_outbreaks=false.

^bWorld Bank. World Bank Country and Lending Groups.

<https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

After an initial shortage, doctors were inundated with changing information in relation to acute management and public health messages, which presented an additional burden.

“At first, we didn’t have enough information. Then, on the other side of the spectrum there was too much information. (02 Bosnia)

After that, we started seeing patients that came in with more severe disease. We started to see patients dying for the first time, and this was a new disease. We were watching webinars to find out how we’re supposed to treat them, and trying to distinguish what’s the real information from the misinformation. You hear the stories, this person is using this protocol, and it’s working. And you read about, oh now it’s actually a coagulation problem. We need to be giving anticoagulation. So we were working at the government hospital, we’ve got one GP in town. And you know we were saying, “We’ve got to stick to the protocols.” He was saying, “No, let’s try chloroquine. Let’s give everyone aspirin.” (11 South Africa)

Theme 2. Practical solutions through improvising and being resourceful

In many areas of the world, travel lock downs delayed the spread of the virus to rural areas, providing some additional time to prepare. Doctors led local system changes, such as a labor ward being converted to a COVID clinic and primary care unit; a school being converted to a quarantine center. They improvised protective equipment, including masks and face shields. Some rural services struggled to access basic PPE, testing kits, hand sanitizer dispensers, and oxygen concentrators.

the workshop guys were busy welding together hand sanitizer bottles and bottle holders and putting them up on the wall.... we prepared a COVID-19 area where we would see patients ... we got a security guard to start screening people we thought, well, we’re going to have to start testing at some point. Initially, we didn’t even have test kits, so we didn’t know what we were going to do with the patients we actually suspected of COVID-19. (11 South Africa)

So we turned labor ward into a COVID clinic, and we had an emergency medicine guy come out and he told

us about having red zones, amber zones, green zones; where green you can do anything, amber is where you're donning and doffing, and red is COVID positive. ... I think the thing we did there was actually say instead of just having a testing clinic where you get a swab up the nose, we provided full general practice. (07 Australia)

Rotating teams of HCWs provided some respite and avoided all staff being exposed with subsequent service collapse.

We hoped that by then, they come, it's their turn to work, they are refreshed and that also helps. (08 Nigeria)

Despite many rapid system-level changes, some doctors felt that the centralization of COVID-19 treatment limited the services available for rural people, particularly where there was not universal access to hospital care. In rural hospitals without access to life-support equipment, doctors had to adopt more basic approaches to manage critically ill COVID-19 patients.

... And she [colleague] was really struggling with seeing patients die and feeling like she couldn't do anything with them. we managed to access some palliative care resources, and we had to make a shift in our practice, from trying to do everything that we could to get these patients to survive, to seeing how we could make sure that they had appropriate end of life care. And this is really difficult because, when you think of palliative care, you think of someone who's got a known diagnosis, there's a time period where you can prepare them for what's going to happen. And this is completely different, because it's so sudden. But we felt that we had to transition to that mode of care for the patient's sake as well. and so we had to start learning how to have difficult conversations with families and these were all stretching experiences for us as a clinical team. (11 South Africa).

Theme 3. Gaining community trust and cooperation

The role of the rural doctor was not confined to the clinic or hospital but included outreach activities to mobilize cooperation for public health responses, to reassure communities, and to provide in-home testing and support for patients in isolation.

I have to go to the confirmed cases' family members to just like look after them because you know that ...the disease [is] contagious. So the village, the community members are very, very afraid of this family. So we have to take care of the case in the hospital and also the family members at their home. So we have to build just like

a home quarantine in the community, and to communicate with the community members that if the case or the family members are inside the house or in the quarantine so it's safe. So we have to guarantee that it is safe, it is safe. We have to say that a lot, and have to just promote about the knowledge about COVID-19. (06 Thailand)

Collaborations between rural doctors, businesses, and community leaders led to innovative ways to support small communities. Local communities reciprocated by supporting their frontline HCWs.

It's really something that we need to work on, how to work with different stakeholders during this time and how we can mobilize people to help in this task, not just for the healthcare workers, not just for those people who are directly involved with emergency response but people who are from the community, like, people from the church, people working in business sectors, people who are working in schools, they all have contributions that they can do to help. (09 Philippines)

However, the process of gaining community trust and cooperation could be hindered by misinformation, unique cultural beliefs, limited health literacy, or competing economic imperatives. In communities where health literacy was low, people were anxious about attending their local hospitals, fearing that most people who went there would die. People did not have enough information to know how to keep safe, or where to go if they were sick.

However, we had challenges with patients coming, even after testing positive. They would not reveal their identity, they would still come to us, pretending to be having other medical condition and then when you interact with the patient, you take your history, you examine the patient. Features are classic of COVID-19, only for you to go and do the test, the patient is positive and on further evaluation, she has tested positive elsewhere before coming. (08 Nigeria)

Theme 4. Adapting to unrelenting pressures

A sense of being humbled or overwhelmed by the constant uncertainty and workload was evident across many doctor's narratives. Unexpected events compounded the crisis; for instance, when a typhoon disrupted the local community's COVID-19 preparations.

I feel so burdened because the responsibility of taking care of this community... weighs heavily on me and I feel, like, if I fail in doing my job people will suffer and that's really something that, um that's

really something that I could not manage at that time (09 Philippines)

You just never have any time off. We didn't have any time off – more than a day – for months and months on end. And you know that really takes up your reserves, really, as a healthcare professional, particularly when you're doing 24/7 care. (13 New Zealand)

So I sleep only three to five hours and then wake up and go and take a nap in the afternoon. So in that situation I think collegial support is important, very, very critical because I have depressed, very depressed, and so I have to just like ask my friend (she is a psychiatrist) to hear me out. And she prescribed me the SSRI...

I have a palpitation and had to be just like a panic attack... my colleagues say to me that, "You look sad, you look hopeless,"... I saw my colleagues cry. It is very, very sad... So someone cry... and I have just like tears in my eyes, leaking from my eyes. (06 Thailand)

At times, problems such as burnout, panic attacks, and depression prevented doctors coming to work. Doctors described reappraising their own mental health and gaining psychological, clinical, and practical support for colleagues. This was particularly important if doctors were physically isolated from their family and friends. Digital communication played a vital role in keeping families in touch. For other doctors, faith, meditation, and physical activity were important regenerative activities.

With COVID we've since learned, with my friends and colleagues to just rely on the power of sharing our experiences (01 Zimbabwe)

...I sort of reinvigorated that [support] group. And we have two weekly check-ins where we just talk about the things that are stressing us, and I found that really helpful. I'm now newly married, so my husband is a huge support as well. I can complain about the things that are stressing me without fear of being judged. And there's a staff wellbeing and support put on by the Health Board that I'm employed to, that I've also found very, very useful. So they gave access to free CBT [cognitive behavioral therapy] for health care professionals. (10 Wales)

Despite the adversities and stress, doctors were able to identify positive emotions. They described how their teams bonded and supported one another, the appreciation shown by their patients and communities, and opportunities for learning and growth.

And it's something that I'm really happy seeing during this time, how people work together and how we watch each other's back and how we tend to be each other's keepers during this time. I think, the COVID experience really helped me see that people I work with can really rise above the challenges. (09 Philippines)

You know, I continue caring for patients because I met some people who could give me gift to treat them very well. That feeling could help me to face that condition, stressful conditions that I have with that dying patients. To cope, I got some people who were treated by me at Emergency Department and totally recovered, and they thanked me. Those things helped me to face that stressful situation. (03 DRC)

Theme 5. Reaffirming commitments

Rural doctors expressed a strong sense of commitment to providing primary care, to their patients, health care colleagues, and communities, and this motivated them in the face of the crisis.

I want to protect our healthcare worker, I want to protect our patient, our villagers. It is our responsibility, so I have to push my every day out of the limit. (06 Thailand)

He [patient] was, like, you know, "I remember when you came to the ward and you just held my hand and I was so scared I was going to die." ... that ability to be human in the midst of stuff where people are afraid for themselves and also still really just learning about a virus, I thought those are the kinds of examples, that's exactly the care we want to be providing. (05 South Africa)

The other bit is about being the patient advocate, because I think that we really, in a system which is really struggling your role as a patient advocate becomes more important than ever. (13 New Zealand)

The sense of team commitment was a strong subtheme across the narratives. Rural doctors were encouraged and sustained by the dedication and humanity displayed by their teams. Even when experiencing their own personal distress, they actively supported their colleagues by trying to allay their fears, motivate them, and respect each person's limits. This commitment was seen when facing the trauma of their own colleagues becoming infected.

we had quite a couple of incidents where patients came in very ill, poor screening was done. And then they later turned out to be COVID-positive, and most of them died on the wards. And so the exposed members of staff would then come to the staff clinic and we would have to deal with them there ... so I couldn't just then sit back. It was mainly because these are people I interact with on a day-to-day basis, at different levels of clinical care. Some of them are general hands. Some of them were nurses, but they are people whom I don't think I would then be able to, I didn't feel comfortable going to work and knowing that I didn't do what I could have done. Never mind that it was risky. (01 Zimbabwe)

The unrelenting nature of the COVID-19 pandemic required rural doctors to review the resources available to manage themselves, the health services, and their own rural communities. Those who demonstrated resilience were adapting in partnership with the people around them.

We have learned that we can make do with what we've got, because sometimes you really don't have a choice. There were, at some stages, not a lot of options. We found that people can go the extra mile only for so long, before it starts to take its toll....I think the biggest thing is that we learn to innovate. And I think we're still going to keep needing to innovate, even post-COVID-19, so it was a good lesson to learn. I think we learned respect for each other as the clinical team, from the general assistant who is cleaning the wards to the guy at workshop, who's driving to [name of town] to fetch oxygen cylinders, so that we don't run out of oxygen, to the laundry worker who learnt to sew masks so that we could give masks to our staff and our community and our patients. And it really was a whole team effort and there wasn't any one person in the team that didn't make a valuable contribution. (11 South Africa)

Member checking

Following our analysis, we tested our results with study participants to establish validity. We received positive feedback from several participants who were supportive of our interpretations.

I don't know why but reading this draft made me a little emotional. Somehow all our struggles, and triumphs, during this pandemic were verbalized and all those emotions that I felt these past 2 years were processed. Reading about other doctors' experience in other parts of the world really inspired me to continue on. I also realized that our colleagues felt the same way as I do. We are all in this together. (09 Philippines)

DISCUSSION

This study provides evidence of the profound effects of the emerging COVID-19 pandemic on doctors in diverse rural settings, not unlike major urban hospitals.⁴ Study participants described surging workloads, uncertainty, fear, and anxiety as they faced the anticipated threat. These feelings were exacerbated by the limited resources, continually changing information, personal risks, and fears for family safety. Across the diversity of experiences, participants demonstrated common coping strategies. Their responses underscore their resourcefulness, feelings of commitment and responsibility, and strong relationships with their communities and colleagues.

Lazarus and Folkman's Stress and Coping theory provides a framework for understanding these results.¹⁶ This transactional explanation emphasizes the dynamic interaction between an individual and their stressors, as people seek to: assess threats or harms, identify their contextual and individual resources, mediate their emotions drawing on their values and beliefs, enact practical solutions utilizing resources available within the context, reinterpret meaning, and observe the impact of these processes on the perceived threats (Figure 1). This model describes three groups of coping strategies individuals undertake simultaneously to enable the co-occurrence of positive and negative psychological states: problem-focused coping, directed at managing the problem; emotion-focused, directed at regulating the emotional response to the problem; and meaning-based coping, which is characterized by creating or finding positive meaning during times of stress.¹⁷

Individual doctors' primary appraisals of the COVID-19 threat reflected their (1) local context, including number of cases, health service capacity, and the evolving understanding of the illness; and (2) individual factors, such as their personal risk profile, family considerations, past experiences, personal commitments, and beliefs.¹⁸ The simultaneous appraisal of resources (described as secondary appraisal) also changed over time as local and system-wide resources were mobilized or lost. For many of the participants, the dynamic nature of the COVID-19 crisis presented a constant flow of new stressful encounters that required continual reappraisal. This amplified the burden and challenges for doctors who felt they carried the responsibility for the wellbeing of their community and colleagues.

While individual doctors' circumstances varied, the strain on their personal coping resources and reserves was a consistent theme. In line with a problem-focused coping approach, these doctors responded by effecting major organizational changes, adapting resources (improving PPE and repurposing facilities), and managing patients in new ways. At the same time, rural doctors' efforts were often directed to broader community needs. Lessons learned from this study include the importance of rural doctors' creativity and leadership in local solution-focused strategies within their own context during crises. These findings parallel accounts of rural "collaboration and creativity" from the United States, where small communities mobilized the resources available to them, building local capacity to respond to the COVID-19 crisis.^{19,20}

Participants described emotion-focused coping strategies to manage their stress, such as meditation or prayer, taking time for physical

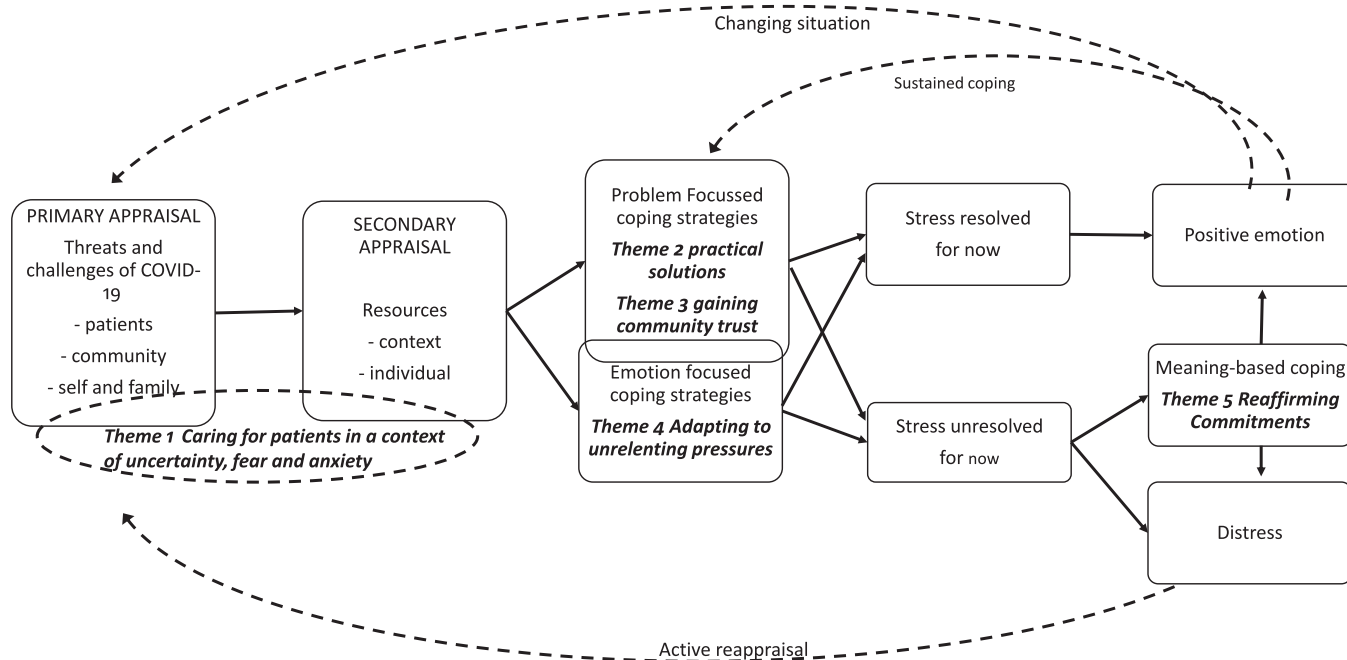


FIGURE 1 Appraisal processes and coping strategies related to rural doctors responding to COVID-19 (adapted from Folkman, 1997)¹⁷

activity, and maintaining social contact with family and friends. Sharing experiences with peers was a vital source of information and support for these doctors, as reported elsewhere.²¹ Concerningly, some participants experienced depression and required clinical support during this time. Others described how their colleagues had physically distanced themselves from patients as a means of coping, or out of concern for their families. Lazarus and Folkman's recent work on emotion-focused strategies recognizes their anticipatory nature, including preventative strategies (to minimize harm) and proactive strategies (to increase growth and reduce burnout). Another perspective is to view the theme *adapting to unrelenting pressures* through the lens of self-compassion.²² Key components of self-compassion include: (1) being present to or mindful of the emotional burden felt, (2) feelings of common humanity, where individuals were not alone in the distress they experienced, and (3) self-kindness rather than self-judgment. Our participants articulately described the distress they suffered and how they could see this around them in their patients, peers, and communities. They also described how they actively sought to nurture themselves. We argue that the emotion-focused coping strategies described by rural doctors demonstrated the attributes of self-compassion, which in turn protected them to some extent from burnout under extremely difficult circumstances. Lessons learnt include ensuring rural doctors have time and support to consider their own emotions mindfully and opportunities to share their experiences with other rural colleagues.

Importantly, rural doctors identified positive outcomes from their COVID-19 experiences, describing how teamwork, humanity, and innovation really shone through during this time. This is consistent with a meaning-based coping approach (Figure 1), which can lead to positive emotions and sustain coping during prolonged stress.¹⁷ In line with

previous research on clinical courage, participants described their commitment to serving their communities, and that their relationship with patients and local colleagues support them to continue facing their clinical responsibilities.²³

By comparing rich descriptive accounts across diverse international settings, this study provides unique insights into the experiences of rural doctors early in the COVID-19 health crisis. Our interpretation was informed by a well-established theoretical framework that provides support for our conclusions.¹⁸ The information power and validity of the study were strengthened by: (1) the sample specificity, as all participants had first-hand experience of responding to COVID-19, (2) the high quality of the interview dialogue, a result of using experienced interviewers, and (3) seeking feedback from our participants.²⁴

LIMITATIONS

Our findings reflect a sample of doctors' experiences from very diverse international locations and during the early stages of the rapidly evolving pandemic. From these personal accounts, our analysis focused on the common narratives and early coping experiences of rural doctors, rather than their different geographical contexts. We do not seek to generalize to all rural doctors. A further study could explore the changing impacts of COVID-19 and consider rural doctors' experiences in different countries.

CONCLUSIONS

The emergence of COVID-19 has caused uncertainty, fear, and stress for rural doctors across diverse global settings. This international study

demonstrates that with limited resources and support, rural doctors' resourceful and innovative responses underscore a strong problem-focused coping approach and a shared commitment to their patients, health care colleagues, and communities. Doctors drew support from sharing experiences with peers (emotion-focused coping) and finding positive meanings in their experiences (meaning-based coping). Despite these coping strategies, the longer-term impacts on rural doctors and their adaptive resources are causes for concern.

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