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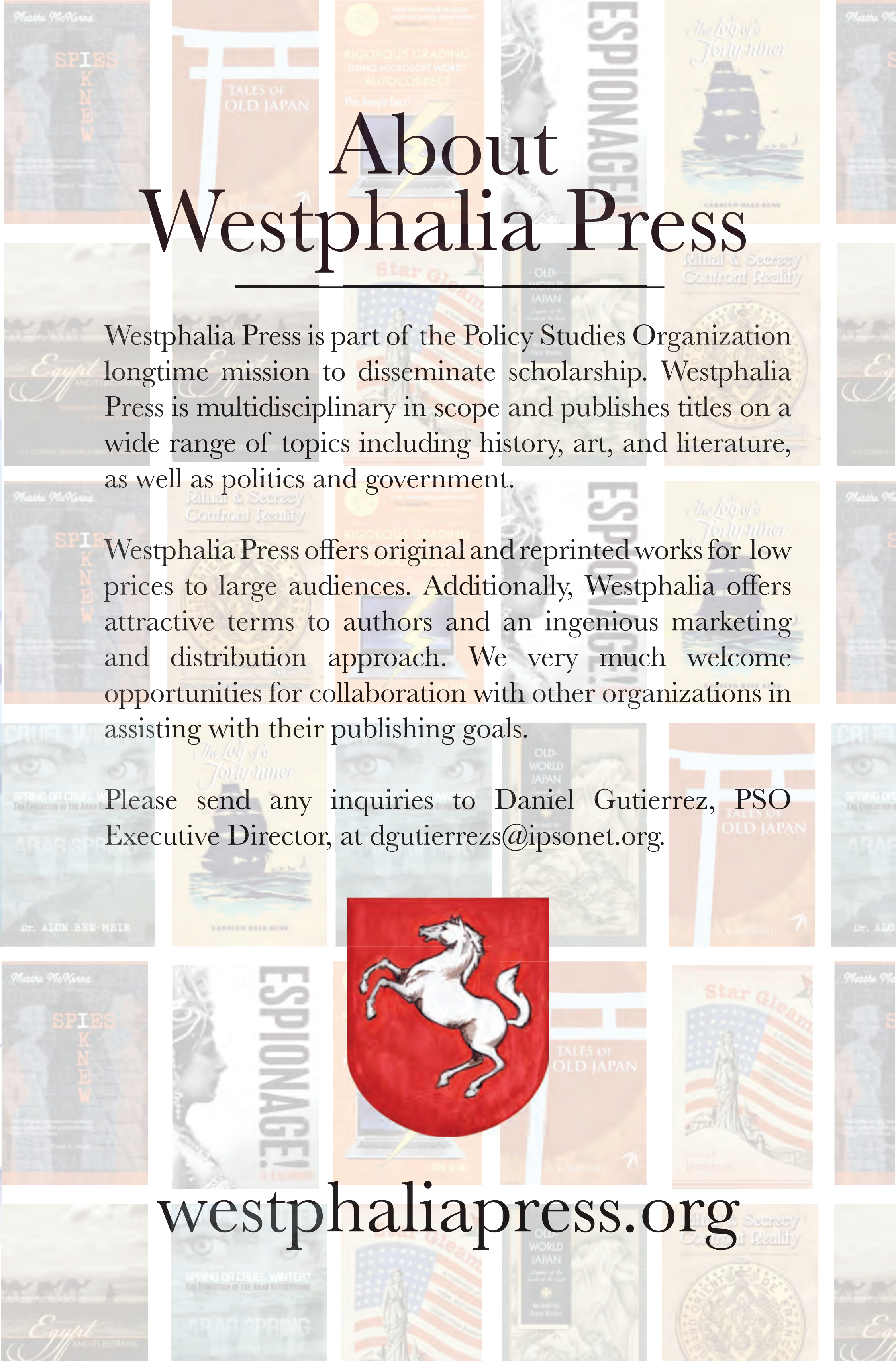

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ORIGINAL ARTICLE

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Healthcare worker resilience during the COVID-19 pandemic: A qualitative study of primary care providers in India

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Abstract

Since 2020, the world saw a myriad of creative health-care policy responses to the COVID-19 pandemic. This article studied the experience of rural primary care providers (PCPs) in India deputized for COVID-19 care in urban areas. In-depth interviews were conducted with PCPs ($n = 19$), who served at COVID-19 facilities. Lack of epidemic management and intensive tertiary care experience, limited and inadequate training, and fear of infection emerged as the primary sources of distress, in addition to absent systemic mental health support and formalized recognition. Even so, resilience among the respondents emerged as a result of encouragement from their families, peers, and mentors through various means including social media, and from individual recognition from communities and local governments. Rural PCPs expressed an eagerness to serve at the frontlines of COVID-19 and demonstrated indomitable spirit in the face of an acutely understaffed health system, growing uncertainty, and concerns about personal and family health. It is imperative to reconfigure health-care education and continuing professional development, and equip all health-care professionals with mental health support and the ability to deal with public health emergencies and build a more resilient health workforce.

BACKGROUND

Due to its mode of infection through inhaled droplets and rapid transmission, the SARS-COV-2 pathogen has posed several challenges (Kujur & Goswami, 2020), especially for fragile health systems with health-care worker shortages like India (Kamath et al., 2020).

Mahaveer Golechha and Tasneem Bohra contributed equally to this study.

[Correction added on 15 November 2021, after first online publication: The first three words “The SARS-COV-2 pathogen” has been removed from the first line (first paragraph) of the article.]

The first case of COVID-19 in India was reported on 30th January, and by 24th March a large spread had occurred which mandated a nationwide lockdown for 3 months (Bag et al., 2020). As the whole country steeled itself against the impact of the pandemic, health-care worker shortage tested the resilience of the Indian health system, particularly in large cities where COVID-19 was most prevalent. Around the country, several "back-up" measures were put in place to manage the growing patient load, including telemedicine, the use of medical students approaching graduation in support roles, and creating an "on-call" reserve workforce consisting of retired health-care professionals (Jun et al., 2020). Gujarat supplemented the health system in urban areas by deputizing rural primary care providers (PCPs). Under this initiative, about 100 Medical Officers and Staff Nurses employed at Primary Health Centres (PHCs) and Community Health Centres (CHCs) in rural areas were posted to urban health facilities in Rajkot, Ahmedabad, and Surat to meet the demands of the rising COVID-19 caseload.

Resilience in health care can be understood in two ways. The resilience of the health system refers to its capacity to anticipate and respond to shocks such as public health emergencies in an adaptive manner that includes appropriate action against the shock and optimal maintenance of routine core functions (Haldane et al., 2021).

Systemic resilience has two components. Organizational resilience, which exists at multiple levels, from the individual to the health system as a whole, is highlighted during public health emergencies (Epstein & Krasner, 2013). For instance, in the context of COVID-19 in India, this was seen in governance responses such as the formation of war rooms, and the initiative to fast-track the development of PPE to address shortages (Ministry of Health and Family Welfare, 2020), and in quick learning from locally effective models of containment such as those in Kerala, Bhilwara, and Dharavi. On the other hand, the absence of a surge capacity of health-care workers in the urban public health-care system (Sundararaman et al., 2021) which required measures such as the temporary recruitment of medical and nursing students, retired physicians, and including the rural deputation strategy in Gujarat exposed breaches in health system resilience.

The second component, individual resilience, concerns health-care workers' abilities to withstand pressure imposed by the emergent situation without compromise to either the quality of care, or their own health and wellbeing. For PCPs, resilience is described as the ability to persist in managing work demands with determination, and display a sense of fulfillment and high performance (Robertson et al., 2016). The paucity of resources such as ICU beds and ventilators often meant that health-care workers had to make health care decisions on the basis of triage and in the absence of bedside input from family or considerations for patient preference (Rangachari & Woods, 2020; Santarone et al., 2020). In addition to a hectic workload, practical errors due to a lack of evidence-based treatment and rapidly evolving guidelines, these conditions led to a high level of psychological and at times even moral distress for health-care workers.

For cadres of health-care workers new to intensive respiratory care and infectious disease management such as rural PCPs, these issues were compounded. Their training and experience is limited to routine health-care services under national health programs, endemic disease management with established treatment regimens, and managing the overall health of small communities (Directorate General of Health Services, 2012). Further, a large number of health-care worker deaths (Ing et al., 2020; Iyengar et al., 2020) complicated by misinformation and panic on popular and social media (Kadam & Atre, 2020) generated a high-anxiety environment which uniquely tested the resilience of the health system as a whole and PCPs thrust into COVID-19 care settings.

Therefore, to study PCP resilience in the COVID-19 context, it is pertinent to explore various aspects of this program including the factors that contributed to their distress, resources and gaps in the health system, and the various strategies used by this workforce in dealing with the pandemic. Such an endeavor is also essential to understand the gaps in the health system from the perspective of health-care workers at the grassroots level.

This study aimed to investigate the perspectives and lived experiences of PCPs deputed at urban health-care facilities during COVID-19, to understand the impact of this study on their lives, their mental health, and the systemic and individual factors that shaped their experience. The study also explored the systemic, social, and behavioral resilience mechanisms utilized by this workforce in a rapidly evolving, high-stress, and uncertain work environment.

MATERIALS AND METHODS

The study followed a qualitative approach applying in-depth one-on-one interviews with PCP doctors and nurses in Gujarat deputed to serve at urban health care facilities during the COVID-19 pandemic. A literature review was conducted for the development of a qualitative study tool. Assessments of behavior and mental health among health-care workers, in both community care and critical care settings were utilized to prepare a semi-structured interview guide. Thematic analysis was applied to the data to determine the major themes pertinent to the research question.

Study site and sampling

The study was conducted over a period of 3 months, from September to November in 2020. PHCs and CHCs in rural areas of Gujarat were identified and health-care workers deputed COVID-19 care facilities were purposively selected.

Study procedure

A semi-structured standardized questionnaire was created to explore the experiences and understand the timeline of deputation, arrangements made for the PCPs, training, and other systemic and personal factors that affected their work.

Informed verbal consent was obtained at the time of recruitment. Interviews lasted 30–60 min and notes were taken by the researchers during the interviews as any compulsion for written consent or audio recordings would have biased the data and affected its quality (Sharma et al., 2014). All interviews were telephonic keeping in line with COVID-19 travel restrictions and social distancing measures.

Analysis

Coherent transcripts were generated from the notes and uploaded into NVivo for qualitative analysis. Colaizzi's protocol was followed to analyse the data from each transcript (Morrow et al., 2015). This began with familiarizing and finding statements significant to the underlying phenomenon, followed by ascribing codes to statements by identifying meanings therein. A constant comparison method was used to identify pieces of text representing a similar construct. Codes were subsequently clustered into basic themes common across all responses. This step was repeated to create organizing and global themes and develop a thematic network to describe the phenomena uncovered in the study. The auto-coding feature in the software was also utilized to compare the codes that had been generated manually. This allowed for a robust analysis and ensured that all relevant information from the interviews had been extracted.

RESULTS

A total of 19 PCPs were interviewed for the study, as saturation had been achieved at that point. This included 12 doctors and 7 nurses. Among the respondents, 14 were male and 5 were female. The average age of the respondents was 35 years, and they had been employed in the public health-care system for an average of 9.5 years. One respondent mentioned that they had diabetes. Deputations ranged from 7 to 30 days, with an average duration of 20 days. Table 1 showcases the respondent characteristics.

The codes generated from the interviews were categorized under qualitative aspects such as lack of preparedness and vulnerability which represented individual factors, and management and workload which represented systemic factors. Together, these formed a global theme representing sources of distress. Similarly, training, equipment and supplies, organizational factors, and psychosocial support were the qualitative categories under the theme health system resources. Resilience mechanisms presented a complex structure with categories such as recognition from communities and authorities, professional and family

TABLE 1 Professional and demographic characteristics of study respondents

	(*n* = 19)
Profession	
Doctor	12
Nurse	7
Gender	
Female	5
Male	14
Average age of respondents	35
Facility	
PHC	10
CHC	9
Average duration of service	9.5
Timeline of first COVID deputation	
April	1
May	6
June	7
August	1
September	4
Average number of days in COVID duty	20
Facility of COVID duties	
AYUSH hospital	1
Civil Hospital	5
COVID Care Centre	4

networks, and self-regulatory behaviors such as faith-based activities and wellness and motivation activities.

A conceptual model (Figure 1) was prepared on the basis of the thematic network analysis showcasing positive and negative inputs that determined the experience of the primary health-care provider during COVID-19 deputation.

Sources of distress

Fear of infection

At the time of deputation, assignment to COVID-19 was done without any information on the health condition of the PCPs being taken into consideration. This was a cause for concern for those with NCDs themselves.

> “I have diabetes so I was quite scared and my family was also opposed to my COVID duties. This caused a lot of stress at home and to me even while I was working”—Staff Nurse

Respondents also expressed that they were worried about infecting families. For this reason, some respondents chose to isolate themselves from their families, leading to further distress.

> “My parents are comorbid with hypertension and cardiac issues. For this reason, I have not gone home for a long time”—Medical Officer

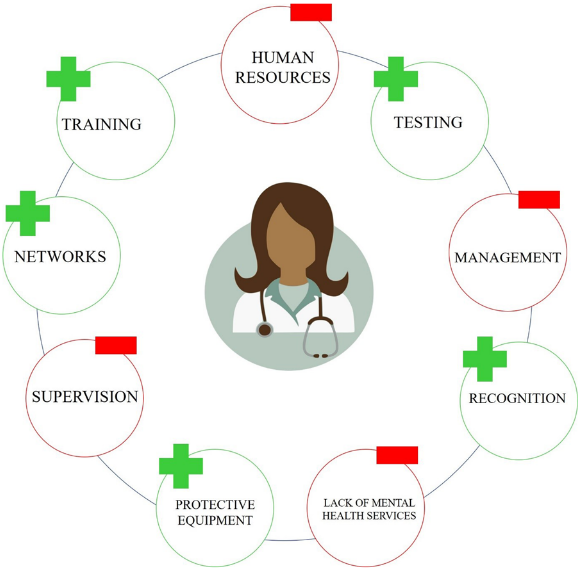

FIGURE 1 Conceptual Model of the inputs received by primary health-care providers. This figure describes the inputs received by primary health-care providers in COVID-19 duties with their positive or negative effect on the provider's resilience

Systemic shortcomings

As PCPs, public health emergencies of this magnitude were outside the scope of their previous training and experience.

> "I deal with routine maternal and child health services and I was unprepared for COVID-19. I have no experience in dealing with an infectious disease pandemic and I was quite anxious due to this"—Medical Officer

This was compounded by poor supervision, human resource shortages despite deputation, and a lack of standardization in management across COVID facilities, which often meant that health-care workers were working long hours of continuous shifts without being able to take a break.

> "The Nodal Officer would assign us to different wards every day. This caused a lot of instability and we had to spend a longer time to understand the new rules and how to work."—Staff Nurse

> "We got a night off only after receiving a notice from the health department in the capital. Before this, we were assigned to continuous duty, and those tasked with managing the on-duty staff were very ineffective"—Medical Officer

Another issue which created uncertainty were the frequently changing guidelines for testing and admission due to the lack of analytical capacity for carrying out tests. This also raised a concern among health-care providers about the rational allocation of treatment resources.

> "At the OPD in one hospital, there was no testing, symptomatic patients were being admitted and then tested"—Medical Officer

Resource availability and adequacy

Training

A lack of standardization was seen in training across areas, and health care facilities. While webinars were made available by the district authorities, several respondents felt that these were insufficient. The duration of the training was also a significant issue. Training periods varied from 1 week to 10-min orientations received on the day of joining. Further, a large portion of the training focused on infection control and waste disposal, whereas treatment and patient management training was often delivered after deputation, hands-on, by residents in hospitals.

> "The district authorities organized online training and webinars, mainly on testing, treatment guidelines, and PPE management and disposal"—Medical Officer

Equipment and supplies

Protective equipment has been the most important tangible resource in the COVID-19 pandemic. Respondents often had to source the required materials themselves as well as use them beyond a reasonable duration. While this situation improved as manufacturing increased and supply chains disrupted due to the lockdown were reinstated, issues with quality were reported. Many respondents said that at times they chose to work without wearing the PPE kit, since it was a hindrance in providing effective care.

> "Some kits caused suffocation and significant discomfort. For this reason, at the subdistrict hospital, we simply wore a white apron and not the complete PPE kit while caring for patients"—Staff Nurse

Psychosocial support

Since they were thrust into unfamiliar care settings with little preparation and often long and arduous duty schedules, the absence of mental health support from the health system was acutely felt by respondents. There were no on-site or remote counselors and the short preparatory training that the PCPs received also lacked a stress management component. Rather, the PCPs faced a dual burden of mental health as they also often provided support to patients and families, and alleviated the concerns of subordinate staff, in addition to administering and monitoring treatment.

> "I provided emotional support to patients who were unable to eat, either due to physical discomfort or because they were mentally exhausted. Similarly, the ward boys and other support staff were very fearful and along with the doctors we had to address their concerns and motivate them"—Staff Nurse

Resilience mechanisms

Local and community recognition

In some communities, the PCP had been instrumental in the successful recovery not only from COVID-19, but also those suffering from other critical conditions and unable to access advanced facility-based care. This led to widespread appreciation, which in turn contributed to respondents' resilience and increased their motivation. Respondents also noted that verbal and written tokens of appreciation from local government representatives and immediate supervisors helped to counteract the stress they had faced.

> "When people in my community recovered from COVID, their faith in government healthcare was renewed and they appreciated my efforts a lot. This has made me feel very valued and has considerably reduced stress. I feel mentally stronger and motivated to serve"—Medical Officer

> "The Tehsildar presented me with me a letter of recognition for my work which made me quite happy and I felt that I had accomplished something good despite the stress I experienced"—Medical Officer

Networks and support systems

Family and friends emerged as important resilience promoters for the respondents during long deputation periods away from home, especially through networks on social media.

> "I received a constant stream of encouragement and appreciation from friends and family members on WhatsApp groups and through Facebook posts, while I was at the COVID hospital. It took my stress away at the end of the day"—Staff Nurse

A number of respondents also reported high levels of structural capital (Salas-Vallina et al., 2020) in the form of support and fraternal encouragement from their colleagues and academic mentors, which helped cultivate confidence in their work.

> "My classmates from my post-graduate program were quite supportive and sharing case experiences with them was helped to reduce anxiety, and I did not feel lost"—Medical Officer

Self-care and reflection

Respondents mentioned a variety of individual measures to take care of their mental health, including wellness activities and faith-based activities which allowed them to continually build resilience against the rigors of COVID-19 duties.

> "Prayer was an important part of keeping myself calm and motivated towards my work. It allowed me to encourage others as well"—Staff Nurse

> "I used to do yoga, and exercise to prevent fatigue, and meditation so as to feel in control of my own physical and mental health. When I was posted to a facility with a large campus, my colleague and I used to jog in the morning as well"—Medical Officer

Interestingly, resilience mechanisms had come into play even as health-care workers prepared for their COVID-19 postings. A strong sense of duty and patriotic spirit emerged as a common motivator.

> "I knew before the posting that I would be in a high-stakes environment. I felt it was my duty towards the people as a doctor, and towards my country in this difficult time"—Medical Officer

> "I truly believed that I was a Corona warrior and in difficult situations, this thought helped me to cope and perform my duty well without feeling dejected"—Staff Nurse

DISCUSSION

This study documented the experiences, challenges, and resilience mechanisms employed by rural PCPs in Gujarat deputized to provide COVID care in urban tertiary care facilities at the frontlines of the pandemic. While quantitative studies evaluating he psychological impact of COVID-19 on health-care workers across the country have been published (Nair et al., 2020; Spoorthy, 2020), in-depth qualitative assessments enrich the context by providing detailed insight into the issues faced by individual doctors and nurses. Comprehensive qualitative data also delineate the gap between policy and implementation, especially when turnaround times are very short, to meet the demands of large-scale public health emergencies such as the COVID-19 pandemic.

Self-perceived vulnerability to infection and transmission to family emerged as correlates of poor mental well-being among health-care workers, which has also been seen in other studies during the COVID-19 pandemic (Hong et al., 2021). Similarly, poor health system preparedness was showcased in the lack of sufficient training and equipment for care and safety, which is reflective of the state of resource-constrained health systems during public health (Raven et al., 2018). The distance between health-care workers' existing experience and training and what is asked of them can often be a significant hindrance to resilience, and is an example of a lack of systemic learning which is reflected in the lack of updates or revisions to the description of duties for rural PCPs in the past decade. On the other hand, similar to experiences from Ebola (Schreiber et al., 2019), self-inoculation against stress was seen among study respondents in the form of a strong Hippocratic spirit and even a sense of duty towards the country. Individually, wellness and faith-based activities, and communicating with family were also found to reduce distress. These behaviors are similar to the self-care, reflection, and mindfulness activities identified in interventions for health-care worker resilience both within and independent of an epidemic context (Rogers, 2016; Schreiber et al., 2019). We also discovered that professional networks like alumni and mentor groups functioned as promoters of resilience (Matheson et al., 2016) and provided a space to discuss ideas for patient care. These can be thought of as adaptations to the small-group problem-solving approach and tiered knowledge sharing seen in the health-care worker resilience literature. (Rangachari & Woods, 2020; Rogers, 2016)

The COVID-19 pandemic has clearly highlighted the need for an health-care worker resilience framework in the Indian health system. This should be carried out through the delivery of established educational interventions, in the form of resilience workshops (Heath et al., 2020; Rogers, 2016). These could be delivered through the Integrated Government Online Training (iGOT) portal launched by the government during the pandemic (Ministry of Education, 2020), thus ensuring standardized training for all health-care workers at costs that would not place further strain on the health system (Maunder et al., 2010). While these measures would address individual resilience, it is also important to build resilience within health-care organizations, especially urban tertiary care facilities which were the epicenter of COVID-19 care. This should be an intensive multilevel capacity-building exercise targeting individual doctors and nurses, teams, managers, and senior health officials, so as to enable robust communication structures thereby providing real-time updates and a source of reassurance to all health-care workers (Rangachari & Woods, 2020). In addition, the Indian Public Health Standards guidelines for PHCs and CHCs, which incorporate both the types of services offered at these facilities and a description of the duties of health-care workers employed, should be updated and components related to addressing public health emergencies should be included. Efforts to address health-care worker mental health have already been implemented in some states and public-private partnership initiatives are also in place to provide mental health and psychosocial support to frontline health-care workers (UNICEF, 2020). Adapting state initiatives and mainstreaming such programs will be a decisive step in building a resilience framework for the emerging health-care workforce in India.

While resilience interventions are essential, human resource shortage is among the fundamental causes of distress for health-care workers in India. This should be addressed by enhancing recruitment at all levels, especially in the urban public health-care system, and boosting the importance of infectious disease management and public health training for all health-care workers. From a governance approach, strategies should be developed at state, district, and block levels, to capture events in the outbreak stage, through effective community surveillance and case monitoring, and create an articulated flow of referrals without choking secondary and tertiary care facilities.

Routine implementation of health emergency management training for all health-care professionals including rural doctors and nurses is the most important learning from COVID-19. The Medical Council of India announced that going forward, undergraduate medical training would include a component on pandemic management, which can be said to be a step towards creating a learning and adapting health system. Emergency pulse training programs should be uniform and appropriate for all health-care professionals (Zhou et al., 2020). There is also a need to evaluate whether existing models of health-care education and training adequately focus on sources of distress and resilience-building mechanisms (Matheson et al., 2016). Training and awareness programs should also extend to the public and include a strong sensitization component against misinformation and mass hysteria to prevent discrimination against affected individuals and health-care professionals (Kakar & Nundy, 2020).

CONCLUSION

Health disasters have become an increasingly frequent side effect of increased global connectivity and rapid urbanization. Understaffed health systems in low- and middle-income countries were severely hit by COVID-19, leading to inventive solutions such as the rural PCP deputation strategy followed in Gujarat, India. This study showed that rural PCPs utilized a variety of resilience mechanisms including support from mentors, constant communication and encouragement from peer networks and families through social media, acknowledgment from communities, and self-care practices, even in the absence of formal recognition and systemic mental health support. While this strategy was effective in addressing health-care worker shortages in the first wave, it revealed several gaps in the public health emergency response. From this point onward, two things will be essential; training in public health disaster management, and a robust infrastructure to support the mental health and psychosocial needs of all health-care workers, including PCPs in rural areas. Such measures will ensure a strong and responsive Indian health system with a resilient emerging health-care workforce.

LIMITATIONS AND BIAS

Since this study was conducted after respondents had completed their deputations, recall bias is possible. However, duty hours during the deputation period were long and it was not feasible to conduct in-depth interviews at this time. To address this, interviews were conducted soon after the deputations ended and the tool design and interview technique were optimized to obtain as much information as possible. This was seen as respondents described their experience in rich detail. Since the deputation of rural PCPs was a strategy followed in Gujarat, the results of this study can be generalized to an extent. It would also be beneficial to study other strategies used by states to address the human resource shortage during the COVID-19 pandemic. While it was preferable to conduct telephonic interviews due to travel restrictions and distancing norms, this may have impacted the researchers' rapport with respondents, and nonverbal cues that are important to build context may have been missed (Liu et al., 2020). Since job security is a major concern among government health-care providers (Purohit & Bandyopadhyay, 2014) their responses can be said to be affected by social desirability.

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CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

ETHICS STATEMENT

This study was conducted according to the principles of the Declaration of Helsinki (Cho et al., 2016) and approved by the Institutional Ethics Committee of the Indian Institute of Public Health Gandhinagar, India. Participation was voluntary and all participants were informed that they could stop or refuse at any time. Patient confidentiality was ensured by anonymizing all data.

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ORIGINAL ARTICLE

Political power and awareness of nursing during the COVID-19 pandemic from the views of senior nursing students

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Abstract

Studying the impact of the COVID-19 pandemic on the current nursing workforce and the training of future nurses is important. This study aimed to assess the views of senior nursing students pursuing health policy courses on the effects of the COVID-19 pandemic on the political power and awareness of nursing profession. Document analysis method, one of the qualitative enhancement patterns, was employed in this study. This study was conducted in a nursing school with a sample comprising 34 nursing students. The data were collected from online homework documents and evaluated with thematic analysis. Students on the effects of the COVID-19 pandemic on the nursing profession were categorized into three main themes and nine subthemes. Students reported that although the visibility of nursing increased during the COVID-19 pandemic, the problems of this profession did not change. The results showed that depoliticization was an important obstacle in the fight against these problems and students stated that the struggle could be realized together with a unified and strong political voice. Students suggested being organized in the struggle against problems, addressing unions and associations, and political awareness and political participation as a remedy.

KEYWORDS

COVID-19, health policy, nursing, nursing students, political awareness, political power

Key points

- There is limited evidence regarding nursing students' views on the situation of nurses during the COVID-19 pandemic.

[Correction added on 11 November 2021, after first online publication: In the first sentence of the abstract “are” has been changed to “is”]

- COVID-19 has caused nurses to face many serious problems and become more visible. However, there has been no change in the working life of nurses in the Pandemic.
- The students explained that political voice, education, and organization is important solving problems of nurses.
- It is necessary to bring a new perspective to the way health policies are handled in the nursing curriculum especially to create a politically strong nurse in working life.

INTRODUCTION

The world is facing one of the biggest public health crises in a long time, the COVID-19 pandemic. Nurses are one of the professionals who are most affected by this crisis and have to do their jobs at a great risk (Morin & Baptiste, 2020). Because the COVID-19 pandemic has put forth unprecedented challenges for health systems, the condition and status of the professionals within this system has become more visible. Particularly, the experiences of nurses were suddenly on the agenda of the public, and it was reported that there was an almost threefold increase in media coverage about nursing during the pandemic. At such times, nurses are sometimes described as heroes in the face of adversity because of their courage, devotion, endurance, and perseverance. Sometimes, nurses have been included in militarist discourses such as “fighting on the front lines” and “dying in service” (Bennett et al., 2020; Cervera-Gasch et al., 2020; Morin & Baptiste, 2020). However, when evaluated in detail, it is seen that there has been no change in the working life of nurses, and it is the public perception that has changed.

COVID-19 has caused nurses to face many serious problems ranging from personal protective equipment shortages, mental disorders, insomnia to overwork, and even death (Morin & Baptiste, 2020; Palamim & Marson, 2020; Pappa et al., 2020). In Turkey, nurses have faced many problems during the pandemic, including the significantly increasing need for nurses, excessive and intense work, lack of screening tests, lack of safe working environment/conditions, caring for their children, working condition of pregnant women, deficiencies in personal protective equipment, problems with negative pressure isolation units, problems with case management, problems in the functioning of health-care institutions, problems related to protection against transmission risk, maintaining social and psychological health, COVID-19 additional payments, and situations that prevent providing qualified care. The demand for nurses for the 3600 status (a service title affecting the pensions and retirement bonuses) and improvements in wages that are currently slightly above the poverty level is ongoing since years. However, during the pandemic, many health workers were infected and 357 individuals (Until March 24, 2021) lost their lives owing to COVID-19. In addition, COVID-19 is still not defined as “occupational disease” and “occupational accident” for health-care workers (TMA, 2020; TNA, 2020). Nurses are the largest occupational group in the health-care industry globally. Thus, nurses should be the strongest voice in terms of health policy and be highly involved in policy-making processes (Hewison, 2007; Santillan-Garcia et al., 2020). In fact, although this tragedy offers several opportunities for nurses, it has shown that nurses are not involved in discussions (Daly et al., 2020).

The COVID-19 pandemic has caused unprecedented difficulties in nursing education, as in other areas. At the beginning of the pandemic, when nursing education began to rapidly move to online environments, both students and educators faced new needs and concerns.

Especially schools that carry out training for nurses; it had to be innovative, flexible, quick. On the other hand, educators had to move face-to-face classes to online environments. This has caused them to face new challenges such as delivering clinical experiences and student assessment processes (Dewart et al., 2020; Morin, 2020) in Turkey, nursing education has been severely affected during the pandemic. Immediately after the cases began to appear in Turkey, higher education institutions (based on Higher Education Authority's decision) switched from classical learning to distance learning. During this period, nursing education was also conducted through distance learning activities (CoHE, 2020).

Nursing students and nurses feel excluded, believe they are not part of the health policy development process, and are not important enough to make a difference. However, in studies conducted on nursing students, most of the nursing students stated that they were willing to volunteer for work in the event of a pandemic. In this respect, COVID-19 should be considered not only as a new epidemic but also a turning point in the training of future health professionals (Cervera-Gasch et al., 2020; Temple, 2020; Yonge et al., 2010). Consistent with these results, the awareness of nursing students should be increased and made more effective and strengthened, particularly during their education. Only if this is done can the voice of nursing be heard in political discussions involving care.

Information on nursing students' views on the situation of nurses during the COVID-19 pandemic is limited. However, it is important to consider the opinions of students who will provide health services in the future. Based on this perspective, the aim of this study was to assess the views of senior nursing students pursuing health policy courses on the effects of the COVID-19 pandemic on the political power and awareness of nursing profession.

Research questions

- What are the opinions of nursing students pursuing a health policy course on the impact of the COVID-19 pandemic on the nursing profession?
- What are the views of nursing students pursuing health policy course about nurses' political power, political awareness, and participation in political actions?
- What are the views of nursing students pursuing health policy course on ways to increase nurses' political power?

METHODS

Design

Document analysis method, one of the qualitative research designs, was employed in this study. This study was based on the guidelines proposed by the COREQ checklist.

Participants

Purposeful sampling method was used to determine the participants. In this study, nursing students who took an elective health policies course in the 2019–2020 academic year were included in the study to ensure that observations and opinions about health policies were stated from a broad perspective ($N = 36$). Two students did not submit their homework in the study. All the online homework of the students who accepted to participate in the study were included in the study ($N = 34$). Participants were students from various regions of Turkey.

All the students participating in the study have taken the elective “Health Policies” course. Within the scope of the course, the students took theoretical lessons 2 h a week for 6 weeks before the COVID-19 restrictions were imposed and then online for 8 weeks. The topics covered in the course are general concepts (policy, health policies, law, regulations, etc.), the importance of health policies in nursing, international decisions and organizations that direct health and nursing, health policies and nursing in Turkey, and legal regulations related to nursing.

Instrument

The data collected in this study includes online homework documents prepared by nursing students within the scope of the health policies course regarding the reflection of the COVID-19 pandemic on health policies and the nursing profession.

Online homework form

This form comprises three questions prepared on the basis of theoretical knowledge during formal education and online courses within the pandemic restriction period and the observations on nurses and health policies during the pandemic. In these questions, the students were asked to evaluate nurses' current state of political power, political awareness, and political action, and the effects of the pandemic on nursing and health policies.

Data collection

The data were collected between June 13 and July 01. The data were obtained through the distance learning module of the university.

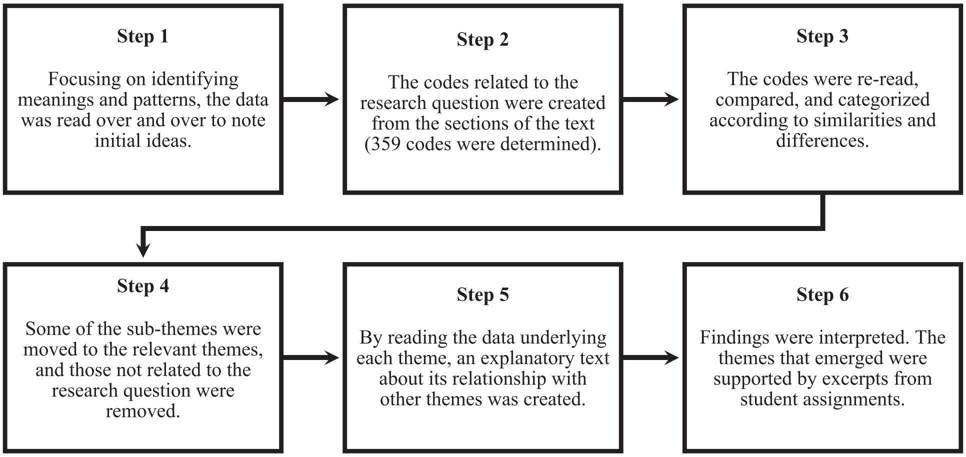

FIGURE 1 Thematic analysis steps

Data analysis

Thematic analysis of the data was done according to the six steps indicated by Braun and Clarke (Braun & Clarke, 2006), and these data analysis steps are summarized in the flow chart (Figure 1).

Reflexivity

In qualitative research, it is stated that the background and position of the researcher will affect the subject they chose to research, its purpose, and its approach to the subject in line with this purpose (Malterud, 2001). The researcher has completed her doctorate in public health nursing (PhD) and has worked on health policies in different branches of the national trade union and Turkish Nurses Association since she started working. In addition, the researcher has scientific research on health policies and qualitative research.

Trustworthiness

Credibility in the study was achieved by an expert review method. The online homework form was finalized by submitting to expert opinion before sending it to the students. In the data analysis, the themes created by the researcher were finalized by taking expert opinions from two independent researchers with qualitative research education and experience. To achieve acceptability, grades related to student statements were taken from homework as raw data and participant statements were directly included in the research report.

The sample, participants and setting were explained in detail in the study. In addition, student statements were included on a voluntary basis. It is thought that the findings obtained from the study are of a quality that can be used on similar participants and environments and that transferability is ensured in this respect. In the study, it is thought that transferability is provided by using direct student assignments as raw data and the findings including the participants' own expressions.

FINDINGS

The ages of the students investigated in the study ranged from 21 to 33 years, with an average of 22.5 years. In total, 26 participants were women, eight were men, and one was working as a nurse. As a result of the analysis, three main themes and nine subthemes emerged. These themes were visibility, depoliticization, and political voice. The themes and subthemes obtained in the study are presented in Figure 2.

Theme 1. Visibility

Students provided numerous views on the impact of the COVID-19 pandemic on nurse labor and nurses' political power. Most students stated that during the pandemic, nurses had to struggle with many problems and were seriously challenged. The views of the students were considered visibility issues and associated with the subthemes of being a loser, changelessness, and attrition.

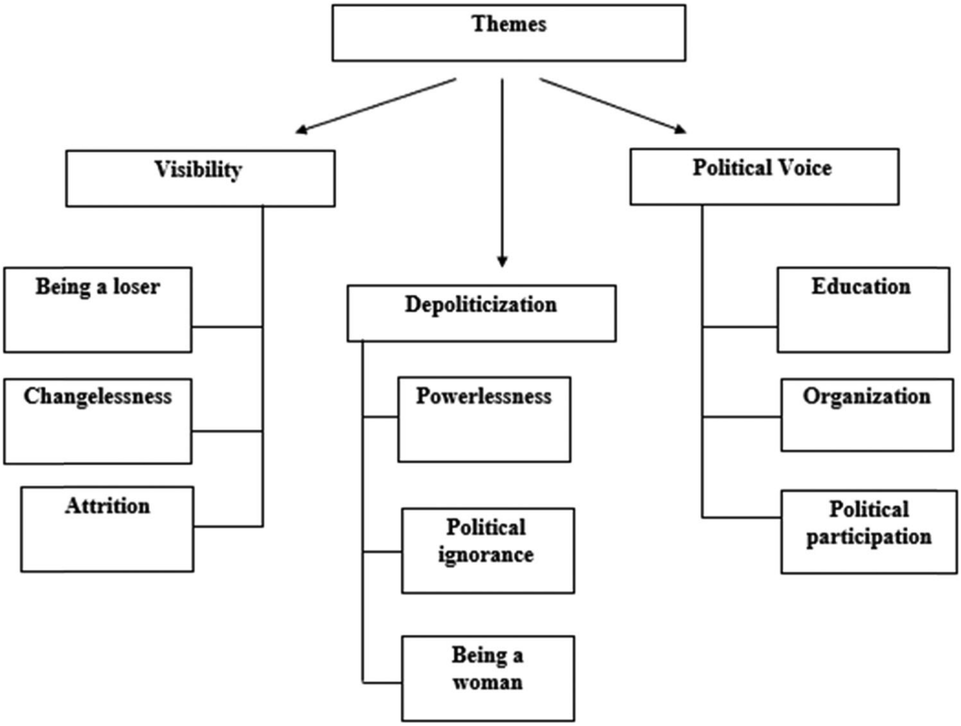

FIGURE 2 Themes and subthemes emerging from the documents

Being a loser

Some students stated that nurses did not get what they deserve during the COVID-19 pandemic. Moreover, students reported that nurses experienced many losses in their personal and working life.

> *…. During the pandemic, it was revealed that nursing was not only about measuring blood pressure and taking blood, and people realized that it was an important profession. I think the effect on political power was not as expected. It seems that after all that intensive work, staying away from their family and loved ones, nurses did not get the reward they deserved for their labor and the respect for the profession was not there. In addition, I think that the nurses are unable to make their voices heard and claim their rights on this issue* (P1, Woman).
>
> *Although I think that the pandemic drew, albeit slightly, attention to the distress and problems of nurses, we still see that efforts are ignored* (P15, Male).
>
> *The pandemic has had an impact on the visibility of nursing labor, but I don't think this effect is fully realized. I think the pandemic has little effect on political power. It is a step that nurses try to make their voices heard and defend their rights during this process and appear on news channels. However, although the increased need for nurses during the pandemic allowed people to realize*

> *the importance of our profession, it was not enough to improve our rights* (P18, Woman).
>
> *The importance of the nursing profession is too great to be limited only by pandemics. Unfortunately, I do not think it holds the value it deserves in the society* (P32, Woman).

Changelessness

Some students reported during the interviews that although the COVID-19 pandemic made nurses visible in many ways, in reality, nothing is changing about nursing.

> *This* (*pandemic*), *maybe in 6 months or 1 year, will definitely end. How persistent, how effective, and how comprehensive will be the solutions to our problems? For example, will there be a bonus or early retirement due to the attrition or exhaustion we faced after this period is over? Or let's expect much simpler things, will healthcare professionals be able to use public transport for free? Forget all that, will the perception in people's minds when a nurse tells them about his/her profession that "oh nurses, they insert serums, draw blood, and make 4000 TL as salary" be destroyed? Forget about the prevention of violence against healthcare workers, will there be appropriate punishment?"* (P6, Male).
>
> *…. Nurses were not given their due regarding the difference in performance compensation with other professionals and they were not satisfied with this situation. I do not think we were able to adequately express the dissatisfaction in this matter. These wage differences, which have been ongoing for years, will continue as long as we are not politically effective"* (P8, Male).

Attrition

Some students emphasized that nurses experienced loss of rights and security, deteriorated working conditions, and exhaustion during the pandemic.

> *While the pandemic threatened the world, our colleagues were the most severely affected occupational group. The only thing that changed was that our colleagues were exhausted and worn down even more (P22, Woman)*.
>
> *However, in the face of newly emerging issues, problems such as not being able to provide enough equipment, not conducting regular diagnostic tests, long working hours, fatigue, inability to provide transportation and accommodation facilities, caused nurses to wear out even more during this period. I think that they do not get enough wages in return for this labor and exhaustion* (P24, Woman).

Theme 2. Depoliticization

While reporting their views on nursing during the COVID-19 pandemic, the students especially expressed their opinions on political power, political awareness, and participation of nurses in political decisions and stated that depoliticization was an important determinant. Students addressed depoliticization within the framework of powerlessness, political ignorance, and being a woman.

Powerlessness

It was observed that the students considered powerlessness as one of the most important reasons of depoliticization.

> *Nurses are the largest group among healthcare professionals. They spend a long time with the individuals they care for, but they feel powerless* (P4, Woman).
>
> *I think the nurses do not find themselves politically powerful. If they found themselves strong enough, they could have forced bureaucrats or administrators to take more deterrent measures against violence against health workers* (P7, Male).
>
> *If it were an organization with a really solid foundation and if they were able to hold power as well as other organizations, nurses could have a say in health policies, at least as much as physicians. Although nurses are in a position where they can easily attain such power, I think that the thought 'it was like this, thus will it be' prevents this* (P8, Male).

Political ignorance

Most students reported that they regarded political ignorance as an important problem. Students stated that this ignorance distanced nurses from politics and prevented them from being politically powerful.

> *In order for nurses to find themselves politically powerful, they must have full self-confidence, and solid and internalized policy knowledge. However, because nurses are politically ignorant, they are not politically powerful either. Political awareness is required to take political action. To provide political awareness, it is necessary to have knowledge regarding politics* (P3, Woman).
>
> *Nurses do not find themselves politically powerful nor are they aware of whether they are actually powerful. They do not question and are not aware of their duties and responsibilities* (P2, Woman).

Being a woman

Students stated being a woman as one of the main reasons for being depoliticized.

> *When we look at who has been pursuing the nursing profession from past to present, we see that women considered this profession. Of course, nurses don't have enough interest in politics due to the addition of the patriarchal society perspective on women to the negative image of nursing*. (P1, Woman)
>
> *…. I think one of the main reasons is that the nursing profession is still seen as a women profession. I think the voices of women are suppressed in a patriarchal society. I think there will be developments that will make a difference in terms of both activism and politics over time as male nurses enter the profession and organization*. (P8, Male)

Theme 3: Political voice

Students stated that the problems faced by the nurses could be solved with a stronger political voice and they associated political voice with the subthemes of education, organization, and political participation.

Education

Some students emphasized that a good education on this subject is necessary for political voice.

> *One should not retreat to his own shell rather find solutions to the problems … I think this will be done with good education and skills* (P2, Woman).
>
> *Another way is to increase political activity. … I think nurses need to know about politics to increase awareness* (P16, Woman).
>
> *Political power in nursing can be increased through education* (P17, Women).
>
> *We should follow the ever-changing and developing information and technology by giving importance to our education and try to make our voices heard by increasing efficiency* (P10, Woman).

Organization

Almost all the students stated that nurses must act together and organize better. Most students referred to nursing associations and unions.

> *Political power in nursing is about the unification of nurses, that is, turning thousands of voices into a single voice. The easiest way to do this is to gather nurses under one roof, that is, one voice telling about their problems… Nurses need to be organized. This organization should not be specific to nurses in a certain place or city, but should include all the nurses in Turkey* (P1, Woman).

> *Nurses can become members of associations that will embrace all members of the profession in a holistic manner as well as unions of their choosing. In addition, chambers and unions are platforms where professional organization will be provided in the most impartial and holistic way* (P9, Male).
>
> *If nurses become more conscious about organizing and if they are in solidarity, I think that enough political power will be obtained by nurses. I think that this organization can be realized at the university education level through Turkish Nurses Association Student Commission (TNASC) at the beginning of our professional careers* (P25, Male).
>
> *I think the most essential thing for them to increase their strength is to act together rather than compete with each other. With a professional association, they can be heard and position themselves. If we, as nurses, can act together on what is important for nursing, our voices will be heard. Otherwise, we will let other people*'*s decisions govern us* (P31, *Woman*).

Political participation

Some of the students mentioned the importance and necessity of political participation for political voice.

> *By saying "I also have a right, a responsibility," with the political participation of nurses, by voting, by claiming their rights, nurses need develop their own position, institutions, and profession into a better and stronger place* (P2, Woman).
>
> *…. Then, by planning what can be done toward the goal, taking action (political action) and becoming able to influence other people toward their goals, political power is gained* (P3, Woman).
>
> *It will be in the interest of everyone involved that nurses*' *political awareness, political participation, and actions are at the highest level to both improve professional conditions and attain maximum efficiency in health services* (P7, Male).

DISCUSSION

The COVID-19 pandemic continues to be a global concern wherein the nurse labor force, its value, and the problems faced by nurses are becoming visible. In the present study, the opinions of nursing students regarding the effects of the COVID-19 pandemic on the nursing profession were examined.

Although students stated that the pandemic made nursing more visible, they also stated that in many respects, nurses suffered losses, nothing changed for the profession, particularly in terms of working life, and the nurses were seriously worn out owing to hard work. Similarly, it has been reported in the literature that the current public has more idea about nursing, but nothing has changed in the lives of nurses, and it is the public perception that changes (Morin & Baptiste, 2020; Thomas et al., 2020). However, some students in the present study described nursing as a profession that loses/does not get the value it deserves, although they work at least as much as other health-care professionals. The students' observation that although their visibility has increased, nurses are not getting what they deserve can negatively affect the value they attribute to the profession and reinforce their thoughts that this profession will never achieve its desired place. This can lead students to be depolitical and avoid facing political issues when they enter the profession. Whereas, nurses' insight, values and policy knowledge are extremely important to public health and well-being. Nurses can be involved in political agenda-setting and policy making, and can encourage political activation by guiding colleagues and students (Wilson et al., 2020).

Policy is an important tool that affects nurses and health care, and nurses must understand policies to be politically effective. Nurses must have knowledge of health policies to gain a voice in health care and provide health care services to the community. In addition, nurses should be aware of the fact that any change in health policies affects nursing (Cohen & Milone-Nuzzo, 2001; Groenwald & Eldridge, 2020). If a real difference is to be made in terms of health policy, it is necessary to empower, support, and encourage nurses. It is particularly important to help nurses understand the importance of health policy and the policy development process and include them in the policy development process (AbuAlRub & Abdulnabi, 2020). In the present study, it was observed that students regarded nurses as depoliticized and associated this stance with powerlessness, political ignorance, and being a woman.

Students often reported that nurses were politically weak and that nurses considered themselves to be weak. However, power and influence are very important in policy and policy development and the ability of one person to influence others and influence requires power (Groenwald & Eldridge, 2020). Therefore, it is important that nursing students understand the importance of power in nursing to have power and to empower their environment.

The students attributed their political powerlessness and lack of political awareness to political ignorance. Thus, it has been reported that lack of knowledge is the basis of nurses' lack of participation in policy (Cohen & Milone-Nuzzo, 2001). Nurses should have the necessary knowledge, skills, and attitude to participate in decision-making processes and policy making; this will further motivate them to be involved in politics (Turale & Kunaviktikul, 2019). Although policy has its own complex structure, it is important for nurses to know that policy is an important implementation tool. Because nurses have knowledge of policy and can build relationships, they can be involved in the development and implementation of successful policies related to nursing and influence policies (F. Hughes, 2005).

One of the most important obstacles to political participation is the perception that women have a lower status in society (Temple, 2020). In a patriarchal society, it is noted that policymakers, decision makers, and political figures are mostly men, and women are responsible for traditional roles such as conducting domestic work and caring for the child or elderly, although they are part of working life. Some students in the present study stated that the patriarchal society prevents nurses, who are mostly women, from participating in politics. In a study, it was found that men's participation in politics was higher than women, and it was determined that women nurses participated in politics passively, such as voting instead of actively participating (Alhassan et al., 2019). Accordingly, the patriarchal social structure may prevent women nurses from being a part of policymaking and may cause them to avoid situations that require being on the front stage. Although nursing is seen as a women profession in Turkey, males have also begun to use the title of nurse owing to a law amended in 2007 (Kaya et al., 2011). However, this may bring some problems with it, such as male nurses starting to take more managerial positions. The fact that men occupy managerial positions more than women among health-care workers has been explained by gender identities and power relations in management boards. Accordingly, women nurses face problems of decreasing or neutralizing their numbers as a result of gender-based power relations, especially in the stages of influencing and contributing to health policy (A. Hughes, 2010). One of the students stated that the participation of male nurses in the profession would contribute politically to the profession; this view is compatible with the patriarchal social structure and may stem discrimination based on gender in the future.

In the present study, students emphasized on education, organization, and political participation as a way for nurses gaining a powerful political voice. Similarly, it has been stated in the literature that nursing education is very important and necessary for health policies. The lack of information that underlies the nurses' lack of involvement in policy may be owing to the gap in education related to this issue. However, with the inclusion of the health policies course in the nursing education curriculum, students can gain the necessary knowledge and behaviors that will affect health policies (Cohen & Milone-Nuzzo, 2001). In addition, it is reported that the health policies course is important in terms of establishing the advocacy role in nursing. Furthermore, it is important to discuss political success stories in the field of nursing to make students believe in the transformative effect of policy. Therefore, it is necessary to include a health policy course in nursing education (de Cordova et al., 2019; Oestberg, 2012; Staebler et al., 2017). Despite this necessity, previous studies have stated that nursing students' political awareness is low, they have limited abilities to participate in health policy activities, they are politically inexperienced and their active participation rates in policy issues are very low (Byrd et al., 2012; de Cordova et al., 2019; Staebler et al., 2017). However, in a study conducted with undergraduate, graduate, and doctoral students in the United States, it was determined that nursing students have the values and experience required for participation in making health policies. Improving the competence of students and shaping students on this topic is important for countries to transform their health policies (Thomas et al., 2020). Nurses should have sufficient knowledge, skills, and attitude to be involved in decision-making authorities and to be involved in policy making; this will further motivate them to get involved in politics (Turale & Kunaviktikul, 2019).

Nurses must be organized to be united, in solidarity, and strong. Although the ratio of nurses in the public sector who are union members is high in Turkey, this contribution is unfortunately limited to membership size (Aydoğan, 2007). However, if all coalitions that report that the problems are bigger and accept various health-care professionals other than nurses as members can adopt a common strategy, their chances of political success are very high (Groenwald & Eldridge, 2020). Although there are many professional associations in Turkey for different specialties, it is reported that membership rates in professional associations are low among nurses in Turkey, and most members only pay the membership fees and do not assume active duty (Altuntaş & Yetginler, 2020). In fact, such organizations play an important role in filling the gaps and empowering nurses to become more involved in political processes (Groenwald & Eldridge, 2020).

Studies have shown that the perceived level of political activity and participation in health policy is low among nurses and only moderate involvement to participate in health policy making (AbuAlRub & Abdulnabi, 2020; Safari et al., 2020). This passiveness of nurses is based on complex reasons such as the fact that they cannot freely express their thoughts, lack of time, political ignorance, disappointment in the work procedure, lack of external support, lack of access to key figures, diverging values or attitudes of policy makers, lack of financial support or other resources, etc. (Hughes, 2005; Safari et al., 2020). In ensuring that nurses see the big picture and are ready for political participation; nursing education, educators, and professional organizations have an important place (Carnegie & Kiger, 2009; Cohen & Milone-Nuzzo, 2001). It is reported that it would be appropriate to provide health policy education in nursing education not in a didactic way, but by using interactive techniques, and with an understanding that will improve the advocacy skills of students especially in health issues (Hallowell et al., 2020). At this point, it is recommended to review existing curricula and emphasize health policies in all undergraduate education. In addition, it is stated that it is necessary to develop the health policy competencies of nursing students with the organization and financing of health services, payment systems, legal processes, policy development, and implementation (Benton et al., 2017). Nurses knowledgeable about health policies will have the ability to shape health policies in the future. It is reported that the approaches adopted in nursing education will help the nursing students to be better prepared for this process and make them more ready to participate in policy (Ellenbecker et al., 2017; Thomas et al., 2020).

CONCLUSION

In the present study, students stated that although the pandemic increased the visibility of nurses, not much has changed for nurses, and the pandemic has increased the existing problems of nursing and nurses are exhausted. Students explained the obstacles to nurses' becoming stronger as depoliticization, political ignorance, the fact that nurses are mostly women, and the perception of low status toward women in patriarchal societies. The students explained that the way for nurses to be strong during and after the pandemic is through forming a single political voice, education, and organization. Thus, students suggested being organized in the struggle against problems, addressing unions and associations, and political awareness and political participation as a remedy, which is an important step in solving problems.

The findings of this study contribute to future studies by revealing students' views on COVID-19 and nursing. Consistent with these results, it is recommended to include more political knowledge, solidarity, and organization issues in nursing education and curriculum so that nurses can respond stronger and in solidarity during possible future pandemics or health-related emergency situations. To develop nurses who are organized in working life, studies can be conducted to enable students to be organized during their nursing education. It is also believed that the results of the present study will bring a new perspective to the way health policies are handled in the nursing curriculum.

LIMITATIONS

Qualitative data are limited to students' views on their homework.

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CONFLICT OF INTERESTS

The author declare that there are no conflict of interests.

ETHICS STATEMENT

Institutional permission was obtained from the school where the study was conducted (Decree no: 2020-01/04). Verbal and written consents (online form) were obtained by informing the participants that the homework they prepared for the course would be examined within the scope of a research and that the obtained data would only be used for research purposes. The names of the participants were kept confidential and numbers were used instead of names in the excerpts.

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ORIGINAL ARTICLE

Interventions for adapting health care providers to new situations in the workplace during the COVID-19 pandemic: A scoping review for developing a policy brief

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Abstract

The rapid change in the conditions of health care centers following the sudden onset of the COVID-19 pandemic led to work challenges and role changes and the transfer of staff to new and unfamiliar workplaces. This study aimed to develop policy interventions to adapt health care providers to the new situation in the workplace during the COVID-19 pandemic. A systematic literature review was carried out using international databases to identify English-language studies to identify policy interventions. The viewpoints resulting from the observations of the research team and seven health system experts were used to categorize the interventions. Three main policy interventions were identified: creating a flexible and efficient system through modifying personnel roles, adequate training of health care personnel about work conditions when treating COVID-19 patients, and creating a supportive and motivating work environment.

KEYWORDS

acclimatization, COVID-19 pandemic, critical care, health care provider, health services research

Key points

- The rapid change in health care centers following the COVID-19 pandemic crisis due to changing procedures and policies by the government and other health institutions and the immediate formulation of new policy decisions has created significant challenges for health care providers to adapt to unfamiliar and stressful workplaces.

- Due to the lack of comprehensive and consistent policy interventions to adapt health care providers to the problematic conditions of the new work environment during the COVID-19 pandemic, the current policy document was developed with three policy options.
- Three main policy interventions were identified: (1) creating a flexible and efficient system through modifying personnel roles, (2) adequate training of health care personnel about work conditions when treating COVID-19 patients, (3) creating a supportive and motivating work environment.
- While highlighting each intervention's potential benefits and challenges, the identified interventions in our study provide key policy directions for adapting health care providers to the new workplace conditions during the COVID-19 pandemic and other future crises.

INTRODUCTION

The COVID-19 pandemic has undoubtedly been one of the most significant crises in the last 50 years (Davison, 2020). The pandemic made an unprecedented impact on the workplace and various organizational practices and forced millions of people worldwide to change their work patterns (Richter, 2020). The outbreak has also challenged the health care sector worldwide, leading to unprecedented and unexpected pressures on the health care system (Carroll & Conboy, 2020). Significant changes have taken place in the provision of health services, including the cessation of routine services, changes in clinical settings, the transfer of staff to unfamiliar and new work environments, recruitment of physicians and nurses who had no infectious disease expertise to provide care to patients with COVID-19, and the rationing of equipment and services in some cases (Denning et al., 2020). To respond to these immediate changes, there was little time to decide how to prepare to reduce the sudden impact of the COVID-19 pandemic on the health care centers, staff, and patients. It was necessary to determine the assignment of COVID-19 patients and hospitalization units and create new staff teams and manage their roles (Catania et al., 2021).

PROBLEM STATEMENT

Following the sudden onset of the COVID-19 pandemic and the rapid change in the conditions of health care centers, the development of new management policies and the need to modify the provision of care in unusual ways created significant challenges for health care provision and management in health care centers (World Health Organization, 2020). Challenges of health care personnel caused by new and different working conditions include multiple responsibilities and roles, increasing workload, working long hours with personal protective equipment, working in unfavorable conditions with COVID-19 patients, fear of becoming infected or infecting others, and worrying about performance at work or making mistakes (Denning et al., 2020; Huh, 2020; Irandoost et al., 2020).

Work challenges, role changes, and transfer of staff to new and unfamiliar workplaces are stressful and further affect individuals' mental health. This affects the performance and efficiency of the staff and organization (Cipolotti et al., 2021). On the contrary, traumatic events or adverse conditions during natural disasters, crises, and pandemics may lead to burnout (Chemaliali et al., 2019). As stress in the workplace leads to mental fatigue, depression, and a decreased sense of personal success, burnout is associated with adverse effects on the decision making of clinical care staff and on patients (Peikes et al., 2019).

Regardless of the nature of the job, the adaptation of employees to new conditions in the workplace is considered a challenging event in their lives. The main focus of this process is usually to help the newcomer to adapt and accept the habits and procedures of the organization (Gajda, 2015). Therefore, the health care personnel's physical safety and mental stability should be a priority (Kim & Choi, 2016). In this regard, the establishment of psychological coping workgroups and support platforms for comprehensive support of health care professionals and experts may play a role in meeting the needs of staff and maintaining their mental health (Alizadeh et al., 2020; Huh, 2020). Employees should be able to achieve shared goals through transparency and cooperation at all levels of the system; through maintaining the benefits of the system and creating a solid and sustainable health care system, employees can respond quickly to unpredictable and ever-changing environmental challenges (Knowles et al., 2020). Plans and policy interventions must be adapted to the new circumstances, and they should support the staff to overcome the COVID-19 pandemic crisis (Cipolotti et al., 2021). Eradicating the pandemic requires sustainment of the health care workforce through actions that mitigate stress, promote resilience, and enhance performance (Morganstein & Flynn, 2021). Thus, due to a lack of adequate support by health care officials for health care personnel (Delgado et al., 2020); an increase in the necessity of immediate support strategies for health care personnel during the COVID-19 pandemic; and a lack of evidence-based interventions to adapt health care providers to the new imposed work environment, this study aimed to develop interventions for adapting health care providers to the new situation in the workplace during the COVID-19 pandemic so that health system planners and policymakers may develop and implement action plans with more confidence in their choice of interventions.

METHODS

This policy brief reports practical interventions to adapt health care providers to the new workplace situation during the COVID-19 pandemic in Imam Reza hospital affiliated with Tabriz University of Medical Sciences, Iran. Imam Reza Hospital is one of the largest hospitals in Iran and the reference hospital in the northwest of the country, which comes to this hospital from many neighboring countries. Identifying policy options consisted of two main phases. First, a systematic review was conducted considering (1) the target population (COVID-19 health care workers), (2) intervention (measures taken to change the working environment to adapt health care workers to critical conditions), and (3) the outcomes (reducing psychological, physical, and social effects and coping with a new work situation). A literature review was carried out using databases, including PubMed, Scopus, ProQuest, Science Direct, and Cochrane Library, to collect data. The keywords used were “health care provider,” “health care workers,” “employee adaptation,” “professional adaptation,” “climate change adaptation,” “human resources management,” “managing roles,” “COVID-19,” “SARS-CoV-2,” “critical care,” and combinations of the keywords. A manual search was conducted to review a number of reputable journals. In addition, the references of the selected articles were also searched. The search was limited to studies published between December 2019 and January 2021. Articles published in English in this time period whose full text was available and which dealt with the adaptation of health care providers to the new workplace situation during the COVID-19 pandemic or related issues were included. Papers presented at conferences, seminars, and educational papers without paper review processes and papers published in less creditable journals were excluded. After careful study of the full text of the articles, all the interventions used to adapt health care providers to the new work environment during the COVID-19 pandemic were identified and extracted. Finally, to categorize the interventions and present policy options, seven specialists consisting of one director of an educational and medical center treating patients with COVID-19, two hospital managers, two faculty members of the health policy department, and two health care providers were also consulted by face-to-face interviews to comment on policy interventions according to the criteria of effectiveness, feasibility, appropriateness, sustainability, flexibility, and cost-effectiveness.

Twenty-five interventions were extracted from the literature (Table 1). After consulting the experts, the general classification of interventions and strategies was conducted by

TABLE 1 Provided strategies based on information extracted from a systematic review of the literature

1. Defining supporting roles for personnel during the pandemic (Barba et al., 2020; Griffin et al., 2020)
2. Adjusting the work schedule of health care providers based on the workload and specialty of the staff (Billings et al., 2020; Gao et al., 2020)
3. Forming a multidisciplinary crisis management team (Barba et al., 2020)
4. Eliminating routine clinical services and all unnecessary activities of personnel (Maben & Bridges, 2020; Sim et al., 2020)
5. Quick transfer of personnel from areas with extra personnel to areas in need (Sim et al., 2020)
6. Transferring clinical staff of administrative positions to clinical departments if possible (Hick et al., 2020)
7. Identifying qualified personnel who have work experience in critical situations, cardiorespiratory, and intensive care and prioritizing their transfer to COVID-19 wards (Thomas et al., 2020)
8. Planning to increase human resources with the increase in the number of COVID-19 patients (Sim et al., 2020)
9. Deciding at the hospital level to reduce elective and unnecessary clinical services (Sim et al., 2020)
10. Reviewing and determining the duties of employees to improve appropriate responses to demands (Hick et al., 2020)
11. Needs assessment to identify spaces, staff levels, and responsibilities tailored to clients (Barba et al., 2020)
12. Reaching a collective agreement among the medical team through multiple meetings in the early stages of any action for safe and efficient ward management (Knowles et al., 2020)
13. Performing prophylactic SARS-CoV-2 tests for health care providers (Denning et al., 2020)
14. Providing face-to-face or online training for all health care personnel before starting work in COVID-19-related units in the areas of self-protection knowledge and skills, professional knowledge and skills, and preventive psychological counseling (Li et al., 2020; Thomas et al., 2020; Zhang, 2020)
15. Educating personnel of all units about the characteristics of COVID-19 disease, treatment methods, and care (Irandoost et al., 2020; Sim et al., 2020)
16. Giving step-by-step training to health care personnel, especially physicians and nurses, in the first stage, to prepare them for rapid learning of ICU work skills and working with new ventilators to care for critically ill COVID-19 patients (Griffin et al., 2020)
17. Establishment of a 24-h psychological support system for personnel during the COVID-19 pandemic to receive support, counseling, and psychiatric interventions via telephone call or text (Geoffroy et al., 2020; Griffin et al., 2020)
18. Regular visits of clinical psychologists to COVID-19 units to counsel and review the mental condition of patients and staff and share experiences (Knowles et al., 2020)
19. Allocation of personnel and the assignment of flexible and scientifically appropriate work shifts according to the pandemic and patients' conditions in the COVID-19 clinical wards (Gao et al., 2020)
20. Holding managerial feedback sessions with staff to provide an opportunity for health care workers to participate in workplace decision making (Cipolotti et al., 2021)
21. Holding meetings to transparently and compassionately express leaders' expectations of the staff (Dewey et al., 2020; Hick et al., 2020)
22. Ensuring staff of an adequate supply of protective materials and equipment, proper allocation of human resources and work schedules, and attention to their sleep and rest at work (Dewey et al., 2020; Hick et al., 2020)
23. Considering physical and psychological rewards to encourage and support employees (Cai et al., 2020)
24. Attention and support of the media and people for the medical staff in cyberspace to strengthen their sense of worth and responsibility (Irandoost et al., 2020)
25. Informing employees on anticipated actions, ongoing crises, and reasons for manager decisions (Hick et al., 2020)

content analysis method, and three policy options culturally and ethically appropriate and compatible with our context and the target population were extracted.

RESULTS

This search yielded 1739 articles. The title and abstract were reviewed independently by two reviewers. Out of 189 related articles, after the complete texts were reviewed and were evaluated by two independent reviewers using the critical appraisal skills program and 178 articles were omitted based on inclusion criteria. Finally, 18 completely relevant studies were reviewed (Figure 1).

A list of the policy options for adapting health care providers to new situations in the workplace during the COVID-19 pandemic, advantages, disadvantages, and implementation considerations of each option is provided in Table 2.

Creating a flexible and efficient system with a capacity for personnel role adjustment

Due to the rapid pace of changes, managing individuals and their roles is critical to adapting to a pandemic and requires rapid role adjustment and strengthening of health care personnel to deal with and treat COVID-19 patients in critical situations. One of the

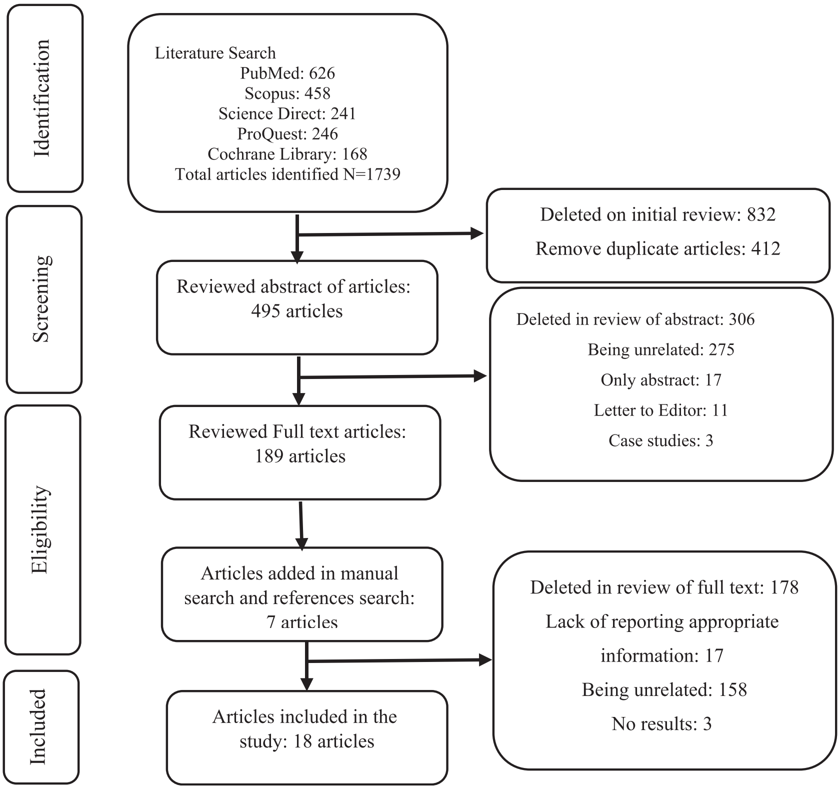

FIGURE 1 PRISMA Flowchart of systematic literature review

TABLE 2 Policy options

Policy option	Creating an activation system of flexible and efficient employees through adjustment of personnel roles	Adequate training of health care personnel about working conditions when treating COVID-19 patients	Creating a supportive and motivational work environment
Advantages	- Improving the efficiency of personnel and increasing their performance - Providing better and more qualified care - Preventing medical errors and adverse outcomes - Providing access to accurate data to guide decision making - Support of personnel for each other in the new critical situation - Reducing staff workload - Increasing the number of employees as COVID-19 cases increase and being responsive to demand in critical situations	- Increasing infection control measures and reducing the risk of infection of personnel in the workplace - Successful provision of safe and effective clinical services - Ensuring the competence of personnel to work in the new conditions and preparing the medical team to care for critically ill COVID-19 patients	- Reducing patients' stress, improving the mental health of staff working in the new work environment, and overcoming fear - Promoting the physical and mental health of personnel and improving the quality of care during the COVID-19 pandemic - Creating a positive mentality in employees about their work and their ability to cope with stress in a new work environment - Preventing fatigue and burnout during the weeks or months of the epidemic - Increasing the motivation of staff to work in a new and stressful environment
Disadvantages	- Limited time to decide how to prepare health care centers to deal with the COVID-19 crisis - Need to increase financial resources - Resistance of personnel to transfer to an unfamiliar and stressful environment - No licensing for elective clinical services	- Lack of access to equipment, training materials, and the Internet - The need for human resources for systematic training of personnel - The need for interdisciplinary coordination and cooperation	- The need for cooperation of psychiatrists and clinical psychologists with the organization - The need for competent employees to work in critical situations - Need for financial resources - Impossibility to hold in-person meetings with staff due to the special conditions of COVID-19
Implementation considerations	- Forming a support team by changing the role of personnel and defining new duties (Barba et al., 2020) - Setting the work schedule of personnel to ensure the presence of young and inexperienced personnel	- Providing a half-day centralized training session on potentially harmful situations and working environment conditions by the center training unit in cooperation with the associated faculties in person or online for all	- Establishing an independent permanent telephone line with the ability to divert to psychiatrists' mobile phones for 24-h staff access to receive psychiatric interventions in case of psychotic symptoms

(Continues)

	alongside specialized and experienced personnel (Billings et al., 2020; Gao et al., 2020) - Establishing effective communication at different levels of clinical and nonclinical staff by creating a team and teamwork (Barba et al., 2020; Catania et al., 2021; Thomas et al., 2020) - Reducing the volume of routine work and eliminating all unnecessary activities of employees (Maben & Bridges, 2020; Sim et al., 2020)	novice front line personnel before starting work in the corona ward (Li et al., 2020; Thomas et al., 2020; Zhang, 2020) - Providing training for the personnel of the units based on the specialized field and place of activity in relation to the characteristics of the COVID-19 disease, treatment methods, and course of care (Sim et al., 2020)	(Geoffroy et al., 2020; Griffin et al., 2020) - Scheduling daily visits of clinical psychologists to units to consult and review the mental health status of staff and patients and to hold weekly meetings with the optional presence of staff to share experiences (Catania et al., 2021; Knowles et al., 2020) - Setting a flexible shift schedule for clinical unit personnel (Gao et al., 2020) - Direct support of the organization's managers of the staff by holding weekly meetings with the staff in person or online (Heath et al., 2020; Hick et al., 2020) - Encouraging staff by physical and psychological rewards (Cai et al., 2020; Newby et al., 2020)

options suggested by experts was to carefully assess the duties of health care providers and to quickly adjust their roles, including adding reserve personnel and forming new teams to meet increased demand. Evidence shows that health care providers are not prepared enough to handle a large number of clients with COVID-19 disease during peak seasons and are suggested to use volunteer staff from other centers to provide treatment. For this purpose, defining supporting roles for some personnel during the pandemic can be effective. These roles include assisting front-line personnel, providing information to families through the patient portal program, providing COVID-19 PCR (polymerase chain reaction) test results to the attending physician or nursing supervisor to manage hospital beds, identifying team members to follow up patients at home, coordinating care actions with primary care providers and nursing homes, and identifying occupational health personnel to monitor infected staff (Barba et al., 2020; Griffin et al., 2020). On the basis of individuals' workload and specialized fields, health care managers should ensure practical work and adjust the work schedule of personnel by placing mid-level and inexperienced personnel alongside experienced or specialized personnel in the health care units (Billings et al., 2020; Gao et al., 2020). A multidisciplinary crisis management team including health care center managers, nursing managers, preventive medicine and microbiology specialists, and medical, intensive care unit (ICU), and other acute and intensive care unit managers should be formed to come together to discuss existing problems and their solutions for staff to increase communication between various levels of clinical and nonclinical staff to provide the best care (Barba et al., 2020). To increase the capacity of the workforce, in case of an increase of COVID-19 cases, the routine work of clinical services and all unnecessary activities of personnel such as unnecessary compulsory training, evaluations, and job programs should be eliminated (Maben & Bridges, 2020; Sim et al., 2020). Depending on the different levels of staff, these resources should be transferred quickly from areas with extra personnel to required areas (Sim et al., 2020). If possible, clinical staff in administrative positions should return to clinical care positions (Hick et al., 2020). Staff with the potential to work in high-demand work units related to COVID-19 should be identified, and those who have work experience in emergencies, cardiorespiratory, and intensive care should be given priority for transfer (Thomas et al., 2020).

Adequate training of health care personnel about working conditions when treating COVID-19 patients

Training is the main intervention for solving challenges and responding to emergency crises appropriately and effectively (Gao et al., 2020). Training and empowering staff should be done to increase the tolerance threshold or better adapt staff to new conditions. Physicians, nurses, and other health care providers are stressed about working in new situations because of the fear of illness or transmitting it to family members, so training self-care skills can be effective. A half-day centralized training session based on policies and national guidelines in the form of videos, slides, manuals, and illustrations in person or online in the field of self-protection knowledge and skills, professional knowledge and skills, and preventive psychological counseling should be provided to all health care personnel before starting work in units related to COVID-19 (Li et al., 2020; Thomas et al., 2020; Zhang, 2020). Educational content includes using personal protective equipment, hand hygiene, ward disinfection, medical waste management, sterilization of patient care devices, and occupational exposure management (Geoffroy et al., 2020). To successfully provide safe and effective clinical services, unit personnel must be trained on the characteristics of COVID-19 disease, treatment methods, and ways of care so they may report any abnormal cases. For example, radiology technologists should be familiarized with the radiographic features of COVID-19 to examine all chest x-rays for any evidence of pneumonic changes and contact radiologists to immediately report anything abnormal (Sim et al., 2020). In the first stage, to prepare health care personnel, especially physicians and nurses, quick step-by-step learning of the skills of working in the ICU with new ventilators to care for critically ill COVID-19 patients should be provided (Griffin et al., 2020).

Creating a supportive and motivating work environment

A supportive environment means support is received from officials, senior managers, colleagues, and the organization's operational plans for personnel (Kunasegaran, 2016). In order for the personnel to adapt to work in a new environment in which they are exposed to physical and mental health threats (Knowles et al., 2020), a 24-h psychological support system is required for personnel during the COVID-19 outbreak period through an independent permanent telephone line with the ability to divert to psychiatrists' mobile phones, so that personnel with psychotic symptoms can receive the required counseling and psychiatric interventions by phone or text message (Geoffroy et al., 2020; Griffin et al., 2020). A clinical psychologist should visit the units regularly to counsel and review the mental condition of patients and staff and hold weekly meetings with the optional staff presence to share their experiences (Knowles et al., 2020). Allocation of personnel and the adjustment of their work shifts should be flexible and scientifically appropriate to the pandemic and patients' conditions in the clinical COVID-19 wards to reduce workload, improve the quality of care, and promote physical and mental health during the COVID-19 pandemic (Gao et al., 2020). Holding manager-staff feedback sessions provides an opportunity for health care workers to participate in workplace decision-making (Cipolotti et al., 2021). Additionally, in these meetings, leaders must express their expectations of staff transparently and compassionately to promote resilience and self-care and reduce staff stress. They inform personnel of the adequate supply of protective materials and equipment, proper allocation of human resources and work schedules, and attention to their sleep and rest at work (Dewey et al., 2020; Hick et al., 2020). To increase staff motivation to work in a new and stressful environment, encouraging and supporting employees by considering physical rewards such as reducing overtime, reducing working hours, and flexible planning and psychological rewards, such as financial support and payment of compensation to the family in case of staff illness or death due to work, are recommended (Cai et al., 2020). To better manage the working environment during the COVID-19 pandemic and to provide a suitable work environment, management accountability and relationships with employees should be strengthened, tasks and resources should be distributed fairly, and payments need to be adequate and timely and depend on the specific mental and physical conditions of each employee.

DISCUSSION

The rapid change in health care centers following the COVID-19 pandemic crisis due to changing procedures and policies by the government and other health institutions and the immediate formulation of new policy decisions has created significant challenges for health care providers to adapt to unfamiliar and stressful workplaces (Hick et al., 2020; World Health Organization, 2020).

Due to the lack of comprehensive and consistent policy interventions to adapt health care providers to the problematic conditions of the new work environment during the COVID-19 pandemic, the current policy document was developed with three policy options based on local and global evidence gathered through a systematic literature review and consultation with national experts. Most of the studies that have been conducted on the adaptation of personnel to the new and challenging work environment in times of crisis have been mainly about the lack of a supportive work environment (Catania et al., 2021; Denning et al., 2020; Heath et al., 2020; Irandoost et al., 2020). A supportive environment requires support from the organization officials, senior managers, colleagues, and operational plans. Therefore, organizational structure, culture, leadership style, rewards, and benefits help employees adapt to a new work environment (Kunasegaran, 2016). Other studies have mentioned creating a crisis management team, that is, a support team with clear plans and flexible employees (Barba et al., 2020; Griffin et al., 2020; Hick et al., 2020). Chemali et al. (2019) showed that creating support groups to provide an environment where people freely share their information and experiences effectively reduces burnout and helps people adapt to the workplace (Chemali et al., 2019).

Increasing the number of employees and training personnel is also mentioned as an intervention in this field (Sim et al., 2020; Thomas et al., 2020). Timely, thorough, realistic, and updated training that prepares health care workers for anticipated exposures optimize safe task performance and reduces the stress of uncertainty (Brooks et al., 2018). In a study, Ghannam et al. (2020) reported the effect of stress management training as a 1-day workshop on burnout of health care providers (Ghannam et al., 2020). Darban et al. (2016) also mentioned the effect of communication skill training as a 2-day workshop on burnout

(Darban et al., 2016). Thus, upgrading flexibility skills, that is, changing workplace dynamics, communication skills, and problem-solving skills through training significantly increases employee adaptability to a new work environment (Muema, 2019).

Four strategies have been proposed to prepare different groups of health care personnel to work in the COVID-19 pandemic crisis: (1) An intensive care medical team should be created for the treatment of patients admitted to the ICU using intensive care experts and specialists from all fields, (2) results of research conducted by faculty members on COVID-19 should be provided to clinical service providers, (3) nursing staff should be trained in working skills necessary for critical situations and intensive care units, and (4) nonclinical staff of units related to the COVID-19 patients should be appreciated and supported (Griffin et al., 2020). Adaptation should occur when there is a change at the organizational level, like changes in job descriptions, goals, values, and technological advances, or when one feels that change individually (Muema, 2019). Therefore, to empower health care providers while maintaining the system's benefits and creating a solid and sustainable health care system to respond quickly to unpredictable and ever-changing workplace challenges, policies need to be tailored to new working conditions and the staff support necessary to manage the COVID-19 pandemic crisis.

Limitations and future studies

In this study, only texts published in English were included. Thus, texts in other languages and unpublished data on the adaptation of health care providers to the new work environment during the COVID-19 crisis and pandemic were not reviewed. In addition, in the present study, due to the possibility of infection through infected individuals and the difficult working conditions of health care providers during the COVID-19 crisis, it was impossible to explore policy options through focus group discussion with experts in person.

Future research is suggested to examine the practicality and effectiveness of the policy options proposed in the present study and prioritize them in terms of efficiency and effectiveness.

CONCLUSIONS AND POLICY IMPLICATIONS

The interventions should be practical, up-to-date, evidence-based, targeted, flexible, and context-specific to adapt health care providers to new situations in the workplace during the covid-19 pandemic. Creating a flexible system by adjusting personnel roles, training health care providers, and creating a supportive and motivating work environment are the main policy options presented in our study. While highlighting each intervention's potential benefits and challenges, the identified interventions in our study provide key policy directions for adapting health care providers to the new workplace conditions during the COVID-19 pandemic and other future crises.

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CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

ETHICS STATEMENT

The data, models, and methods used in this study are not proprietary and no human participants were involved in this study.

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World Medical and Health Policy

Knowledge and Attitudes About Type 2 Diabetes Among Female Nursing Students in Saudi Arabia

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We evaluated current knowledge and attitudes about type 2 diabetes among female students pursuing nursing degrees at one university in Saudi Arabia in 2018–19. The majority of the 87 respondents were aware of risk factors for type 2 diabetes, such as obesity (95 percent) and age (93 percent). Most participants were also aware that diabetes can cause complications such as blindness (88 percent), kidney disease (77 percent), and heart disease (67 percent). However, only about half believed that type 2 diabetes is a very serious disease (47 percent), and many believed that people with diabetes who do not use insulin have mild disease (61 percent) and do not need to worry about long-term complications (36 percent). Addressing these misperceptions, perhaps with education that combines the cognitive and affective domains, will prepare these rising professionals to provide better patient care in the coming years as Saudi Arabia seeks to reduce its epidemiological and economic burden from diabetes.

- *Saudi nursing students are knowledgeable about diabetes complications yet may not consider diabetes to be a serious disease.*
- *Nurses who do not perceive diabetes to be a serious condition may be underprepared for clinical practice even if they are knowledgeable about the disease.*
- *Health education that connects the cognitive and affective domains may close gaps between knowledge and perceptions.*

KEY WORDS: diabetes, type 2 diabetes, health attitudes, staff attitudes, nursing students

Introduction

Diabetes is a growing global health problem that affects an estimated 463 million adults worldwide (International Diabetes Federation [IDF], 2019). The Middle East has the highest prevalence of diabetes of any world region, and Saudi Arabia has one of the highest prevalence rates of any country in the Middle East (IDF, 2019). A reported 18.5 percent of Saudi Arabian adults have diabetes (IDF, 2019), and the prevalence is increasing (Alotaibi, Perry, Gholizadeh, & Al-Ganmi, 2017; Robert & Al Dawish, 2020).

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As a response to this growing public health concern, the Saudi Arabian Ministry of Health has included a diabetes education and awareness campaign as part of its 2030 Vision initiative (Kingdom of Saudi Arabia [KSA], 2020). Health-care workers play a central role in providing education about diabetes prevention, diagnosis, and management to patients and their families. In this study, we assessed current knowledge and attitudes about type 2 diabetes among female students pursuing nursing degrees in Saudi Arabia. Identifying possible gaps in knowledge among these rising professionals may enable improved preparation for patient care in the coming years as Saudi Arabia seeks to reduce its epidemiological and economic burden from diabetes.

Materials and Methods

We developed a 64-question survey instrument that included 10 questions about demographics and study eligibility, 15 questions about personal and family history of diabetes and other health conditions, 10 questions about general health and risk behaviors, 14 Likert-scale questions adapted from the Michigan Diabetes Research and Training Center (MDRC) Diabetes Attitude Test (Anderson, Fitzgerald, Funnell, & Grupen, 1998), and 15 questions about diabetes knowledge that were adapted from the MDRC Diabetes Knowledge Test (Fitzgerald et al., 1998). The questionnaire was translated from English into Arabic and pilot tested prior to implementation.

In December 2018, after the study protocol, questionnaire, and consent statement were approved by the research ethics committee of Taibah University in Medina (Madinah), all of the approximately 405 nursing students enrolled at Taibah University were sent an email with an invitation to volunteer to complete an online survey. To ensure the anonymity of the participants, the data collection form did not ask for any identifiable information. Data were collected from consenting volunteers through April 2019. To be eligible for inclusion in the analysis, respondents had to indicate that they were currently enrolled female nursing students at Taibah University. Data were analyzed using Epi Info statistical software.

Results

In total, 87 eligible individuals completed the questionnaire. A large percentage of the participants reported having a parent (63 percent), grandparent (55 percent), sibling (21 percent), or other relative (78 percent) with diabetes, with 85 percent reporting having at least one family member with diabetes. Nearly half (49 percent) reported having at least one friend with diabetes. Most had been tested for diabetes themselves (81 percent), and three had been told they had diabetes.

Nearly all participants believed that individuals have personal responsibility for preventing the onset of type 2 diabetes through healthy eating and physical activity (96 percent) and for preventing adverse outcomes of diabetes after diagnosis (93 percent). There was a high level of awareness that type 2 diabetes is related to overweight and obesity (95 percent) and that consuming too much sugar in food and drinks contributes to causing diabetes (80 percent). About half

(48 percent) of respondents believed type 2 diabetes can be reversed. Most respondents were aware that the risk of type 2 diabetes increases with age (93 percent), but also understood that it can affect children (64 percent). Some participants incorrectly considered type 2 diabetes to be a genetic disorder that is passed from parents to children (41 percent), some thought that type 2 diabetes occurred when the body stopped making insulin (31 percent) or thought that people who have type 2 diabetes have an increased risk of hearing loss (24 percent) and cancer (16 percent).

The majority of participants were aware that the complications of type 2 diabetes include blindness (88 percent), kidney disease (77 percent), and heart disease (67 percent). Most also believed that people with type 2 diabetes often feel weak and tired (72 percent). However, only 47 percent of the participants believed that type 2 diabetes is a very serious disease. More than half (61 percent) agreed that people who do not need insulin to manage their diabetes have mild disease. More than one-third (36 percent) agreed that people who are managing their diabetes solely with dietary modifications do not need to worry about long-term complications.

Discussion

There may be a gap between knowledge of diabetes and perceptions of diabetes among young adults in Saudi Arabia, including health professions students. Knowledge about type 2 diabetes was generally high in our study population, and much higher than among the general adult population (Alanazi et al., 2017; Aljoudi & Taha, 2009; Alqahtani et al., 2017; Mohieldein, Alzohairy, & Hasan, 2011), youth (Al-Mutairi, Bawazir, Ahmed, & Jradi, 2015), and people with diabetes (Fatani et al., 2018) living in Saudi Arabia, as is expected for a survey of students who are preparing to work as clinical health-care professionals. However, even though most of the participants in this study understood that type 2 diabetes can cause serious complications, there was also a misperception that most cases of type 2 diabetes are mild.

The Health Belief Model describes health behavior change as a function of perceptions about susceptibility to the disease, severity of the disease, the benefits of the behavior change, and the barriers to enacting behavior change (Rosenstock, Stretcher, & Becker, 1988). Based on this study, Saudi nursing students perceive their susceptibility to diabetes—and the susceptibility of their future patients—to be high, and they consider diabetes interventions to be beneficial and feasible to implement. The participants expressed a strong awareness of the association between diet, exercise, and diabetes prevention, and they expressed confidence that individuals can prevent and manage diabetes. The major barrier to promoting and supporting behavior change related to diabetes is that nursing students in this study perceived the severity of diabetes to be low, even though Saudi adults with type 2 diabetes often have high levels of concern about the complications of the disease (Albargawi, Snethen, Gannass, & Kelber, 2016) and may experience a reduced health-related quality of life (Al Hayek, Robert, Al Saeed, Alzaid, & Al Sabaan, 2014) and symptoms of depression related to the condition (Alzughbi et al., 2020; El Mahalli, 2015).

Health behavior changes are most likely to be implemented and maintained over time when individuals have the support of their families, communities, and health-care providers. Adults who believe that type 2 diabetes is generally not a serious disease are unlikely to take steps to reduce their own risk of diabetes or to manage diabetes well after onset. Similarly, nurses and other health professionals who do not perceive type 2 diabetes to be a serious threat to health are unlikely to strongly encourage family members and patients with diabetes to manage their blood sugar levels better.

Improved communication about the severe complications that are likely to occur if diabetes remains uncontrolled for many years may be a valuable component of preparing nursing students to help improve diabetes prevention and management in the Kingdom of Saudi Arabia (Aldossary, While, & Barribal, 2008). Epidemiological "burden of disease" studies seek to quantify the adverse impact of a health condition (or group of conditions) on a population, including the short- and long-term disability caused by the condition and the years of life lost to early deaths from the condition. Similar types of studies are conducted by health economists who seek to quantify the direct and indirect costs associated with adverse health conditions, including medical costs and lost income for individuals with illnesses and disabilities and for family members who may be unable to work because of caregiving responsibilities. If health professions students are taught more about the burden of disability and premature mortality from complications of type 2 diabetes—if they are more aware of how often uncontrolled diabetes progresses, over time, to cardiovascular disease, neuropathy, nephropathy, retinopathy, vision loss, and amputations, and they understand the psychosocial as well as economic costs of these complications for patients, families, communities, and nations (Chan, Lim, & Wareham, 2020)—they may be better prepared to teach their patients about the importance of preventing the complications of diabetes and to support patients who choose to adopt healthier lifestyles (Robert et al., 2017).

Limitations and Bias

This study was limited by a small sample size and the inclusion of students from only one university. The use of quantitative methods meant that respondents could not fully explain their perspectives about diabetes risks, severity, management, or patient responsibility for prevention and self-care. The results of this study should be interpreted with caution until they are verified by follow-up studies with larger numbers of participants from several universities.

Conclusions and Policy Implications

This study's results suggest that young adults preparing for clinical careers may have strong scientific knowledge of diabetes but have the misperception that type 2 diabetes is a relatively mild condition because it is so prevalent. If family members and friends have diabetes but have not yet experienced severe complications from the disease, students may not realize that there is a significant risk of disability and premature mortality over time.

As Saudi Arabia seeks to reduce its diabetes burden by 2030, it may be helpful to develop educational materials that explain the short- and long-term damage to the human body that can be caused by uncontrolled diabetes. The best way to encourage clinical health students to understand and internalize this message might be through learning activities that combine the cognitive and affective domains, shaping knowledge and attitudes simultaneously (Valiga, 2014). Health-care providers, patients, and families all need to be aware that type 2 diabetes is a serious threat to health so that they will be motivated to prevent it when possible and to manage it after onset.

The pattern that we observed pertaining to diabetes in Saudi Arabia may apply to many other diseases and disorders in countries around the globe. This study suggests that gaps between knowledge of any adverse health condition and attitudes about the importance of preventing, diagnosing, treating, and managing that disease may reduce the effectiveness of clinical care professionals, trainees, and students. Health education programs should seek to connect teaching and learning in the cognitive domain (knowledge) with the affective domain (perceptions and attitudes) to best prepare rising health professionals for highly effective practice.

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Notes

Conflicts of interest: None declared.
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ORIGINAL ARTICLE

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Evaluating the impact of a social medicine course delivered in a local-global context: A 10-year multi-site analysis

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Abstract

Amidst the COVID-19 pandemic and social uprisings demanding social and racial equity worldwide, there is an increasing demand for health justice training for health workers. However, there are scant evidence-based assessments of the impact of such courses. Between 2010 and 2020, SocMed—a 501(c)3 non-profit social justice organization—offered two distinct courses about health equity, the social determinants of health, and social medicine to health workers through the University of Minnesota in Minneapolis, Minnesota and Saint Mary Hospital Lacor in Gulu, Uganda. This study assesses the immediate impact of the SocMed curriculum on participants measured by a pre-course and post-course survey. In Minnesota, paired pre-course and post-course survey responses (mean $n = 69$; $SD = 23$) spanned years 2016–2019, while Uganda paired pre-course and post-course survey responses (mean $n = 64$; $SD = 21$) spanned years 2012–2013 and 2017–2019. Findings indicate that the course improved participants' knowledge in all 24 of the topics in the Minnesota course and 42 of 44 topics in the Uganda course (significant at $p < 0.05$).

KEYWORDS

global health, health equity, medical education, social medicine

Key points

- Amidst the COVID-19 pandemic and social uprisings demanding social and racial equity worldwide, there is an increasing demand for health justice training for health workers. However, there are scant evidence-based assessments of the impact of such courses.
- Quantitative findings suggest a gain of knowledge in our learners across various topics about social medicine and health equity. This content knowledge forms the basis of structural analysis and is integral to critical consciousness-raising amongst trainees.

BACKGROUND

As the world faces the raging COVID-19 pandemic and a worldwide reckoning with racial and social injustices, we are intensely reminded that systemic racism and other forms of structural oppression kill. Amidst this context, there is a renewed interest in health justice educational opportunities that equip health workers with the skill sets and knowledge required to recognize, analyze, communicate, and act against these forces of oppression within and outside healthcare systems (Lawrence, 2020; Weiner, 2021). In response, different approaches have been developed to address the need for more health justice training in medical school (2020). These approaches include but are not limited to formal coursework on racial disparities and antiracism in medicine (e.g., see the AAMC, 2021), structural competency training (e.g., see Metzl & Hansen, 2014), curriculum on global health equity (e.g., see Drobac & Morse, 2016), and courses on social medicine (e.g., see the Department of Global Health and Social Medicine at Harvard University and the University of North Carolina Chapel Hill School of Medicine Department of Social Medicine).

In evaluating the impact of social and health justice-oriented courses, Metzl et al. (2018) examine the effects of an interdisciplinary pre-health curriculum, titled Medicine, Health, and Society (MHS), at Vanderbilt University. These authors utilized the Structural Foundations of Health Survey to evaluate structural skills and sensibilities of students who participated in the course ($n = 185$) with two groups who did not participate in the course: (1) pre-medical science majors ($n = 63$) and first-semester freshmen ($n = 91$). Metzl et al. (2018) conclude that undergraduate pre-medical students who participated in the MHS course identified and analyzed relationships between structural factors and health outcomes at higher rates and in more profound and more nuanced ways than their peers who did not. Furthermore, these authors found that students who participated in the MHS course demonstrated a greater understanding of structural and implicit racism and health disparities than their non-MHS seeking peers. Civitelli et al. (2020) conducted a quantitative questionnaire-based study measuring the long-term impact of a health justice course for pre-health students and health workers in Italy. These authors concluded that participation in their course and the interactive pedagogies used in the course were perceived to activate students to pursue personal and professional opportunities to engage with the social determinants of health compared to students who did not participate in their course.

Taken together, Metzl et al. (2018) and Civitelli et al. (2020) suggest that pre-health students and health workers who participate in health justice courses possess a greater understanding of racism, health disparities, and the relationship between structural factors and health outcomes than their peers who did not participate.

Although there is a growing body of course offerings on the social determinants of health and health equity, the data on the impact of these courses is still limited. Our study contributes to this growing body of literature on the impact of social and health justice-oriented courses on participants' knowledge and attitude. Based on the curricula designed on social medicine principles, we hope to inspire other medical educators and researchers by offering the lessons learned, and recommendations from the evaluation of a social medicine course taught for 10 years in two distinct locations: Twin Cities, Minnesota and Gulu, Uganda.

Social medicine in medical education

Social medicine education originated in both Latin America and Europe (Waitzkin et al., 2020; Westerhaus et al., 2015) and demands health workers to be be aware of and take action againstthe social, political, economic, and structural factors contributing to poor health (Finnegan et al., 2017). Social medicine education has an explicit focus on "identifying and affecting the root social determinants of health and working upstream to address the causes with the greatest impact on population health (Finnegan et al., 2017, p. 348). Furthermore, social medicine education "demands a continuous orientation toward social justice, [and] requires an understanding of and efforts toward social change, specifically through social movements and health activism" (Finnegan et al., 2017, p. 348). To date, there are few social medicine courses offered around the world (Westerhaus et al., 2015). The courses that do exist are offered through Harvard Medical School's Blavatnik's Institute for Global Health and Social Medicine, the University of North Carolina's School of Medicine Department of Social Medicine, and SocMed's annual courses through the University of Minnesota's Center for Global Health and Social Responsibility and Lacor Hospital in Gulu, Uganda. This paper will examine the courses offered through SocMed.

SocMed courses

SocMed is a 501(c)3 non-profit social justice organization founded in 2011 by a group of U.S. and Ugandan colleagues that aims to expand the conversation on and engagement with the social determinants of health and health equity through education and movement building around the world. Between 2010 and 2020, SocMed offered courses on social medicine and the social determinants of health in Gulu, Uganda and Twin Cities, Minnesota for a continuum of health workers. Participants in both course sites included academic health science students and community members. Furthermore, participants in each course come from various racial, ethnic, and socioeconomic backgrounds. The participants in the Uganda course were both local Ugandan participants and international participants from the African continent, Europe, and North America.

SocMed adaptation to local contexts

SocMed utilized a curriculum that places significance on building unique partnerships and encouraging students to reflect upon their personal experiences with power, privilege, race, class, gender, and sexual orientation as central to significant partnership building in global health. The course curriculum and content pays attention to the histories of the host communities and situates their history to global phenomenon. This allows for the learners to discern their understanding of social systems within a local-global context. In the spirit of praxis, a model of education that combines critical reflection with action, the course components allow students to examine their role in global health and social medicine through facilitated, in-depth conversations with core faculty and student colleagues.

Course and program evaluations in the context of medical education

Broadly, in medical education, course and program evaluation remains critical but understudied and underutilized (Bhanji et al., 2012). Course and program evaluations support educators in improving pedagogical techniques and ultimately seek to improve student learning and patient outcomes (Bhanji et al., 2012). Often, comprehensive course and program evaluation are not feasible due to barriers such as lack of time and funding (Bhanji et al., 2012). Traditional pretest and posttest (TPP) self-assessment methods are often used as an assessment approach to analyze students' comfort with and knowledge about various course topics and achievement of various course outcomes (Hufford, 2010; Moyo, 2009). Pretest and posttest self-assessments seek to measure student learning by comparing results from tests conducted before and after a course (2010; 2009). This type of self-assessment identifies progress or mastery of desired learning outcomes among students in the course and ascertains the "value-added" by the course (2010; 2009). Critics of this assessment approach argue that the approach may be susceptible to the "response shift bias" (Howard & Dailey, 1979; Howard, 1980) or deflation of the pretest score and subsequent inflation of the posttest which, ultimately, would contaminate results (Howard & Dailey, 1979; Howard, 1980). However, withstanding these critiques, the authors of this paper contend that utilizing a pretest and posttest assessment is useful as it allows for an identification of learning (Bhanji et al., 2012).

METHODS

Data for this study was gathered using a pre-course and post-course paper-based survey instrument. The pre-course and post-course surveys were designed with the purpose of program/course improvement. The survey instrument was administered by teaching assistants in collaboration with course fellows before and after each course in a paper (2011–2019) and electronic (2020) format. Students were assigned anonymous codes to protect their anonymity and to reduce social desirability bias. Participation in the course evaluation process was voluntary. In this paper, we present aggregated findings from an analysis of a multi-year course evaluation data. The researchers sought approval from the University of Minnesota Behavioral Ethics Institutional Review Committee (IRB). The IRB deemed this study exempt.

Questions in the pre-course survey and post-course survey instruments consisted of 20 Likert scale questions about self-reported knowledge regarding specific learning objectives stated in the SocMed social medicine course. Likert scales were ranked from 1 (no knowledge on the topic) to 10 (expertise on the topic). Each of the questions was based on a specific learning objective stated in the respective module. All modules were tested in both the pre-course and post-course survey. The surveys between the Minnesota course and the Uganda course had substantial overlap and only varied slightly as several topics in the course structure were location-specific (e.g., the social and economic context of Northern Uganda, gentrification in Twin Cities).

Additionally, the characteristics of the respondent (sex, year of birth, nationality, degree course, current work, or study situation) were collected. Data collected from pre-course and post-course survey instruments were also used as part of an ongoing process of reflection for the course instructors. Quantitative variables were expressed in absolute and percentage frequencies. Data were analyzed using Python's SciPy package. Descriptive statistics were generated, and the change in the mean level of knowledge per topic from pre-course to post-course was tested using paired two-sided *t* tests at 95% confidence interval (Virtanen et al., 2020). Only responses with both pre-course and post-course scores were included in the paired two-sided *t* tests; varied sample sizes across topics (Tables 1 and A3) account for

TABLE 1 Description of topics surveyed in both locations and mean change in score

		Minnesota			Uganda		
Topic	**Description**	***N***	**Mean score change**	***p***	***N***	**Mean score change**	***p***
Allostatic Load Theory	The cumulative wear-and-tear of social context that can produce adverse effects on the human body (Duru et al., 2012)	75	4.91	4.52e−25	80	6.90	6.11e−45
Narrative Medicine	The practice of "thoughtfully examin[ing] who is telling a story and how they are telling the story (with a focus on how and who is defining health), to listen intentionally, and to share stories both between and within communities" (Pallai & Tran, 2019, p. 23)	60	3.62	8.58e−14	26	5.41	5.52e−12
Neoliberal Economics	The examination of how neoliberal economics, including structural adjustment programs and policies, affect individual and community health, healthcare access, and healthcare delivery	75	3.24	2.52e−16	80	4.75	1.02e−29
Colonialism and Medicine	"Colonialism is defined as the policy or practice of acquiring full or partial political control over another country, occupying it with settlers, and exploiting it economically. In both its historical and ongoing forms, colonialism is a structural determinant of health that has deeply impacted the health of indigenous and other communities throughout the world. Often considered a historical phenomenon, colonialism persists today through ongoing settlement in many parts of the world, perpetuating and affecting oppressive power dynamics and mentalities and extractive institutional policies and practices. Health care has consistently been on the frontlines of advancing colonial projects over time, whether it is provided to soften hard edges by winning hearts and minds; create hierarchies for population control, or sustain a supply of productive labor. Recent campaigns and movements to "decolonize global health" have been challenged by calls from Indigenous advocates who maintain that decolonization must involve land and power redistribution." (Equal Health, n.d., Roadmap to Teaching Social Medicine)	74	3.05	1.37e−18	80	4.69	1.67e−26
The Arts in Response to Social Justice	The utilization of the arts, including theatre, as a tactic for social change	75	4.27	4.06e−26	80	3.84	7.55e−23

TABLE 1 (Continued)

		Minnesota			Uganda		
Topic	**Description**	***N***	**Mean score change**	***p***	***N***	**Mean score change**	***p***
Structural Violence	A form of violence in which a social structure, such as policy or institution, include hospital and clinical settings, harms individuals and communities by preventing them from meeting their basic needs (Galtung, 1969)	75	3.28	3.84e−16	80	4.01	2.41e−23
Models of Global Health Intervention	"Utilizing Paul Farmer's analysis (which is rooted in the work of Paolo Freire), three main philosophical bases for addressing human suffering—charity, development, and social justice—are analyzed by students in small groups, with pros and cons of each being discussed. The primary aim is to understand the critiques of charity- and development-based paradigms and the centrality of a social justice-based approach to the practice of social medicine." (Equal Health, n.d., Roadmap to Teaching Social Medicine)	75	2.49	3.13e−15	139	3.95	1.08e−43
Social Change/Social Movements	"Harnessing the power of collective interest, social capital and grassroots activism, social movements have a rich history in social medicine and advancing health equity. Health-based social movements (HSMs) share a common history with historical social movements (i.e., US Civil Rights Movement, Antiapartheid Movement, etc.) using direct action, self-empowerment, and self-education to mobilize grassroots advocacy from the bottom up. They also centre the voices of those directly affected by health inequities to spur social change and health equity at a larger scale. Relevant case studies include AIDS Coalition to Unleash Power (ACT UP) and South Africa's Treatment Action Campaign (TAC)." (Equal Health, n.d., Roadmap to Teaching Social Medicine)	75	2.07	9.65e−14	80	3.65	1.05e−24
Role of Community Health Workers	"Building local capacities and agencies requires that community members be empowered and incorporated as "local technocrats," so they effectively address their issues. In the process of rolling out population- and community-centred social	75	1.95	1.23e−09	80	3.02	1.94e−22

(Continues)

TABLE 1 (Continued)

Topic	Description	Minnesota			Uganda		
		N	Mean score change	*p*	*N*	Mean score change	*p*
	and health solutions, social medicine emphasizes a "bottom-up approach" to empower communities as architects of their solutions. Community-centred solutions facilitate uptake, utilization, and sustainability and can lead to social and behavioral changes. Community health approaches have utilized community health workers as a "bridge between the needs, interests and knowledge of technocrats, government, and policymakers and local communities." (Equal Health, n.d., Roadmap to Teaching Social Medicine)						
Social and Economic Determinants of Health	"The social determinants of health (SDOH) are the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. The SDOH can be grouped into five domains: economic stability, education access and quality, healthcare access and quality, neighborhood and built environment, and social and community context." (CDC, n.d.) Additionally, the social medicine course pays particular attention to the macro and microeconomic determinants of health.	76	2.20	7.83e−15	138	2.83	9.03e−32
Community-Based Primary Healthcare	"Covers the broad range of primary prevention (including public health) and primary care services within the community, including health promotion and disease prevention; the diagnosis, treatment, and management of chronic and episodic illness; rehabilitation support; and end of life care. It involves the coordination and provision of integrated care provided by a range of health providers, including nurses, social workers, pharmacists, dietitians, public health practitioners, physicians and others in a range of community settings, including people's homes, healthcare clinics, physicians' offices, public health units, hospices, and workplaces. It is delivered in a way that is person- and population-centred and responsive to economic, social, language, cultural and gender differences" (CIHR, n.d.)	75	2.25	3.71e−11	139	2.53	6.66e−09

TABLE 1 (Continued)

Topic	Description	Minnesota			Uganda		
		N	Mean score change	*p*	*N*	Mean score change	*p*
Qualitative Approaches to Health	Participants are exposed to various qualitative approaches to understanding health, including ethnography, participant observation, in-depth and group interviewing techniques. Additionally, participants discuss the benefits of including qualitative approaches to understand better the unique strengths, challenges, and opportunities of their patients or communities they serve.	75	1.51	2.11e−09	79	2.44	1.03e−14
Constructive Dialogue (skill-based)	Participants learn the principles and core tenants of constructive dialogue, paying particular attention to nonviolent communication strategies.	75	1.69	3.11e−08	80	2.39	2.76e−17
Advocacy (skill-based)	Participants learn how to engage in advocacy efforts on a variety of social and political topics. Participants are exposed to the theory behind social movements and strategies for organizing around various advocacy efforts.	74	1.58	1.57e−08	80	2.01	5.10e−14
Cross-Cultural Collaboration (skill-based)	Participants learn the theory behind cross-cultural communication and collaboration and are placed into racially and ethnically diverse small groups to carry out project-based activities.	75	1.41	1.94e−07	80	1.76	4.45e−12
Resiliency and Self-Care	"In these sessions, we acknowledge the intensity of social justice work, the risk of burnout, detachment and trauma, and ways to navigate these challenges through reflection, healing, and community. We also acknowledge the deep discomfort and potential for unintentional harm in exploring these topics in a group where members hold different experiences of privilege and oppression across multiple axes. We, therefore, aim to equip students with concrete tools and practices to aid in their self-examination, as well as to address situations in which harm is caused. Additionally, we seek to create intentional spaces where students feel safe exploring their vulnerabilities, as well as offering and receiving care from the community." (Equal Health, n.d., Roadmap to Teaching Social Medicine)	75	0.91	6.56e−04	80	1.59	2.04e−09

missing responses. Data visualizations were generated with Python's Seaborn package (Waskom, 2021).

RESULTS

Demographics

Between 2010 and 2020, 386 participants participated in SocMed courses in Uganda and Minnesota. Of these, 215 (55.7%) completed both the pre-course and post-course surveys. The questionnaires that were missing values either from the pre-course or the post-course survey were not considered in this analysis. In the Minnesota course, most course participants self-identified as female (67.5%) and identified as white (55.8%). In the Uganda course, the majority of course participants self-identified as female (53.9%) and identified as other (39.0%) or white (31.9%). The higher percentage of students identifying as "other" in the Uganda course is likely related to how the meaning of race shifts across social contexts. Often students who wrote "other" included their tribal affiliation.

The detailed demographic information of all participants who completed the pre-course and post-course survey can be found in Tables A1 and A2 in the Appendix section. Additionally, Figure A1 in the Appendix section compares the demographics of each year's course composition. No notable demographic differences were observed across years.

Change in knowledge

Results from the pre-course and post-course surveys suggest that participants in both course locations have significant increases in self-reported knowledge across a wide variety of topics. In the Minnesota course, all 24 surveyed topics had significant changes (at $p < 0.05$) in self-reported knowledge, while 42 of 44 surveyed topics had significant changes in the Uganda course (Tables 1 and A3). The mean change in knowledge for each of the topics was significant at ($p < 0.05$) (Tables 1 and A3). Figure 1 illustrates pre-course and post-course survey distributions of Likert scores for the 16 topics that were surveyed in both locations. These 16 topics were highly significant at $p < 0.001$ in both locations. Additionally, three major trends among topics covered in both locations were noted in the analysis of the quantitative results and are discussed in the subsequent paragraphs.

Trend 1: Greatest mean change in scores

The greatest mean change (as measured as a change in 3.0 Likert scale points or more in both locations) in participants' self-reported knowledge was observed across the following topics: allostatic load theory (Minnesota: 4.91; Uganda: 6.90), narrative medicine (Minnesota: 3.62; Uganda: 5.41), structural violence (Minnesota: 3.28; Uganda: 4.01), the neoliberal economics (Minnesota: 3.24; Uganda: 4.75), colonialism and medicine (Minnesota: 3.05; Uganda 4.69), the arts in response to social justice (Minnesota: 4.27; Uganda 3.87), and structural violence (Minnesota: 3.28; Uganda: 4.01). These topics are often never covered in formal pre-health and health professional training (Westerhaus et al., 2015). Thus, the authors suspect that this drastic jump in self-reported knowledge of these five topics was due to the learners being exposed to the topic for the first time in the social medicine course. We expound on this further in the discussion section. While the remaining topics did not have as large of a change between pre-course and post-course survey scores,

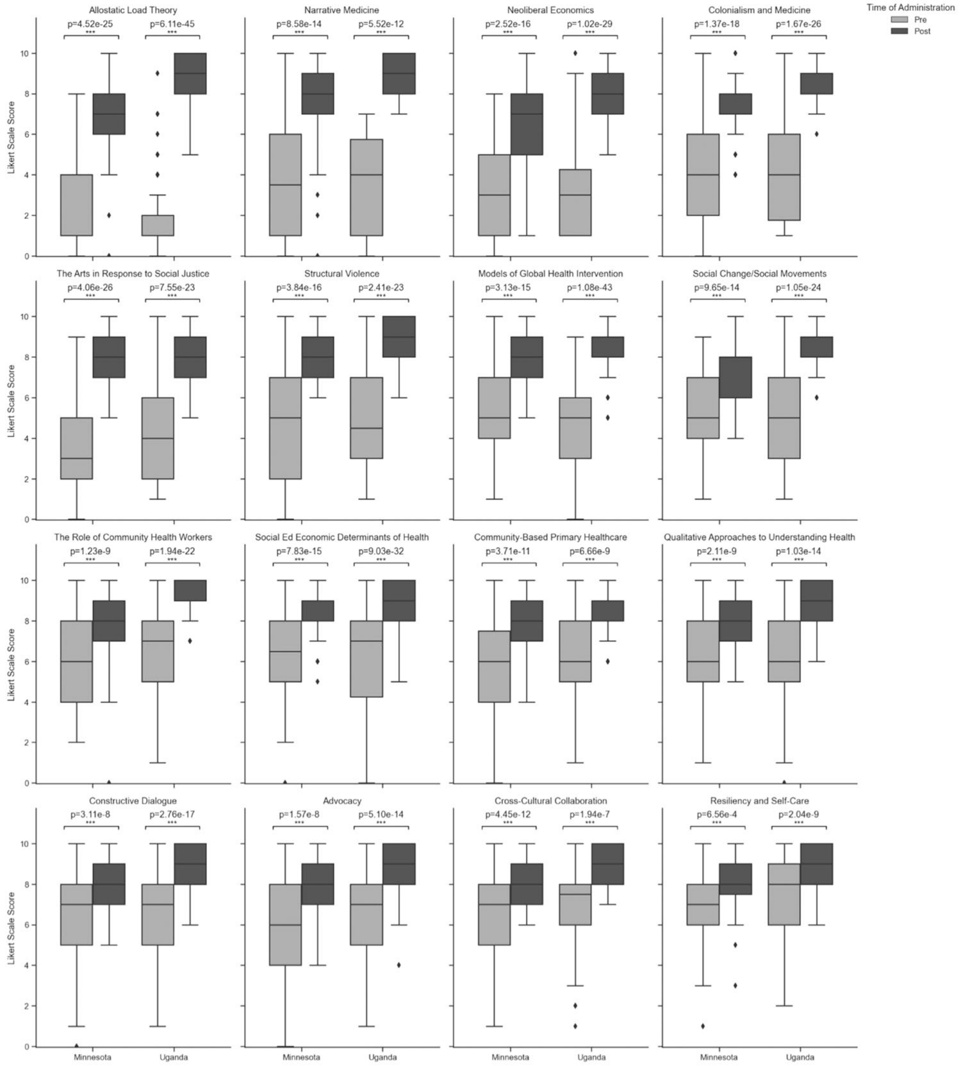

FIGURE 1 Pre-course and post-course distribution of survey scores for topics surveyed in both locations

it is noteworthy that all of the additional topics had significant score changes typically greater than 1 point. This smaller change between pre-course and post-course survey scores could be attributed to the fact that learners had previously been exposed to the topic and this course served as a mechanism to deepen their understanding of the topic.

Trend 2: Greater change in score in Uganda than in Minnesota course in most topics

Except for one topic, there is a greater observed mean change in score in the course in Uganda versus the course in Minnesota. On average, the mean change in score was roughly 1.50 Likert scale points higher for the Uganda course than in the Minnesota course.

Trend 3: The arts response to social justice as an outlier

In comparison to the other topics, the topic "Arts Response to Social Justice" had a greater mean change in score in the Minnesota course versus the Uganda course by 0.43 points. While that is a small difference, it is worth noting as it does not fit the trends of the other topics.

DISCUSSION

It has been shown that the inclusion of training and curricula on health equity and the social and structural determinants of health improves health workers' understanding of the various barriers faced when accessing healthcare and reduces implicit biases, which may ultimately affect patient outcomes (Carnethon et al., 2020; Perdomo et al., 2019). The aim of this study was to investigate the short-term impact of a social medicine course offered in two distinct locations, as measured by self-reported knowledge and comfort on various topics pertaining to social medicine, health equity, and the social and structural determinants of health recorded in a pre-course and post-course assessment. This is one of the first longitudinal surveys of the subject.

The most important finding is related to the increase in familiarity and comfort with topics pertaining to social medicine, health equity, and the social and structural determinants of health. Our findings suggest that learners who participate in the social medicine course have a greater self-reported change in knowledge and deepened sense of familiarity and confidence on such topics. This is demonstrated by the significant increase in self-reported knowledge in all of the surveyed topics in the Minnesota course and 95% of the surveyed topics in the Uganda course. A common barrier to health professional engagement on these topics—with colleagues, students, leaders, and patients—is that they do not feel comfortable with such topics (Sandesara et al., 2020). They thus avoid them in patient conversations, shy away from a critical examination of them, and are less likely to engage health system leaders. This is often fueled by the lack of attention to social and structural forces in mainstream curricula in health professional schools.

As indicated by Kiguli et al. (2011), attempts to reform health professional curricula in Uganda to address systemic issues in access to care to improve population health have not yielded. To date, implementing this vision remains inconsistent. The majority of the current curricula have focused on biological and behavioral knowledge with the associated interventions. This is not unique to developing nations. In Canada, physicians, nurse practitioners, and nurses who provide care to homeless populations were reported to have a limited understanding of how to address social determinants (McNeil et al., 2013) that drives the differential exposure to health hazards.

In the wake of inequities exposed by the COVID-19 pandemic, recognizing the demeaning impact of the social and structural forces and acting now by equipping health professionals through curricula reform is a matter of urgency. Exposure to topics pertaining to social and structural determinants of health is an important way to increase awareness, motivate action, and inspire personal and social responsibility to redress health injustices (Civitelli et al., 2020). Expanding comfort and familiarity with social and structural determinants among health professionals open the door to sustained, career-long engagement and is a very worthy goal of introductory courses on such topics.

Additionally, these results demonstrate that a similar core curriculum, when appropriately adapted to diverse local contexts, can have a similar impact on learners in very different contexts (northern Uganda and Twin Cities, Minnesota). For example, the results from both sites were relatively similar as demonstrated in Figure 1. When institutions worldwide seek to develop a new or more robust curriculum on such social medicine-type content, our results would indicate that we should avoid recreating the wheel in every setting. Developing de novo curricula is a tedious, time-consuming process. Rather than expending copious energy figuring out the core context, educators should direct their energy towards how they can adopt a core set of topics to the nuances and particularities of their own historical, social, political, and cultural context.

CONCLUSION

This study offers an evaluation of a unique social medicine course and its immediate and long-term impacts on participants in two distinct sites. Our quantitative findings suggest a gain of knowledge in our learners across various topics about social medicine and health equity. This content knowledge forms the basis of structural analysis and is integral to critical consciousness-raising amongst trainees. More research is needed to explore the long-term impact of social medicine coursework on promoting health worker participation in collective efforts for social change.

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CONFLICT OF INTERESTS

The authors declare no conflict of interest.

ETHICS STATEMENT

The Institutional Review Board at the University of Minnesota deemed this project as exempt.

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Amy C. Finnegan is a sociologist whose teaching and research interests include social movements and social change, peace and conflict, global health, human rights, medical sociology, globalization and health policy, service learning, and African studies. She is also the co-director of SocMed, a non-profit organization that advocates for and implements global health education in the pursuit of justice and equity through immersion courses in northern Uganda and now, Haiti. As a program officer, researcher, activist, and teacher, Finnegan has been involved in work related to Uganda for the past 13 years. She has previously taught at the University of Minnesota-Rochester, Tufts University, Boston College, and Gulu University in Gulu, Uganda. She completed her Ph.D. from Boston College in 2011, where her dissertation focused on insider and outsider activist efforts for peace in northern Uganda. She has an MA from the Fletcher School of Law and Diplomacy at Tufts University and a BA in Political Science and Spanish from Washington University in St. Louis.

Michael Westerhaus aims to understand and respond to structural forces in society that create poor health and health inequities. As a primary care clinician at the Center for International Health, he seeks to bear witness to the lived experience of refugees in order to support their efforts to overcome barriers to health. As an educator with the organization SocMed and as a member of the Global Medicine Faculty at the University of Minnesota, he teaches social medicine and utilizes experiential and action-based methods to elevate the critical consciousness of health professionals. He also serves as Program Director for the BRIIDGE program, which prepares international medical graduates for successful entry into US residency training programs. As a founding member of the Social Medicine Consortium, he leads efforts with a global community of partners who utilize social medicine education and strategic community organizing to mobilize power to advance health equity. He received his medical degree from Harvard Medical School in 2006 and completed the Global Health Equity residency at Brigham and Women's Hospital in 2010. He also received a Master's in medical anthropology from Harvard University in 2005.

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APPENDIX

Tables A1; Tables A2; Table A3; Figure A1

TABLE A1 SocMed participants in Minnesota 2016–2019

Variable	*N*	%
All persons		
2016	17	100.00
2017	21	100.00
2018	24	100.00
2019	15	100.00
Total	77	100.00
Total sex distribution		
Female	52	67.53
Male	23	29.87
N/A	2	2.60
Total age distribution		
18–24	20	25.97
25–34	35	45.451
35–44	9	11.69
45–54	5	6.49
55–64	7	9.09
65+	0	0.00
N/A	1	1.30

TABLE A1 (Continued)

Variable	N	%
Total continent of birth distribution		
Africa	9	11.69
Asia Pacific	8	10.39
Central & South America	1	1.30
Europe	1	1.30
Middle East	4	5.19
North America	54	70.13
Total race distribution		
White	43	55.84
Hispanic or Latino	3	3.90
Black or African American	11	14.29
Asian/Pacific Islander	14	18.18
Other	6	7.79
Total class distribution		
All	77	100.00
Upper	5	6.49
Upper Middle	22	28.57
Lower Middle	33	42.86
Working Class	11	14.29
Poor	2	2.60
N/A	4	5.19
Total training distribution		
Medical School	14	18.18
Resident Physician	9	11.69
Physician	0	0.00
Public Health Student	19	24.68
Public Health Practitioner	5	6.49
N/A	12	15.58
Other	18	23.38

TABLE A2 SocMed participants in Uganda 2011–2019

Variable	*N*	%
All persons		
2012	31	100.00
2013	28	100.00
2017	26	100.00
2018	27	100.00
2019	28	100.00
Total	140	100.00
Total sex distribution		
All	140	100.00
Female	76	54.28
Male	64	45.71
Total age distribution		
18–24	78	55.71
25–34	60	42.86
35–44	2	1.43
45–54	0	0.00
55–64	0	0.00
65+	0	0.00
Total country of birth distribution		
Africa	79	56.43
Asia Pacific	2	1.43
Central & South America	2	1.43
Europe	3	2.14
Middle East	1	0.71
North America	53	37.86
Total race distribution		
White	45	32.14
Hispanic or Latino	2	1.43
Black or African American	26	18.57
Asian/Pacific Islander	5	3.57
Other	55	39.29
N/A	7	5.00
Total class distribution		
Upper	2	1.43

TABLE A2 (Continued)

Variable	*N*	%
Upper Middle	25	17.86
Lower Middle	66	47.14
Working Class	12	8.57
Poor	14	10.00
N/A	11	7.86
Other	10	7.14
Total training distribution		
Medical School	124	88.57
Resident Physician	0	0.00
Physician	0	0.00
Public Health Student	8	5.71
Public Health Practitioner	0	0.00
Other	8	5.71

TABLE A3 Mean change in score for topics surveyed in only one location

Topic	Location	Mean change in score	Number of participants	p Value	Significance level ($^{ns}p \geq 0.05$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$)
Narrative Health	UG	5.61	54	1.71e−21	***
Social and Cultural Context of Northern Uganda	UG	4.81	80	4.56e−32	***
Social and Cultural Context of Rwanda	UG	4.48	54	1.74e−21	***
Social Context of Northern Uganda	UG	4.14	59	8.42e−18	***
Neighborhoods and Social Cohesion	MN	4.03	38	2.11e−13	***
Theater of the Oppressed	MN	4.00	14	6.01e−04	***
Power and Privilege	UG	3.78	54	2.79e−16	***
Tetanus	UG	3.58	59	5.38e−16	***
Social, Historical, and Cultural Contexts of the Twin Cities/Mn	MN	3.36	75	1.74e−19	***
Residential Segregation and Gentrification	MN	3.14	14	2.40e−04	***
Malaria	UG	3.12	59	4.53e−13	***
Level of Confidence in Social Medicine	MN	3.03	58	1.92e−15	***
Typhoid Fever	UG	3.03	59	2.84e−13	***
Surgery in Resource-Poor Contexts	UG	2.86	59	5.75e−11	***

(Continues)

TABLE A3 (Continued)

Topic	Location	Mean change in score	Number of participants	p Value	Significance level ($^{ns}p \geq 0.05$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$)
Forms of Health Activism	UG	2.75	59	2.53e−16	***
Health and Human Rights	UG	2.75	59	2.53e−16	***
Schistosomiasis	UG	2.47	59	1.69e−09	***
Hepatitides	UG	2.32	59	2.55e−10	***
Obstetrical Complications in Resource-Poor Settings	UG	2.25	59	1.45e−09	***
Refugee and Immigrant Issues	MN	2.23	75	1.28e−13	***
Cervical Cancer	UG	2.22	59	1.86e−06	***
Measles/Malnutrition	UG	2.19	59	1.25e−07	***
Acute Respiratory Tract Infections	UG	2.10	59	1.00e−09	***
Writing Letters to the Editor	MN	1.86	14	1.11e−02	*
Ebola	UG	1.75	59	1.62e−05	***
Epilepsy and Nodding Disease	UG	1.68	59	1.87e−05	***
Helminthiasis	UG	1.58	59	5.67e−06	***
Self and Group Reflection. Power Inequalities	UG	0.88	58	5.42e−04	***
STDs	UG	0.86	59	9.29e−05	***
Relationship Building and Networking With Peers in Course	UG	0.75	59	1.10e−03	**
Insight Into Trajectory of Your Personal Career Choices	UG	0.69	59	3.03e−03	**
Level of Interest in Social Medicine	MN	0.67	61	3.77e−05	***
Knowledge Gain on Topics Pertaining to Clinical Medicine in Northern Uganda	UG	0.59	59	4.84e−02	*
Exposure to Context in N Uganda	UG	0.49	59	8.88e−03	**
Knowledge Gain on Topics of Social Medicine	UG	0.32	31	3.78e−01	n.s.
Skill Development Pertaining to Health Advocacy	UG	0.19	59	2.77e−01	n.s.

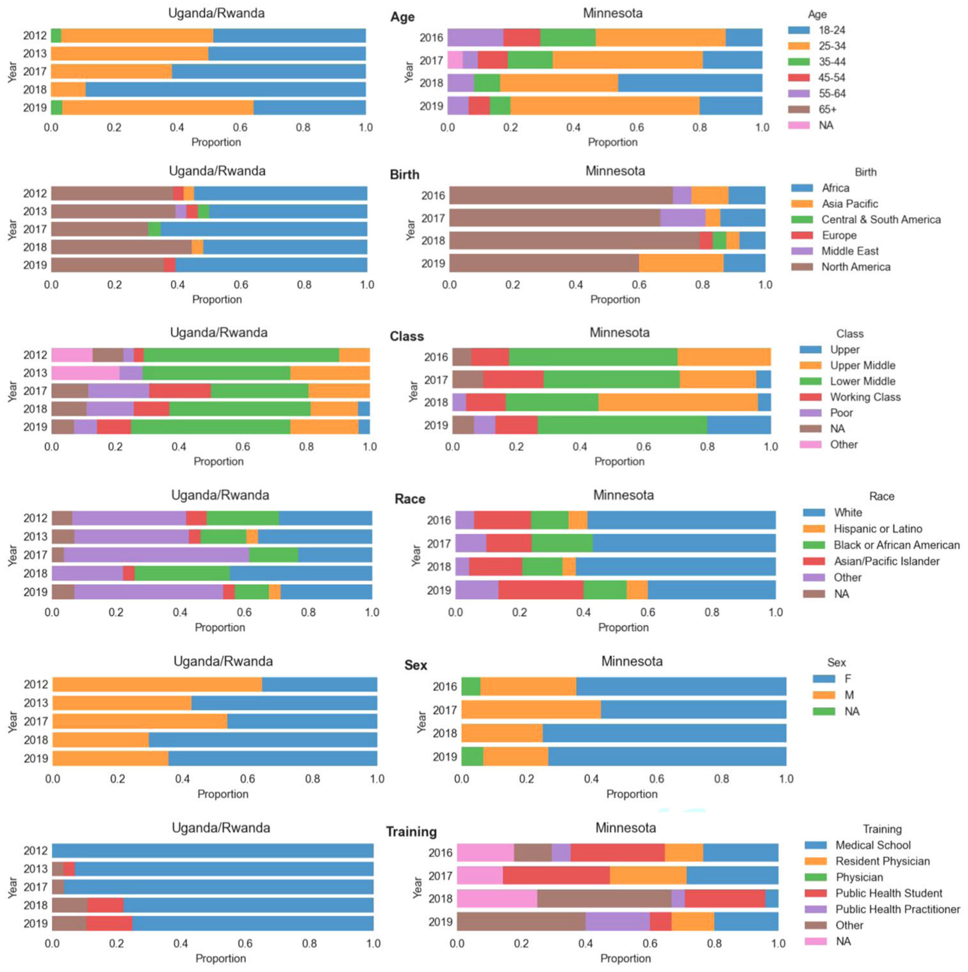

FIGURE A1 Participant demographics from Uganda/Rwanda and Minnesota courses

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ORIGINAL ARTICLE

WMHP WORLD MEDICAL & HEALTH POLICY WILEY

Beyond witnesses: Moving health workers towards analysis and action on social determinants of health

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Abstract

Although critical knowledge of social determinants of health empowers health professionals to confront the causes of inequitable health outcomes, healthcare professionals continue to feel powerless when faced with upstream social and structural issues. Using a case of the social medicine course conducted in Northern Uganda, and the 2016/2017 Uganda medical interns' movement, we examine the significance of social medicine education in enhancing healthcare professionals' skills set to address a structural force—medical internship policy. Data sources included key informants, policy documents, blogs, Facebook posts, and YouTube Videos. Data were analyzed using content analysis techniques. Healthcare workers drawing on critical skills and knowledge from the social medicine course training could perform self- and problem-analysis centered within power dynamics; identify avenues to communicate issues of concern; implement constructive dialog and collaborate with stakeholders to influence and halt a medical internship policy discourse through protest on streets and legal channels. Social medicine training and principles empower health workers to function as actors with the required skills and knowledge to initiate and sustain tactical, effective, and meaningful health advocacy directed towards altering social determinants of health that perpetuate social disadvantage with subsequent impact on population health outcomes.

KEYWORDS
health advocacy, health worker education, social determinants of health, social medicine

Key points

- Learning through critical reflection raises consciousness of healthcare workers on the facets of injustices and the need to act through health advocacy.
- Constructing an understanding of the complex social, economic, and political forces that impact health outcomes; and knowledge of organizing skills can serve to inspire healthcare workers to act to challenge policy/structural discourses that advance health inequities.
- A collective mentality to social determinants of health entails the practitioner identifying a problem/issue and working to understand other persons both within and outside the health structure, who might be interested or are working to address the same or similar issue.
- Implementing a health advocacy project builds self-confidence and motivates healthcare workers to act in the presence of an injustice.

INTRODUCTION

Globally, there is a widespread consensus that social determinants including socioeconomic status, politics, and policies among others, impact population health outcomes (Raphael, 2011; WHO & Commission on the Social Determinants of Health, 2010). The differential exposures to social determinants of health are the push-and-pull forces determining the persistent between and within differences in population health outcomes (Rylko-Bauer & Farmer, 2017). In redressing the social determinants of health, efforts must extend beyond the clinical settings (Andermann, 2016; Raphael, 2011; WHO, 2010). This, however, calls for a reconceptualization of health beyond service delivery (Andermann, 2016; Raphael, 2011). Reconceptualizing healthcare beyond service delivery requires an activated health workforce, one that is equipped with the skills required to analyze, understand, and act towards deconstructing the root causes of poor health outcomes at the individual, community, and societal levels.

Oftentimes, health workers feel powerless and are filled with frustration when attending to patients with underlying social problems within clinical settings (Hubinette et al., 2016). Many are often unsure of the appropriate discourse in such circumstances. Others prefer to avoid discussions on issues of the social determinants of health affecting their patients, defaulting to biomedical and behavioral conversations with subsequent narrowed clinical interventions (Andermann, 2016). These feelings cause demoralization and burnout (Leo Eisenstein, 2018). The feelings of uncertainty on the appropriate course of action and demoralization when faced with the impact of social determinants of health renders health workers complicit and complacent in perpetuating social suffering arising from the differential exposures to unfair social and structural forces.

For health workers, the inability to act on social and structural forces has been attributed to a lack of learning opportunities and mentorship in advocacy, low self-efficacy among health workers, and a lack of sense of community for like-minded health workers to share learning experiences (Andermann, 2016). In response to the state of powerlessness of health workers in the experience of unfair social and structural forces, a critical question thus remains: how can societies and health institutions leverage the expertise of health workers who often witness the differential impact of social advantage downstream? Social medicine, a term coined by Jules Guerin in the 1800s provides a basis to extend the understanding of medicine to address social problems (Madison, 1993; Porta, 2014; Westerhaus et al., 2015). Social medicine operationalizes health as a social product and pays attention to social and economic forces as a gateway to health and well-being.

Principles of social medicine include community involvement, social epidemiology, disease prevention, political action, and the organization of services (Social Medicine Consortium, 2016). Contemporary advocates of social medicine, such as Paul Farmer, have argued that social and economic injustice including poverty and inequalities in education, employment, and housing are mediators to deplorable health outcomes; and that healthcare professionals are obliged to reduce social ills to improve health at the population level (Farmer, 2003; Rylko-Bauer & Farmer, 2017). As argued by Farmer and colleagues, positioning health workers as actors in redress to social determinants necessitate equipping them with specific skills that facilitate engagement with local civil society organizations and other public health institutions to advocate for the establishment of supportive environments. These particular skills and knowledge can be enhanced through learning opportunities that provide for in-depth analysis of sociopolitical and economic determinants of health centering praxis and partnership to inspire action (Halman et al., 2017). However, limited learning curricula aim to equip health workers with the required skills geared towards critical analysis of the complex interplay of sociopolitical and economic determinants and its impact on health outcomes.

Few of the available studies on learning curricula that aim to address these gaps in health worker education have focused on demonstrating its impact by centering their evaluation on knowledge change (Metzl et al., 2018; Wennerstrom et al., 2018), or change in knowledge and attitude (Civitelli et al., 2020; Voller et al., 2021). Very few, if any, have attempted to demonstrate how this knowledge translates into a real-world action. In the real world, the occurrences of events are often nonlinear, complex, and challenging. This paper aims to fill this gap in knowledge by asking a research question, does social medicine education empower healthcare professionals to enact health advocacy? In doing so, we examine the significance of learning from a social medicine lens in enhancing health workers' skills set to address a structural force—policy that affects economic and human resource distribution within the Ugandan health system (medical internship policy).

The framing of our research question was informed by our experiences as facilitators in a social medicine course consolidated by observing the process of the 2016/2017 Uganda medical interns' movement (more about this in the subsequent sections of the paper). By answering this study question, we hope to contribute to the literature on the application of critical approaches to health worker education and its potential towards building collective competencies as a strategy to challenge social determinants by health workers. The next section of this paper addresses the methodology we undertook to answer the study question.

METHODS

This study followed a qualitative case study approach. Case study methods favor the utilization of multiple sources of data to illuminate an in-depth understanding of the phenomenon (Stake, 2006). To facilitate a deep understanding of the case, the process of health advocacy enacted by healthcare professionals, the paper draws on multiple sources of data. Sources of data included newspaper articles, YouTube videos, Uganda medical internship policy documents, institutional websites, Facebook pages, and key informant

TABLE 1 Categories of data sources reviewed

Data source	Number	Author (s)
YouTube videos	6	Bagzy (2016), Arinaitwe (2016), NTVUganda (2016a, 2016b, 2016c), WBS TV Uganda (2016)
Policy documents	2	Ministry of Health (MOH) (2014, 2016)
Facebook	2	Segawa (2016)
Blog	1	Parliament Watch (2016)
Newspaper articles	5	Anderah (2016), Business Guide Africa (2016), Nanyonjo (2016), Watera (2016), Wesaka (2016)

interviews. In addition, we also draw on our knowledge as healthcare professional educators with experience in implementing a social medicine course.

Data sources such as YouTube videos and newspaper articles were retrieved using a targeted google search. Key search terms included “Medical Interns Advocacy”; “Uganda Medical Interns Movement”; Uganda Medical Interns’ Advocacy; and “Uganda Medical Interns’ Strike.” The authors also reviewed one blog from the Parliament of Uganda and performed targeted individual Facebook page reviews. For the Facebook page review, we sought verbal consent of the persons whom we anticipated to have posted some information about the medical internship movement at the time. Only videos, articles, or posts published between August 7, 2016 and January 1, 2017, accessible through our search strategies, were considered to form data for this study. We applied these dates because the movement idea was conceived on August 5, 2016 and lasted till late December 2016.

All reviewed data sources were related to the events of the 2016/2017 Uganda medical interns’ movement. In total, we reviewed seven YouTube videos; five newspaper articles; two policy documents; two Facebook pages; and one blog. Table 1 shows the data sources in their respective categories. One question (what is the main argument presented in the piece?) was applied across all data sources to aid data extraction. Data analysis was inductive and aimed at identifying points of similarities and differences across data sources with emphasis on the reasons for the emergence of the medical interns’ movement. Data on medical interns’ argument informed our review of the Uganda medical interns guiding policy document, which was provided to us by a contact (not published). The purpose here was to corroborate the interns’ argument with what was in the Uganda medical internship proposed policy document. A comprehensive analysis of the medical internship policy document is beyond the scope of this paper.

For key informants, purposive and snowball sampling was employed to recruit participants. Key informants needed to have been an alumnus of the Uganda social medicine course and one of the leaders of the Uganda medical interns who played a role in the commission and pursuance of the medical interns’ movement. Six key informants were identified using these criteria and were separately reached through their email addresses. Participants were asked to respond by email to two questions:

1. What concepts discussed/used in the social medicine course did you find most useful and applicable in the intern mobilization?
2. What skills did you develop through the social medicine course that you applied in the intern movement?

Out of the six participants who were identified as meeting the inclusion criteria for key informants, only three replied by email. No one declined via email. The low response rate may have been because of busy schedules and lack of internet access. Data analysis was inductive and followed a thematic approach.

We provide a brief background of the social medicine course conducted in Uganda with a focus on building health advocacy knowledge and skills. Whereas health advocacy skills are cumulative and integrated all through the 3 weeks of the social medicine course that we highlight in this paper, we carve one aspect that consolidates health advocacy knowledge and skills acquired throughout the course. This study forms part of a larger study that aimed to evaluate the impact of the social medicine course conducted by SocMed (Now Equal-Heath) and received a behavioral research ethics exemption from the University of Minnesota (Voller et al., 2021, in review).

Next, we provide a description of the Uganda social medicine course, and the findings from the analysis of our aggregate data. In the "Discussion" section, we focus on the relevance of the advocacy skills and knowledge acquired through the Uganda social medicine course in the initiation and execution of a health workers' movement. We conclude with lessons learned and a message to the medical education and health equity community.

THE CASE OF THE UGANDAN SOCIAL MEDICINE COURSE

Since 2011, groups of 30 interprofessional health worker students—medicine, nursing, pharmacy, and public health—from Rwanda, Zimbabwe, Uganda, the United States, Canada, Lebanon, and Mexico have gathered annually to attend a month-long social medicine course. The course is organized and implemented by SocMed (now EqualHealth) and held at Lacor Hospital, Gulu—Northern Uganda (SocMed, 2011). Northern Uganda is a region with over 20 years of historical trauma arising from the Lord Resistance Army (LRA) rebel activities and cattle rustling. The conflict is historical and has been attributed to regional exclusion in politics, economics, and social services since the colonial period (Finnström, 2008; United Nations Development Program [UNDP], 2015). The social medicine course draws on the local context of Northern Uganda to examine the impact of histories, sociopolitical and economic factors on health system designs, and health outcomes at local and global levels.

The course contents are delivered through an amalgamation of innovative multimedia teaching pedagogies such as Augusto Boal's Theatre of the Oppressed, cultural immersion and reflection, community visits, and the analysis of films and artworks. Embedded within the guiding principles of the 3Ps—*Personal*, *Praxis*, and *Partnership* (Finnegan et al., 2017), the interprofessional global students in the social medicine class often deeply engage in conversations from a local–global perspective. For more information on the course content, see Appendix A for a simplified version of the course calendar. The course uses the concept of *Personal* to encourage students to familiarize their lived space through critical self-reflection of their past and present experiences. *Praxis* is a term coined by an Italian Philosopher, Antonio Gramsci (Hill, 2009). In the social medicine course, praxis is applied as a concept to encourage nuanced critical reflection with an action component. *Partnership* is a principle for a collaborative framework with attention on assets and liabilities that can facilitate or hinder redress of the complex intersections of social, political, cultural, and economic factors with health outcomes through collective strategies.

The use of 3Ps deepens conversations and encourages self-analysis on experience/encounters with the concepts of social suffering and privilege within social and political systems as a function of society. For more information on the Uganda social medicine course content and its impact on learners' knowledge, see Voller et al. (2021, in review). For details of the pedagogy employed in this cause, see Finnegan et al. (2017). This paper focuses on the aspects of the course that facilitate the development of health advocacy skills and its connection with the Uganda medical interns' movement.

Building health advocacy skills in the Uganda social medicine course

The Uganda social medicine course utilizes the principle of personal reflection and praxis to raise the consciousness of future healthcare professionals on the facets of injustices within social and health systems and the need to act through the practice of health advocacy. With its emphasis on the continuum of the personal, praxis, and partnership, the course fosters health advocacy through a longitudinal integration of advocacy knowledge and skills honed through group activity process. In the first and second week of the course, the content of advocacy skills including root-cause analysis, group work, movement building, and activism are introduced. Constructive dialog and health advocacy in the local–global perspectives are addressed in the second week and continue all through the course. In the third week, a capstone advocacy group project aggregates the health advocacy knowledge and skills.

The group project (capstone) process aims to support students to deconstruct and reconstruct cohesiveness and foster ownership of projects through shared responsibility. In addition, the process emphasizes the need for collaboration with differently resourced actors and the associated complexity, especially when the student groups are urged to consider merging and proceeding to draw on strengths from other groups to advance a project. For more information on how the advocacy group process aids the development of these skills and knowledge, see Appendix B. In the social medicine course, most class projects developed out of this process have thus far aimed at creating awareness and stimulating public discussions on social and economic challenges and their impact on health.

For example, in 2015, the class project was developed into the *Focus15ForHealth* campaign. The campaign aimed at urging the Ugandan government to allocate 15% of the country's national budget to healthcare (Focus15forHealth, 2015). It consisted of a video, a social media campaign–Twitter, Facebook, and WhatsApp–an online petition, and an open letter delivered to Uganda government officials. The summative skills and knowledge arrived at through the course capstone project included open-mindedness, initiating constructive dialog, ownership, focusing, collaboration, utilization of evidence, strategic communication, problem identification, and prioritization.

Completing an intense health advocacy intervention often builds self-confidence among students and acts as a source of motivation to pursue advocacy strategies beyond capstone projects. Among the Ugandan students who often attend the social medicine course, some come to the course when they are in their final year or semester at medical, nursing, or pharmacy undergraduate schools. Upon completing their undergraduate clinical programs, they undergo 1 year of mandatory medical internship—a period of supervised practice. Some of the social medicine graduates have continued to exercise their newly acquired health advocacy skills while serving as medical interns in the Ugandan healthcare system. One of the most recent being the 2016/2017 medical interns' movement, where a number of graduates from the social medicine course took the lead in the movement.

Why the Uganda medical interns' movement?

Medical internship in Uganda is a period of supervised hands-on experience undertaken by graduates from select healthcare professional programs—medicine, nursing, pharmacy, and dental surgery. In Uganda, the program began in the 1950s with the pioneering program being medicine, followed by the addition of dental surgery and pharmacy, with nursing joining in the 1990s (Ministry of Health [MOH], 2014). Medical interns are frontline healthcare providers in most urban and major periurban public hospitals, where many of the patients are poverty-stricken, socially disadvantaged, and are unable to afford private healthcare services. The Government of Uganda through the Ministry of Health is responsible for the recruitment and payment of every medical intern's allowance for 1 year.

Since 2010, medical interns have faced numerous irregularities such as poor working and living conditions; lack of, or inadequate pay; and lack of supervision and direction from MOH (Anderah, 2016; Namagembe, 2017, 2018; Wesaka, 2016). With the recent development of a social movement representing medical interns, their economic and social despair has become public. According to a news report from NTVUganda (2015), medical interns struggle to pay for their rent, transport, food, and clothing throughout the year of mandatory internship. Health workers who are struggling for basic needs cannot be expected to provide compassionate, informed care to their communities. In this context, the lack of basic needs for medical interns directly impacts the quality of care accessed by marginalized populations who often seek healthcare services from public hospitals. For medical interns in Uganda, the challenge has always been on how to recognize an injustice within a system, strategize, and act to disrupt the status quo.

Why the 2016/2017 interns' movement?

The 2016/2017 campaign was implemented by graduates from medical, nursing, pharmacy, and dental surgery schools, who were awaiting internship placement by early August 2016. The purpose was to challenge the Ministry of Health's (MOH) proposed changes to the medical internship guidelines. In our analysis of data from Newspapers, YouTube channels, blog, and Facebook pages, three proposed changes that the interns urged against corroborated with the MOHs proposed internship policy change guidelines. The changes included: (1) introduction of the preinternship exam; (2) only graduates who went to university on government scholarship were to receive internship allowance; privately sponsored graduates were to cater for their living costs while serving as interns in either government or private hospitals; and (3) a mandatory 2-year return service for government service upon completion of internship (MOH, 2016). However, the movement-building messaging centered around item 2 (remuneration of all interns) of the proposed policy changes highlighted above. In line with the remuneration of all medical interns, three key arguments were evident in the documents or videos produced by the interns. These included the proposal was unfair and would cause divisions among interns; the proposed changes contradicted the guiding principles of internship policy; and there was a lack of engagement of key stakeholders including interns in the decision process leading to the proposal (Bagzy, 2016).

In the first argument—the proposed changes were unfair and divisive based on the concept that the MOH was proposing to pay monthly allowances to only medical interns who have completed school under a government scholarship. The interns argued this would impact the legitimacy of other interns and that there would be no source of support for their services, yet all medical interns of the same profession have the same job description. In the second argument—proposed changes contradicted the policy's guiding principles. This argument was nested in the core guiding principles of the internship policy guideline (MOH, 2014). The proposed change on selective remuneration was seen to contradict policy principles I, II, and IV. Principle I speak to equity. Principle II denotes equality and highlights the need for rational access to internship placement by all medical interns. Principle IV indicates that internships must be conducted per the Uganda labor laws, which provide for remuneration for all professional services rendered (MOH, 2014).

In the third argument, the medical interns decried the lack of consultation and engagement of key stakeholders including interns, internship site supervisors, academic institutions, and professional bodies around the proposed guideline (Nanyonjo, 2016;

Watera, 2016; Wesaka, 2016). The interns argued this would directly infringe on the rights to access quality healthcare services especially for the impoverished patients who cannot afford to pay for healthcare in private hospitals. What can be summarized from interns' argument is that the proposed policy changes would result in economic disenfranchisement of a select group of medical interns (healthcare providers) and this would cause a divide and demoralization, impacting the quality of care to their patients. It is against this background that we see the emergence of the Uganda medical interns' movement.

How did the Uganda medical interns' movement unfold and what were its determinants?

The data we use in this section were majorly drawn from key informants. The newspaper articles we reviewed served the purpose to corroborate the narratives from key informants and provided additional details on the process of the movement that we could not capture in the key informants' responses. Data analysis of the key informants' responses revealed three main themes: organizing leadership and framing the argument; dialog processes and building collaborations; and activism. In the next section, we juxtapose findings from key informants' data with relevant elements from the social medicine course content (experiential).

Organizing leadership and framing the argument

In formulating leadership to drive the medical interns' movement, the idea was conceived on a small scale where a few of the medical interns spearheaded a strategy to reach out to their colleagues for a proposed informal meeting. During the meeting, it was agreed to elect a committee to steward engagement with the MOH officials. At this point, medical interns who had completed the social medicine course were elected to key positions and were to proceed to frame the argument. However, the leaders did not have any official communication/information to base their argument. One of the key informants had this to say, "It was still not clear about what we were standing up against. In fact, 90% of the time, our claims were rubbished as mere rumors. But we kept the movement going…" (Key informant, Y). The information interns had on proposed policy changes was based on rumors because the MOH had not released any official communication.

The movement leaders drew on concepts from the social medicine course to aid their analysis of the issue and were able to examine and carve the multilayered context of the proposed policy. "We had to know from the very start what the problem is…is it really a problem, who is affected…what is the root cause…I think problem analysis was a critical skill here" (Key informant X). "I…found root cause analysis very, very important…with the goalpost shifting from MOH…to the foreign aid donors, International Monetary Fund, World Bank and that…" (Key informant, X). The social medicine course emphasizes that before taking any course of action, individuals need to perform self-analysis and examine their situational positioning within the structures of power and privilege, and the issue at hand. The course also emphasizes the need to understand the multiple layers of the intersection of social and structural determinants. Knowledge of the complex interplay of social and structural factors served to build consciousness on the extent of the issue among the medical intern movement leaders and provided the necessary mental strength to withstand the prolonged anticipated engagement. The process of organizing the meeting, formulating leadership, and framing the issue occurred within 7 days, between August 7 and 15, 2016; by August 15, medical interns had initiated a dialog with MOH.

Dialog processes and building collaborations

In the process of creating collaborations, the medical interns found some of the course contents from the social medicine course significant, one of the movement leaders stated, "…key skill that helped in the movement was…constructive dialog skills, which saw many sections of intern/student leaders engage the stakeholders at the MOH, …civil society organizations, parliamentarians…to understand the plight of interns" (Key Informant Z). The interns sought dialog with MOH officials but were denied access. This led to medical interns' leaders seeking opinion and partnership with professional associations including Uganda medical association (UMA), Uganda nurses and midwife union (UNMU), and the Uganda pharmaceutical society; legal firms; media houses; and students' associations. The UMA played a critical role in mediating continued negotiations between the MOH and interns' leaders, including a meeting with the Parliamentary Committee on Health (Business Guide Africa, 2016; Watera, 2016).

Despite numerous attempts to dissuade the MOH from implementing the guidelines, the officials were determined to enforce the guideline. Negotiations hit a deadlock and interns were on the verge of terminating their advocacy initiatives. As reflected in the statement below, the interns' leaders who possessed advocacy skills obtained through the social medicine course became the engine that continued to inspire others to hold together the movement, "some of us…mainly focused on developing strategies and making sure the movement has strategies in place to become successful. I took up…this role" (Key Informant, X). "I …remember participating in dialog with the dean [of the] medical school, participating in the NTV People's parliament among others before we finally hit the road and the court" (Key Informant, Z). The movement leaders continued to encourage their colleagues and other stakeholders on the need to speak against the MOH policy change to draw momentum. The actions culminated in collaborative strategies that aided in drawing a critical mass to their cause. The social medicine course foregrounds collaboration through the principle of partnership to gain power and momentum for effective actions.

Activism

The desire to persist and continue speaking truth and power against the proposed changes prompted the medical interns to seek alternate avenues to air their grievances. As indicated by one of the movement leaders, the interns found the social medicine course session on social movements useful in formalizing their strategies.

> Social medicine courses on social movements played a major role in helping us stay aware of what we were going through and how to deal with it. From knowing what our purpose was, to understanding the stage of growth we were in… (Key Informant, X).

When the MOH failed to agree to the interns' request through dialog processes, the leaders of the movement strategized to engage legislators, and a video crafted by social medicine alumni highlighting the need to halt implementation of the proposed policy guidelines was released and circulated through different social media platforms including WhatsApp, Facebook, and Twitter among others (Bagzy, 2016). The purpose of the video was to rally interns, medical students, and other stakeholders for a march to Parliament (house of legislators). As noted by one of the key informants, leaders who had a background in the social medicine course demonstrated the knowledge of the social change wheel and were able to encourage their colleagues on the different roles they could play in social movements, "when analyzing social change wheel…confrontational strategy. We …found ourselves playing different roles…I

FIGURE 1 Medical interns facing the Ugandan police during a peaceful demonstration on the streets of Kampala. Retrieved from Segewa (2016) and with permission from: https://www.facebook.com/photo.php?fbid=1099045990186660%26set=a.458248217599777%26type=3%26theater

was more of an advocate, organizer and a rebel" (Key Informant, Y). These approaches were successful in instituting a movement, where various student groups joined the movement and participated through moral and financial contributions.

For the first time, this level of the organization saw a countrywide medical interns' protest joined by medical students who marched in solidarity with the interns to the Parliament of Uganda (Nanyonjo, 2016). Figure 1 is a photo of medical interns demonstrating against the proposed policy on the streets of Kampala, Uganda. Attempts by the Uganda police to foil the peaceful march to Parliament generated a public outcry (Mwesigwa, 2017), but the movement leaders with a background in social medicine noted that this was part of their strategy to draw public sympathy towards the cause.

> I remember discussing with my colleagues that the only way we could draw media attention without fail, during our demonstrations was by having the police arrest some of us. And indeed, after laying for them…we had some of our rebels arrested by the police. It was a move well calculated to get us a key deliverable, public sympathy (Key Informant, X)

Despite all the strategies and actions pursued by the medical interns, the MOH could not relent to their cause of the proposed internship policy. However, a group of medical interns led by a graduate of the social medicine course collaborated with a legal firm on a pro-bono basis and sought an injunction against the proposed medical internship policy (Anderah, 2016). This was the first time a group of Uganda medical interns attempted a legal challenge over unfair and oppressive health system policies. The courts issued an injunction against the policy and ordered the MOH to deploy all interns using the 2014 medical internship policy guideline (MOH, 2014). While there was an injunction on the proposed policy, the courts did not rule on the case, which has since been serially adjourned for lack of interest on the part of the MOH.

The medical interns' movement did not only face opposition from external huddles including the MOH, politicians, and the Uganda police. There was internal opposition and discouragement as well, but knowledge of the complex interplay of social structural issues and health advocacy skills served to build resilience to pursue the movement to the very end. As indicated by one of the key informants, "other interns who didn't have the principles of activism didn't support us, in fact, even discouraged us. But after the success, they wished they had the same knowledge as we did" (Key Informant, Y). This statement indicates that the medical interns' movement leaders who possessed both practical and theoretical basis of health advocacy skills were better prepared to navigate the complexities of standing against an established system with multiple levels of complexity. The level of resilience, knowledge, and skills portrayed by the movement leaders served to inspire some of their colleagues.

DISCUSSIONS

In the first section of this paper, we indicated that our approach to this study was informed by the question, does social medicine education empower healthcare professionals to enact health advocacy? Healthcare professionals, owing to their experiences with the impact of health inequities that define poor health outcomes are well positioned to analyze and deconstruct the structural injustices engraved within health systems (Sklar, 2016). What can be learned from the Ugandan medical interns' movement, particularly from those who attended social medicine courses is that constructing an understanding of complex social, economic, and political forces that impact health outcomes while teaching a set of organizing skills can serve to inspire healthcare professionals to act to challenge policy/structural discourses that advance health inequities.

As indicated by White (2012), there is a need for healthcare professionals to engage and challenge the structural-ideological discourses that shape healthcare services. The social medicine course in Uganda aims to achieve conscientization of the mediators for poor health outcomes, and as well strives to foster motivation towards action by integrating advocacy skills as a tool for praxis. The principles of personal reflection, praxis, and partnership utilized throughout the course serve to build an action-oriented mindset. Participants consolidate their newly acquired knowledge and skill through a practical advocacy engagement. The practical advocacy project that students engage with during the course is designed to simulate a real-world advocacy intervention mimicking individual, population, and system-level complexities.

Our study findings demonstrate that the health workers conceptualized health advocacy as a role and practice that cannot be achieved at an individual level but pursued a community and stakeholder approach to influence the policy discourse. Hubinette et al. (2016) and Leo Eisenstein (2018) emphasize the need for collective action towards addressing social determinants of health among health workers. A collective mentality to social determinants of health entails the practitioner noticing a problem/issue and working to understand other persons both within and outside the health structure, who might be interested or are working to address the same or similar issue. According to Hubinette et al. (2016), repositioning health workers from being solo actors in the face of structural determinants to being part of a collective requires development of new skills, attitudes, and abilities. These involve the appreciation of multiple perspectives, integration of an individual's perspective into group norms, and amplification of others' voices. Within collective actions, roles are not fixed but are negotiated in the context of the issue at hand. The perquisite of collective action can only be derived when individuals exercise flexibility and an attitude of dynamism when working to address social determinants of health.

In reference to our study question, the findings indicate that the contents and pedagogy of the social medicine course played a critical role in informing and sustaining the Uganda medical interns' movement. The interns' movement displayed a mastery of skills, open-mindedness, resilience, and effective collaboration and communication strategies. The takeaway message for the readers of this article is about the attitude and mindset with which the healthcare workers approached the issue. Despite several failed attempts, discouragement, and intimidation from colleagues, senior professionals, MOH officials, and politicians (Mwesigwa, 2017), the interns driving the movement stood their ground deploying the right attitude, mindset, skills, and knowledge required to pursue and sustain a movement. In summary, the pedagogical tool utilized in the Uganda social medicine course built conscientization on the facets and drivers of persistent health inequities among its participants; instilled self-confidence; cultivated advocacy skill-oriented competencies; and cultivated an attitude that thrived beyond the course project. These empowered the health workers with the necessary knowledge and skills to act when faced with the unfair health policy that would not only impact their social and economic well-being but also jeopardize the quality of care rendered to populations in times of need.

LIMITATIONS

We acknowledge that the context of the events we describe here may vary from others but the process and skills evident in the event may be transferable. Whereas this study builds on a small cohort of key informants, we addressed this challenge by drawing on multiple sources of information to illuminate a comprehensive understanding of the phenomenon. Case study approaches draw strength from multiple sources of data other than the quantity of participants. Furthermore, key informants were asked to recall past events through an online platform (email), perhaps one-on-one in-depth interviews would have enriched our key informants' data. But it is less likely that this type of reporting may have had a significant effect on the data we gathered.

CONCLUSION

Learning from a social medicine lens emphasizes the need to be critical of socioeconomic, political, and cultural forces that constitute healthcare policy and practice, and empowers professionals with the necessary skills to act. The process of the medical interns' movement presented in this paper demonstrates an enhanced sense of personal and group capacity knowledge and skills applied to address a structural issue. In Uganda, leaders of the medical interns' movement who had a background in social medicine training were able to identify, communicate, organize and advocate against the proposed medical internship policy.

Participants drew on specific skills relating to power analysis, problem analysis such as understanding the root causes of health inequity, knowledge of social movements, and constructive dialog to implement a health advocacy strategy. Social medicine training and principles empower healthcare professionals to be more than just witnesses in the healthcare setting but to function as actors with the required skills, confidence, and knowledge to initiate and sustain a tactical, effective, and meaningful health advocacy activism directed towards changing social determinants of health that shape population health outcomes.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

ETHICS STATEMENT

This study received an ethics review exemption from the University of Minnesota Behavioral Ethics Committee under the study number 1412E58863.

AUTHOR BIOGRAPHY

Alex Olirus Owilli, RN, BScN, MN. Alex is a public health researcher, global health expert, and an internationally trained nurse with experience in clinical and community nursing, health advocacy, and nursing education. He obtained his bachelor's in nursing from Mbarara University of Science and Technology (MUST), Uganda. In 2017, Alex joined the University of Saskatchewan as a Queen Elizabeth Scholar to complete a master's degree in Nursing, and he is currently completing a PhD in Community and Population Health Sciences at the University of Saskatchewan. Alex serves as a member of the core Leadership Council for EqualHealth and Social Medicine Consortium (SMC); Course Director for the Global Health in the Local Context Course offered by EqualHealth; and as a Research Associate with the Urban Public Health Network of Canada. As an educator, Alex utilizes innovative teaching pedagogies to enable health professionals (medicine, nursing, pharmacy, and public health among others) to conceptualize social determinants through the tenets of social medicine in a bid to inspire personal transformation, action, and commitment for health equity. As a researcher, he employs qualitative designs, mixed methods approach, and policy analysis techniques to contribute to science. His research interest is in the areas of Public Health Systems and Services, Public Health Surveillance Systems, Health Equity Lens, Social Determinants, and Maternal Health Services.

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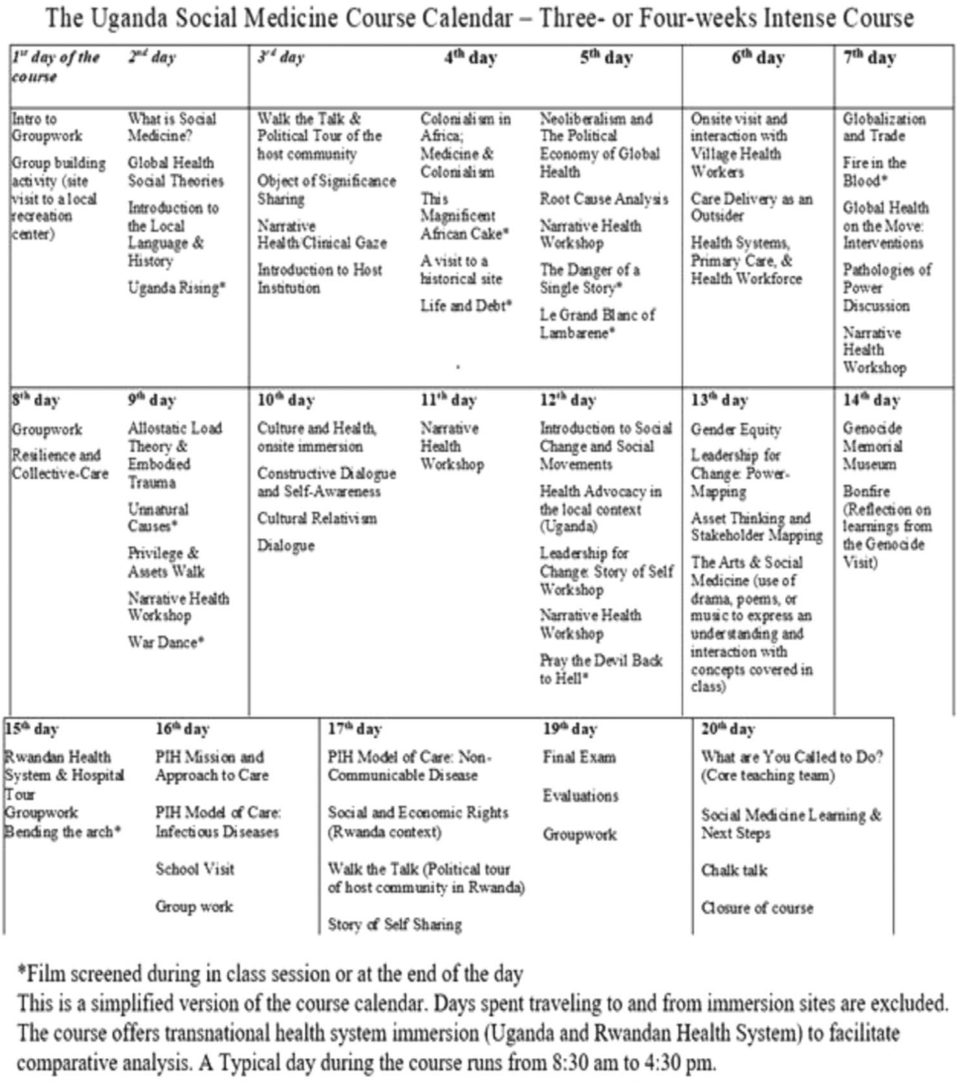
APPENDIX A: SIMPLE VERSION OF THE UGANDA SOCIAL MEDICINE COURSE CALENDAR



The Uganda Social Medicine Course Calendar – Three- or Four-weeks Intense Course

1st day of the course	*2nd day*	*3rd day*	**4th day**	**5th day**	**6th day**	**7th day**
Intro to Groupwork Group building activity (site visit to a local recreation center)	What is Social Medicine? Global Health Social Theories Introduction to the Local Language & History Uganda Rising*	Walk the Talk & Political Tour of the host community Object of Significance Sharing Narrative Health/Clinical Gaze Introduction to Host Institution	Colonialism in Africa; Medicine & Colonialism This Magnificent African Cake* A visit to a historical site Life and Debt*	Neoliberalism and The Political Economy of Global Health Root Cause Analysis Narrative Health Workshop The Danger of a Single Story* Le Grand Blanc of Lambarene*	Onsite visit and interaction with Village Health Workers Care Delivery as an Outsider Health Systems, Primary Care, & Health Workforce	Globalization and Trade Fire in the Blood* Global Health on the Move: Interventions Pathologies of Power Discussion Narrative Health Workshop
8th day	**9th day**	**10th day**	**11th day**	**12th day**	**13th day**	**14th day**
Groupwork Resilience and Collective-Care	Allostatic Load Theory & Embodied Trauma Unnatural Causes* Privilege & Assets Walk Narrative Health Workshop War Dance*	Culture and Health, onsite immersion Constructive Dialogue and Self-Awareness Cultural Relativism Dialogue	Narrative Health Workshop	Introduction to Social Change and Social Movements Health Advocacy in the local context (Uganda) Leadership for Change: Story of Self Workshop Narrative Health Workshop Pray the Devil Back to Hell*	Gender Equity Leadership for Change: Power-Mapping Asset Thinking and Stakeholder Mapping The Arts & Social Medicine (use of drama, poems, or music to express an understanding and interaction with concepts covered in class)	Genocide Memorial Museum Bonfire (Reflection on learnings from the Genocide Visit)
15th day	**16th day**	**17th day**	**19th day**	**20th day**		
Rwandan Health System & Hospital Tour Groupwork Bending the arch*	PIH Mission and Approach to Care PIH Model of Care: Infectious Diseases School Visit Group work	PIH Model of Care: Non-Communicable Disease Social and Economic Rights (Rwanda context) Walk the Talk (Political tour of host community in Rwanda) Story of Self Sharing	Final Exam Evaluations Groupwork	What are You Called to Do? (Core teaching team) Social Medicine Learning & Next Steps Chalk talk Closure of course		

*Film screened during in class session or at the end of the day

This is a simplified version of the course calendar. Days spent traveling to and from immersion sites are excluded. The course offers transnational health system immersion (Uganda and Rwandan Health System) to facilitate comparative analysis. A Typical day during the course runs from 8:30 am to 4:30 pm.

APPENDIX B: THE HEALTH ADVOCACY CAPSTONE GROUP PROJECT PROCESS

During the first week of the course, students are put in random groups of five with an emphasis on a global and interprofessional composition and assigned tasks—oftentimes a total of six groups are formed. The group tasks usually involve a clinical case relating to the burden of malaria, HIV, teenage pregnancies, diabetes, among others. The expectation here is for students to identify a health-related challenge and prioritize an action through root-cause analysis. Figure B1 illustrates a root cause analysis completed by one of the student groups during the first week of the class.

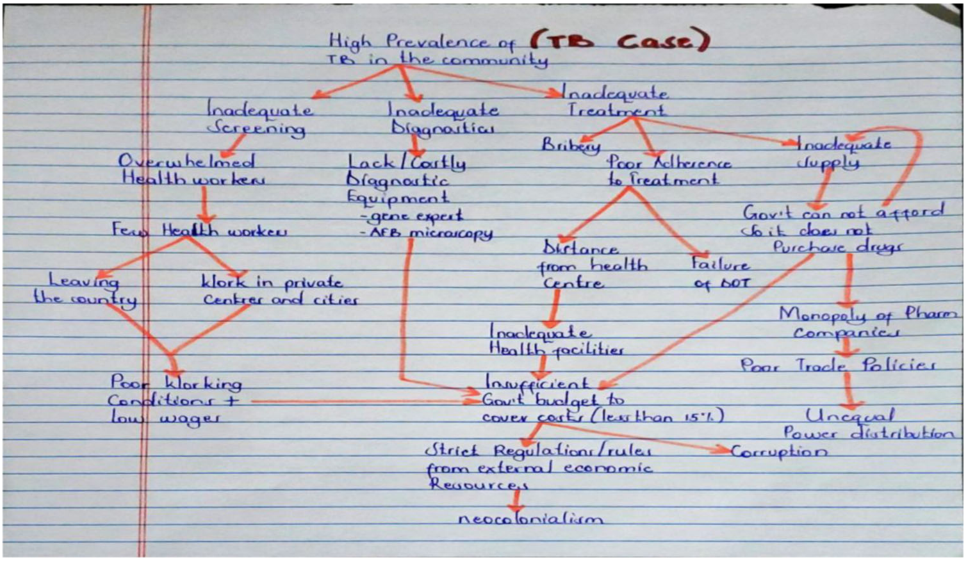


FIGURE B1 Root-cause analysis of tuberculosis conducted by a student group during the social medicine course

Identifying and prioritizing a challenge involves group dialog and brainstorming utilizing individual experiences drawing on gray and peer reviewed literature. Students are expected to generate an intervention using an evidence-based approach. This approach requires students to complete a rapid literature review to solidify their understanding of the issue and proposed intervention. The course further emphasizes advocacy skills through a close examination of successful and failed advocacy initiatives both locally and globally. This is achieved through an analysis of advocacy documentaries including that on South Africa's HIV Treatment Action Campaign (TAC) and the Liberian women's movement for peace, *Pray the Devil Back to Hell* (Dargis, 2008). Health advocacy in the local context is presented by a guest speaker actively engaged in advocacy locally. The groups often develop different levels of intervention spanning individual, population, and system levels.

The practical skills of health advocacy are enhanced through group processes and activities. The groups develop their projects, but the class is expected to come up with one or two capstone health advocacy projects. Groups arrive at the final project(s) to focus on by consensus, which involves each group pitching their project to the class. Each project is subjected to peer evaluation and assessed for creativity, feasibility, urgency, the time required for completion, and the project evaluative strategies proposed by group members. A score is assigned to each group's proposed project using the above criteria. The group project with the highest score does not automatically become the class capstone project.

Groups have internal discussions to decide how they want to proceed and come back to the main class to declare their intention. Where there is no internal group consensus, the groups are given more time, usually hours to a day to arrive at a decision. At the end of this activity, there are usually about two or three group projects that are still outstanding. Following this, the groups are urged to pursue a win-over discussion (convincing the other outstanding groups to join their proposed advocacy project). At the end of this phase (may or may not arrive at a single group project), groups are encouraged to proceed with the implementation of their proposed strategy on guidance from course facilitators.

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ORIGINAL ARTICLE

Nutritional status of socioeconomically disadvantaged children below 5 years: A cross-sectional study from Kerala, India

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Abstract

Undernutrition among children under the age of five remains untracked in India. One in five children are undernourished even in Kerala, a developed south Indian state well known for its egalitarian development. The aim of this paper is to understand the social, economic, and political dimensions of undernutrition among children of age 6–60 months belonging to low socioeconomic households in Kerala. 468 children (50% girls) were surveyed. The prevalence of stunting, underweight, and wasting among the study children were 25.6%, 24.4%, and 14.4%, respectively. Acute illnesses, underweight of mothers, low standard of living, and not utilizing Integrated Child Development Services (ICDS) and Public Distribution System (PDS) increased the risk of children being undernourished. The study found that children below 5 years from low socioeconomic strata had a higher risk of being undernourished, proving the vicious cycle of poverty and undernutrition. The association between the nutritional statuses of mothers and children indicates the vulnerability of multiple members from poor households to be malnourished. The utilization of ICDS and PDS was found to improve nutritional status and hence, the state has to ensure that the benefits of these initiatives are reaching the neediest in adequate quantity and quality.

KEYWORDS

economic and political dimensions, Kerala, low socioeconomic strata, social, under-five children, undernutrition

Key points

- Children below 5 years from low socioeconomic strata in Kerala had a higher risk of being undernourished.

- The link between mothers' and children's nutritional statuses highlights the importance of measuring nutritional status within the household unit.
- Non-utilization of Integrated Child Development Services (ICDS) and Public Distribution System (PDS) increased the risk of children being undernourished.

INTRODUCTION

India is home to the largest number of undernourished children in the world (UNICEF, 2020). In addition to struggling to ensure optimum nutrition for its children, in general, the country reports huge disparities in the distribution of malnutrition across the country (IIPS & ICF, 2017a). Kerala is a south Indian state known for its better development indicators with high life expectancy at birth, well-balanced male-female ratio, high literacy rate for both men and women, low death rate, and low incidence of poverty (State Planning Board, 2019; Census, 2011; NITI Aayog, 2015). Despite these comparatively impressive outcomes, one-fifth of Kerala's children are undernourished. As per the prevalence range of severity given by the World Health Organization (WHO) (de Onis et al., 2019), Kerala has high severity of underweight and a very high severity of wasting among children below 5 years based on the fourth National Family Health Survey (NFHS-4) estimates. Nutrition-specific policy initiatives such as Integrated Child Development Services (ICDS) and Public Distribution System (PDS) have better coverage in the state with the necessary infrastructure (NITI Aayog, 2019). In spite of such a favoring environment, the state befittingly lags in eliminating undernutrition among children and the NFHS-4 revealed substantial intra-state disparities with relatively poor districts having high burden (IIPS & ICF, 2017b). In this context, it is imperative to revisit the problem of undernutrition among children in Kerala. The present study tries to understand the undernutrition among children below 5 years and its social (individual and family characteristics), economic (monthly household income, monthly household consumption expenditure, standard of living), and political (utilization of ICDS and PDS) dimensions focussing only on under-five children from socially and economically disadvantaged strata in Kerala.

MATERIALS AND METHODS

A cross-sectional survey was conducted in three (out of 14) purposively selected districts in Kerala. The selection was based on the prevalence of wasting reported in NFHS-4. Of all districts, Idukki had a very high prevalence (24.2%), Thiruvananthapuram had a high prevalence (13.1%), and Kasaragod had a medium prevalence (9.7%) of wasting (IIPS & ICF, 2017b). The selected districts are located in central, southern, and northern directions of the state, respectively. (The sample size was calculated using the formula, $n = Z^2 P\ (1 - P)/d^2$ where n is the sample size, Z is the statistic corresponding to the level of confidence (1.96 for 95% confidence level), P is the expected prevalence of the event, d is the precision.)

The prevalence of wasting among children under 5 in Kerala was 15.7% in NFHS-4 (IIPS & ICF, 2017b). Applying this value in the formula with an assumed precision of 4% and design effect of 1.5 (Hulland et al., 2016), the sample size was 477. After adding an assumed nonresponse rate of 20%, the sample size was 572.4, which was rounded to 600. After excluding the nonrespondents and the incomplete responses, the sample size finally arrived at 468 of which 50% were girls. Children below 6 months of age were excluded due to the breastfeeding stage of their development. As per the studies (Aguayo et al., 2016; Green et al., 2018; Hemalatha et al., 2018), children in the postinfancy period, after the initiation of weaning, are more prone to undernutrition. Therefore, children aged above 6 months to 60 months were included.

Multistage random sampling was adapted at district, block/municipality, panchayat/ward, and Anganwadi Centers (AWCs—the focal point of service provision under ICDS) levels and drew the list of children for data collection. Screening was performed at each AWC to identify children belonging to low socioeconomic strata. The detailed sampling strategy and screening are described elsewhere (Jayalakshmi & Srinivasan, 2021).

The data were collected under three dimensions of nutritional status. Under the social dimension, child's individual (age, sex, birth order, birth weight, weight, exclusive breastfeeding, illness history, and immunization history) and household (size and type of family; parents' age, education, and occupation; religion; caste) factors were assessed. The economic dimension was assessed based on four indicators: monthly household income from all sources, monthly consumption expenditure, Standard of Living Index (SLI) adapted from NFHS-2, and household food security. The SLI was derived from multiple attributes such as type and ownership of the house, access to safe drinking water, cooking and sanitation facilities, and ownership of various durable items (IIPS & ORC Macro, 2000). Household food security was measured using Household Food Insecurity Assessment Scale (HFIAS) (Coates et al., 2007). Under the political dimension, utilization of major nutrition-specific policy initiatives such as ICDS and PDS was assessed. The child's individual details were assessed through an interview schedule. Other social and economic characteristics were collected through a household survey questionnaire which adapted the NFHS-4 questionnaire (IIPS & ICF, 2015). Mothers were the primary respondents. The experts have assessed the content validity, and face validity was confirmed based on the analysis of pilot study data. Further, standard equipment was used for measuring anthropometry.

The ethics clearance for the study was obtained from the Institutional Ethics Committee of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram (Reference number IEC/1272, dated September 6, 2018). The first author collected the data between October 2018 and January 2020. Consent was obtained from the mothers after providing the study information and children of those who have consented to participate only were included in the study. Anthropometric measurements were taken following the standard procedures (World Health Organization, 2008).

The nutritional status of the children is categorized into normal, mild, moderate, and severe forms stunting, wasting, and underweight (UNICEF, 2013).

> Stunting—Child's height is less than—2 standard deviations from the height-for-age z-score of WHO's reference population,
>
> Underweight—Child's weight is less than—2 standard deviations from the weight-for-age z-score of WHO's reference population,
>
> Wasting—Child's weight-for-height is less than—2 standard deviations from the weight-for-height z-core of WHO's reference population (UNICEF, 2013).

Severe stunting, underweight, and wasting occur when the height for age, weight for age, or weight for height is less than three standard deviations from the respective median of the WHO reference population. A mother's nutritional status is assessed based on the body mass index (BMI) and then categorized into underweight, normal, overweight, and obese as per the BMI classification for the Asian population (WHO Expert Consultation, 2004).

The IBM SPSS version 26 was used for data entry, cleaning, and analysis (IBM Corp., 2016). Data collected were validated randomly by comparing to the data maintained at the AWCs and consulting with Anganwadi workers (AWWs, or service providers at AWCs). Many respondents were hesitant to provide information on income and substantial underreporting was observed. Missing data were treated as such. The variables with more than 25% missing data were removed from bivariate and multivariate analysis. Mean and standard deviation of the continuous variables, and frequencies and proportions of the categorical variables were estimated. The variables that were found significantly associated with any form of child undernutrition with 95% confidence limits and having a minimum cell value of 10 were included for further analysis, serving as the basis for the logistic regression model. Additionally, household food security was added to the model as the authors intended to explore further. $p \leq 0.05$ was considered statistically significant.

RESULTS

Background characteristics of the study participants

Table 1 illustrates the social, economic, and political factors assessed in the study. The mean age of the children was 32.8 months (SD = ±14.1 months). The mean birth weight of the children was 2900 g (SD = ±500 g). All children were immunized up to their age except one who was partially immunized as the family reported a frequent change of residence. The median size of the family was five (range: 2–13).

Nutritional status of children

The prevalence of stunting, underweight, and wasting among children in the study is given in Figure 1. The prevalence of severe stunting, underweight, and wasting was 6.4%, 4.1%, and 4.1%, respectively.

Social, economic, and political dimensions of nutritional status of children

The results of the Pearson χ^2 test and binary logistic regression are presented in Table 2. Among all factors considered, the following were found significantly associated with any one form of undernutrition in children: history of acute illness; mothers' nutritional status; SLI; AWW sharing growth chart of the child with mother at least once in a year; and utilization of ICDS and PDS. The regression analysis showed that children with acute illness are at higher risk of developing all forms of undernutrition. Children of overweight/obese mothers were at a lesser risk for being underweight than those of mothers with normal BMI, whereas children of underweight mothers were 2.7 times more likely to be wasted than the reference category. Children whose growth was discussed by the AWW with mothers had two times higher risk of being stunted. Belonging to low SLI households and nonutilization of ICDS and PDS also increased the risk of children being underweight and wasted. Household food insecurity was not found significant in both bivariate and multivariate analysis (adjusted OR: stunting—0.720 [0.394–1.317], underweight—1.045 [0.573–1.906], and wasting—1.171 [0.589–2.328])).

TABLE 1 Social, economic, and political characteristics of the study participants

Variable ($N = 468$)		Frequency (n, %)
Age of the child	6–12 months	51 (10.9)
	13–24 months	98 (20.9)
	25–36 months	116 (24.8)
	37–48 months	154 (32.9)
	49–60 months	49 (10.5)
Birth weight	<2.5 kg	76 (16.2)
Exclusive breastfeeding	Yes	147 (31.5)
Acute illness in the previous month	Yes	159 (34.0)
Age of the mother (in years)	20–29 years	282 (60.3)
	30–44 years	183 (39.7)
Education of mother	Up to 10th standard	191 (40.8)
	>10th standard	277 (59.2)
Occupation status of mother	Employed	65 (13.9)
Mother's nutritional status (BMI) ($N = 463$)[a]	Underweight	49 (10.6)
	Normal	134 (28.9)
	Overweight	160 (34.6)
	Obese	120 (25.9)
Age of father ($N = 459$)[b]	24–33 years	224 (48.8)
	34–52 years	235 (51.2)
Education of father ($N = 459$)[b]	Up to 10th standard	221 (48.1)
	>10th standard	238 (51.9)
Occupation status of father ($N = 459$)[b]	Public sector	14 (3.1)
	Private sector	98 (21.4)
	Self-employed	31 (6.8)
	Laborers	291 (63.4)
	Farmers	24 (5.2)
Religion	Hindu	246 (52.6)
	Muslim	134 (29.5)
	Christian	88 (18.8)
Caste	ST/SC/OEC	87 (18.7)
	OBC	260 (55.6)
	Forward	121 (25.9)
Monthly household income ($N = 359$)	₹1000–10,000 (~$13.5–135)	280 (77.9)
	₹10,001–30,000 (~$135–405)	79 (22.1)

(Continues)

TABLE 1 (Continued)

Variable (*N* = 468)		Frequency (*n*, %)
Monthly household expenditure (*N* = 412)	₹4148–10,000 (~$56–135)	250 (60.7)
	₹10,001–39,753 (~$135–537)	162 (39.3)
Standard of living	Low and medium	66 (14.1)
Household food insecurity (*N* = 455)	Moderate and severe	101 (22.2)
Utilization of ICDS	Utilizers	211 (45.1)
Anganwadi worker shared growth chart with mother	Never	347 (74.1)
Utilization of PDS	Utilizers	429 (91.7)

Abbreviations: OBC, other backward classes; OEC, other eligible communities; SC, scheduled caste; ST, scheduled tribe.

[a] Out of 468, five mothers did not accompany their children due to unexpected reasons on the day of taking anthropometric measurements. However, all of them filled the questionnaire.

[b] Out of 468, nine mothers were widowed (2), separated (4), and divorced (3).

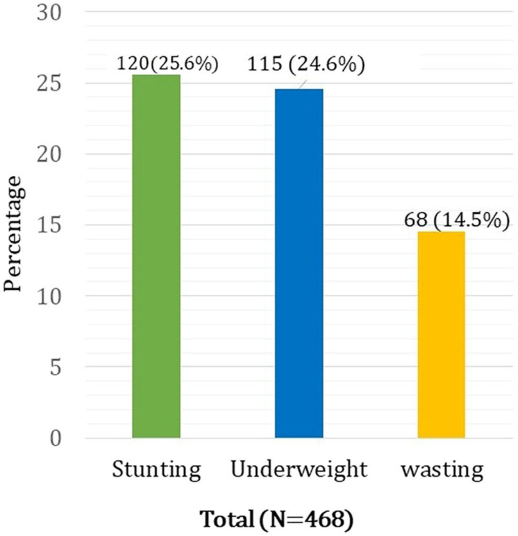

FIGURE 1 Prevalence of undernutrition among children

DISCUSSION

The nutritional status of children

The indicators of the nutritional status of children, viz. stunting, underweight, and wasting show that there is growth failure in the study population. The prevalence of stunting (26%) was found comparable with the prevalence reported for the lowest three wealth quintiles (23%) in the NFHS-4 (2015–2016) (Mukhopadhyay & Chakraborty, 2018). Prevalence of stunting (26%) and underweight (24%) among children in the present study was higher than that of the general population as reported in NFHS-4 (stunting = 20%, underweight = 16%) and the latest NFHS-5 (stunting = 23%, underweight = 20%) as well (IIPS, 2020; IIPS & ICF, 2017b).

TABLE 2 Social, economic, and political dimensions of undernutrition among children

Variable		χ^2 stunting (*n*, %)	Stunting adjusted odds ratio (95% CI)	χ^2 underweight (*n*, %)	Underweight adjusted odds ratio (95% CI)	χ^2 wasting (*n*, %)	Wasting adjusted odds ratio (95% CI)
Mother's nutrition	Normal (134)	16 (34.0)	1	40 (29.9)**	1	19 (14.2)**	1
	Underweight (49)	12 (24.5)	0.866 (0.399–2.029)	20 (40.8)	1.572 (0.702–3.522)	15 (30.6)	2.773 (1.131–6.798)*
	Overweight/ obese (280)	70 (25.0)	0.908 (0.539–1.530)	54 (19.3)	0.455(0.262–0.790)**	34 (12.1)	0.790 (0.403–1.547)
Acute illness history	Absent (309)	55 (17.8)**	1	52 (16.8)**	1	33 (10.7)**	1
	Present (159)	65 (40.9)	2.984 (1.872–0.759)**	63 (39.6)	3.161 (1.929–5.179)**	35 (22.0)	2.325 (1.310–4.127)**
Standard of Living Index	High SLI (402)	20 (30.3)	1	87 (21.6)**	1	49 (12.2)**	1
	Low SLI (66)	100 (24.9)	1.200 (0.633–2.276)	28 (42.4)	2.577 (1.373–4.834)*	19 (28.8)	2.225 (0.116–4.436)*
ICDS utilization	Utilizer (211)	62 (29.4)**	1	50 (23.7)	1	29 (13.7)	1
	Nonutilizer (257)	58 (22.6)	1.124 (0.638–1.980)	65 (25.3)	1.986 (1.064–3.707)*	39 (15.2)	1.747 (0.856–3.566)
Child growth chart Shared	Never (346)	78 (22.5)**	1	82 (23.7)	1	48 (13.9)	1
	At least once (122)	42 (34.4)	1.984 (1.072– 3.672)*	33 (27.0)	1.680 (0.851–3.318)	20 (16.4)	1.722 (0.796 – 3.722)
	Utilizer (429)	111 (25.9)	1	97 (22.6)	1	58 (13.5)	1
PDS utilization	Nonutilizer (39)	9 (23.1)	0.702 (0.271–1.815)	18 (46.2)**	3.423 (1.457–8.043)*	10 (25.6)**	2.177 (0.855–5.541)

Abbreviations: CI, confidence interval; ICDS, Integrated Child Development Services; SLI, Standard of Living Index.

*$p < 0.05$; **$p < 0.01$.

The prevalence of wasting in the study was almost the same as that of the general population in NFHS-4 (14% vs. 16%) (IIPS & ICF, 2017b). The lower prevalence of wasting is due to the higher prevalence of stunting as more than one-fourth of the children had short stature. This evidence suggests a higher vulnerability to undernourishment among children from low socioeconomic strata.

The social dimension of the nutritional status of children

The present study confirms the vicious cycle of undernutrition caused by acute illness. Children with acute illness had a higher risk for all three forms of undernutrition in consonance with ample evidence available in the literature (Keusch, 2003; Philip et al., 2015; Priyanka et al., 2016; Rice et al., 2000; Walson & Berkley, 2018). One-third of children in the present study had an acute illness in the month preceding the survey, despite the fact that most of them belonged to high SLI households. This needs to be explored in detail in terms of environmental pollution and food safety due to two reasons; (1) Kerala is a rapidly urbanizing state with high population and vehicle density (2) being primarily a consumer state, Kerala depends upon other states for most of the food commodities.

The association between the nutritional statuses of mothers and children indicates the vulnerability of multiple members from poor households to be malnourished. The study found that children of overweight or obese mothers had a lesser risk of being underweight, whereas children of underweight mothers had three times higher risk of being wasted. The assumption that older, educated, and employed mothers are more likely to contribute to improving the nutritional status of their children (Arulampalam et al., 2016; Green et al., 2018; Habimana & Biracyaza, 2019; Huey et al., 2019; Kavosi et al., 2014; Sajithamohan & Arunachalam, 2018) was negated in the present study.

The economic dimension of the nutritional status of children

One in seven households had low SLI and children from such households had a higher prevalence of being underweight and wasting. This confirms the higher vulnerability of children from the lower class to be undernourished given that the study included children from low socioeconomic strata only. Existing literature from Kerala did not find any association between economic status and child undernutrition (Anitha et al., 2017; Priyanka et al., 2016).

The political dimension of the nutritional status of children

Children who did not take supplementary nutrition from ICDS (nonutilizers) were two times more likely to be underweight. The ICDS had its contribution to the nutritional status of children and this is in agreement with earlier studies from India (Anitha et al., 2017; Pandey et al., 2011). However, less than one-fourth of the beneficiaries utilize supplementary nutrition services through ICDS. An AWW is more likely to discuss the growth of a child with the mother if there is an evident growth deficit in children and it could be the reason for a significant association between AWW sharing growth chart and nutritional status. The PDS also contributes to nutritional status by ensuring food security at the household level. This was not found in existing literature, and it is another important factor affecting the nutritional status of children in the present study. Almost all of them utilized PDS. It has to be read along with the huge food inflation in the past few years and overdependence on a less diverse calorie-rich family diet that limits the nutritional supplementation of children (Maneesh & Shaharban, 2015; Saritha & John, 2015).

CONCLUSION AND POLICY IMPLICATIONS

The study found that children below 5 years from low socioeconomic strata had a higher risk of being undernourished and confirmed the vicious cycle of acute illness and undernutrition. The acute illness in children irrespective of better SLI is a concern that calls for urgent attention from the health system and governments. The association between the nutritional statuses of mothers and children indicates the need for assessing nutritional status within the household unit. The utilization of ICDS and PDS was found to improve nutritional status and hence, the state has to ensure that the benefits of these initiatives are reaching the neediest in adequate quantity and quality.

LIMITATIONS AND BIAS

The study focused only on children from low socioeconomic strata, hence, the findings are not generalizable to the entire population. Most of the variables under social, economic, and political dimensions were captured based on self-reported data by mothers, hence, the chances of recall bias could not be eliminated.

ACKNOWLEDGMENT

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CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

ETHICS STATEMENT

This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving research study participants were approved by the Institutional Ethics Committee of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram (Reference number IEC/1272, dated September 6, 2018). Written and/or Verbal informed consent was obtained from mothers of all children.

AUTHOR CONTRIBUTIONS

Dr. Rajeev Jayalakshmi and Prof. Srinivasan Kannan together conceptualized the research. Dr. Rajeev Jayalakshmi conducted the data collection and analysis under the supervision of Prof Srinivasan Kannan. Further, Dr. Rajeev Jayalakshmi prepared the present manuscript and Prof. Srinivasan Kannan has reviewed and corrected it to finalize it.

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ORIGINAL ARTICLE

WMHP WORLD MEDICAL & HEALTH POLICY WILEY

How are healthcare provider systems preparing for health emergency situations?

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Abstract

Natural disasters, disease outbreaks, famine, and human conflict have strained communities everywhere over the course of human existence. However, modern changes in climate, human mobility, and other factors have increased the global community's vulnerability to widespread emergencies. We are in the midst of a disruptive health event, with the COVID-19 pandemic testing our health provider systems globally. This study presents a qualitative analysis of published literature, obtained systematically, to examine approaches health providers are taking to prepare for and respond to mass casualty incidents around the globe. The research reveals emerging trends in the weaknesses of systems' disaster responses while highlighting proposed solutions, so that others may better prepare for future disasters. Additionally, the research examines gaps in the literature, to foster more targeted and actionable contributions to the literature.

Key Points

- The literature is saturated with needs assessments for disaster training and primary reports following disasters. More research addressing innovation in hospital disaster simulation, protocols, post-acute response and supply, and staffing is warranted.
- More quantitative research is needed, particularly showing mortality and morbidity outcomes from disaster interventions at the provider and hospital system level.
- Common shortcomings in hospital disaster plans are telecommunication failure, plans for surge capacity, insufficient stockpiles, coordination with other hospitals/disaster responders, and staff knowledge of disaster protocols.

- Hospital system leadership should plan for the repercussions of disruptions in usual care during the disaster, such as chronic disease exacerbation and new acute infections during recovery.
- Healthcare providers and staff are vulnerable to psychological strain, particularly during infectious disease outbreaks, and this should be addressed early and aggressively.

KEYWORDS
disaster, emergency, preparation

INTRODUCTION

Natural disasters, disease outbreaks, famine, and human conflict have strained communities everywhere over the course of human existence. However, modern changes in climate, human mobility, and other factors have increased the global community's vulnerability to widespread emergencies. We are currently in the midst of such a disruptive health event. The COVID-19 pandemic is currently testing health provider systems globally, impacting all sectors and corners of the globe.

Disasters of various types present unique challenges to providers who are on the front lines. Providers, equipped only with their training and the limited, unverified information available to them, have to meet the needs of the surge of patients that present to their facilities. At this point, the literature is saturated with needs assessments, which suggests a general consensus: many medical providers feel unprepared to respond to emergency situations.

Though emergencies by their very nature are unpredictable, we can still influence the preparation and resources of healthcare providers. This paper qualitatively assesses systematically obtained primary reports and meta-analyses published in English from 1998 to 2019, asking “How are Healthcare Provider Systems Preparing for Health Emergency Situations?” The objectives are to learn from our collective mistakes, gain from the literature's proposed solutions, and illuminate areas for improvement or further research.

METHODS

The authors conducted a qualitative assessment of articles systematically obtained from PubMed, Google Scholar, and JSTOR using the search terms in Table 1 in the spring of 2019. In the search, “and” was used between the columns and “or” was used in the columns.

To be incorporated into the analysis, the publication must meet the following criteria: (1) Date of publication after 1998, (2) discuss emergency preparation/response, (3) involve healthcare providers, (4) incorporate clinical management and patient-centered outcomes, (5) have an English version available, and (6) be a primary report/study or meta-analysis.

The authors conducted a search of the PubMed (MEDLINE), Google Scholar, and Journal Storage (JSTOR) digital libraries using the search terms in Table 1 in the spring of 2019. All PubMed results were screened for inclusion due to its relative density of articles that met inclusion criteria, as well as the first 100 results from Google Scholar and JSTOR. We utilized the Rayyan website and mobile app through the Qatar Computing Research Institute of Hamad Bin Khalifa University for the inclusion/exclusion process, screening conducted based on abstracts and keywords (Ouzzani et al., 2016). Once the initial

TABLE 1 Review Search Terms

Keyword 1 Terms	Keyword 2 Terms	Keyword 3 Terms	Keyword 4 Terms	Keyword 5 Terms	Keyword 6 Terms
Emergencies	Planning Techniques	Health Personnel	Preceptorship	Health Facilities	Mortality
Disease Outbreaks	Strategic planning	Nurses	Education, Medical	Bed Occupancy	Days of Lost work
Epidemics	Civil Defense	Physicians	Education, Medical, Continuing	Hospital Bed Capacity	Days of lost services
Pandemics	Relief Work	Emergency Medical Technicians	Teaching Rounds	Health Facility Size	
Mass Casualty Incidents	Quarantine	Health Facility Administrator	Health Education	Hospitals	
Disasters	Disaster Planning	Medical Staff	Disaster Medicine	Community Health Centers	
		Military Personnel			

screening process was complete, the authors read the included articles in entirety for analysis.

A systematic review was initially designed to emulate the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology. A mixed-methods analytic approach was anticipated, beginning with qualitative analysis to be followed by quantitative assessment and potential meta-analysis. However, once the lack of quantitative patient-centered outcome data in the literature was apparent, direct extraction of data and quantitative assessment to satisfy the PRISMA checklist was not feasible. Thus, the methodology shifted to a predominantly qualitative analysis of the literature, only quantifying proportions of major trends in the literature.

RESULTS

The authors screened 509 citations from PubMed, and 100 from each Google Scholar and JSTOR, for a total of 709 abstractions and analysis. Only 2% of Google Scholar and 6% of JSTOR results met the inclusion criteria, compared to 31% of those identified via PubMed, resulting in 141 articles included for full analysis. The flowchart of the article collection process is seen in Figure 1. The geographic distribution of the included articles is presented in Figure 2, and the distribution of articles by disaster type is presented in Table 2. Figure 2 depicts a large geographic disparity in the articles, with the bulk of articles arising from North America and Asia.

Qualitative assessment of the included articles revealed distinct themes in which each study could be categorized. Half of the articles retrospectively analyzed the shortcomings of a true emergency, categorized as “Primary Report/Study” (74 articles). The other half of the included articles focused on disaster preparation. Their varied approaches can be subcategorized as “Simulation and training” (23), “Formal Protocols” (19), “Supply, Staffing and Capacity” (14), and “Post-Acute Response” (11). The second half of the articles, which

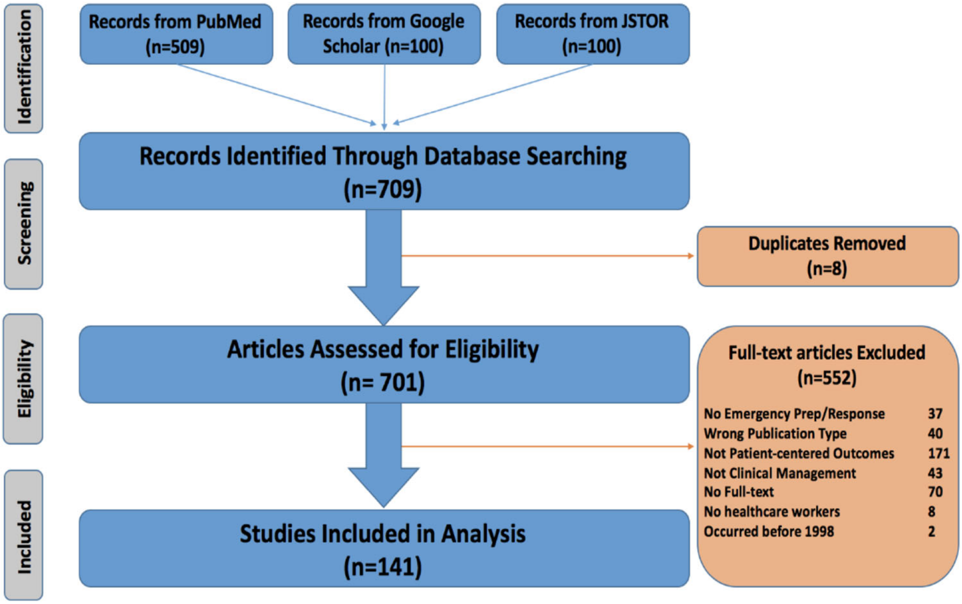

FIGURE 1 Systematic review flowchart

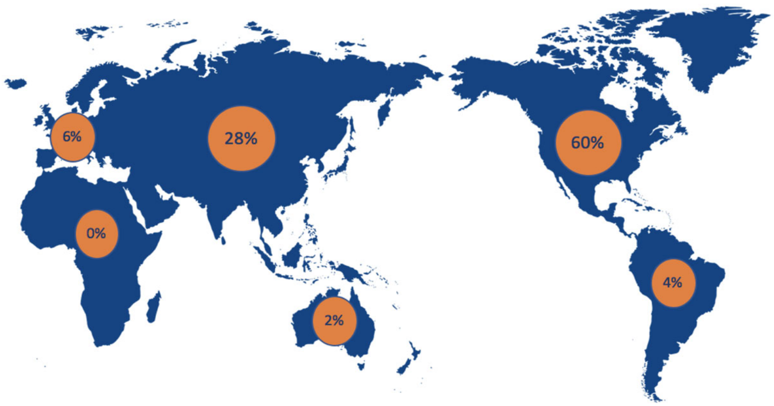

FIGURE 2 Geographic distribution of articles

TABLE 2 Types of disasters described

Type of disaster	% of articles
Natural disasters	56
Terror/Intentional events	17
Accidents	13
Infectious disease outbreaks	10
War	4

focused on preparation, had an even larger geographic disparity of articles than the total articles that Figure 2 depicts, with 76% of articles originating in North America and 15% from Asia.

The distribution of the articles by year is presented in Figure 3. Over the past two decades, the number of articles peaked in the mid 2000s following the SARS epidemic, Indian Ocean tsunami, and Hurricane Katrina. Our subsequent analysis of the articles that meet inclusion criteria are by no means comprehensive of available work regarding preparation, response, and recovery to disasters. Rather, the themes reflect the trends in the included articles.

Disaster response: Primary report/study

Approximately half of the included articles (74 articles, 52%) were primary reports or studies that hospitals published following a disaster, assessing their training and response. The authors of these articles had endured various true emergency situations and retrospectively analyzed their experiences in either narrative (58 articles, 78%) or study (16 articles, 22%) format. The majority (63 articles, 85%) of the articles described emergency operations in existing medical infrastructure. The remainder of the articles (11 articles, 15%) described mobile medical operations that were set up in response to a disaster, the majority (8 articles, 71%) of which were led by the United States. The vast majority of the primary reports explicitly mentioned the existence of an emergency action plan that was activated during an emergency (61 articles, 83%) and presented lessons learned after the activation of said plans (58 articles, 78%). These common shortcomings, listed by percent of included articles, are presented in Figure 4.

For these common problems, the papers collectively offered solutions that they planned to implement within their respective systems in preparation for another emergency. For the

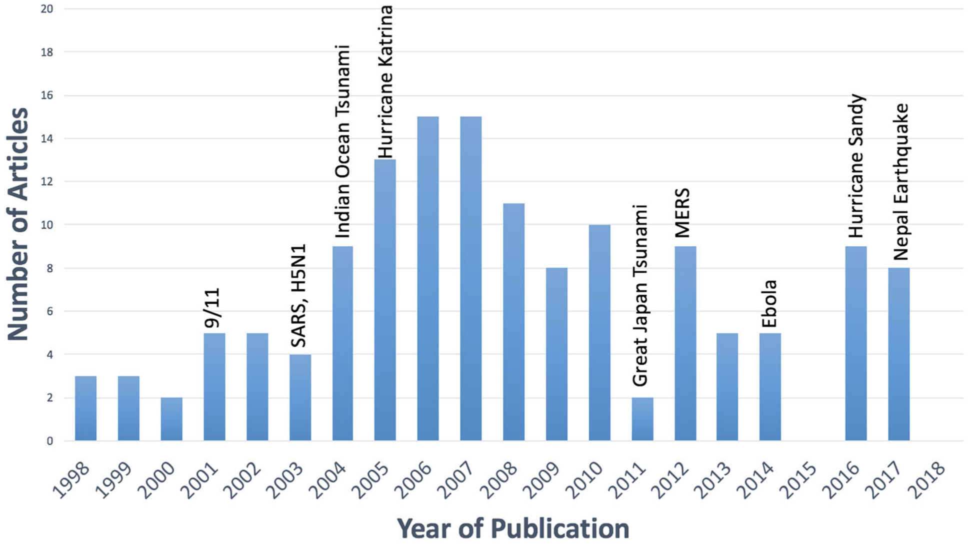

FIGURE 3 Distribution of articles by year

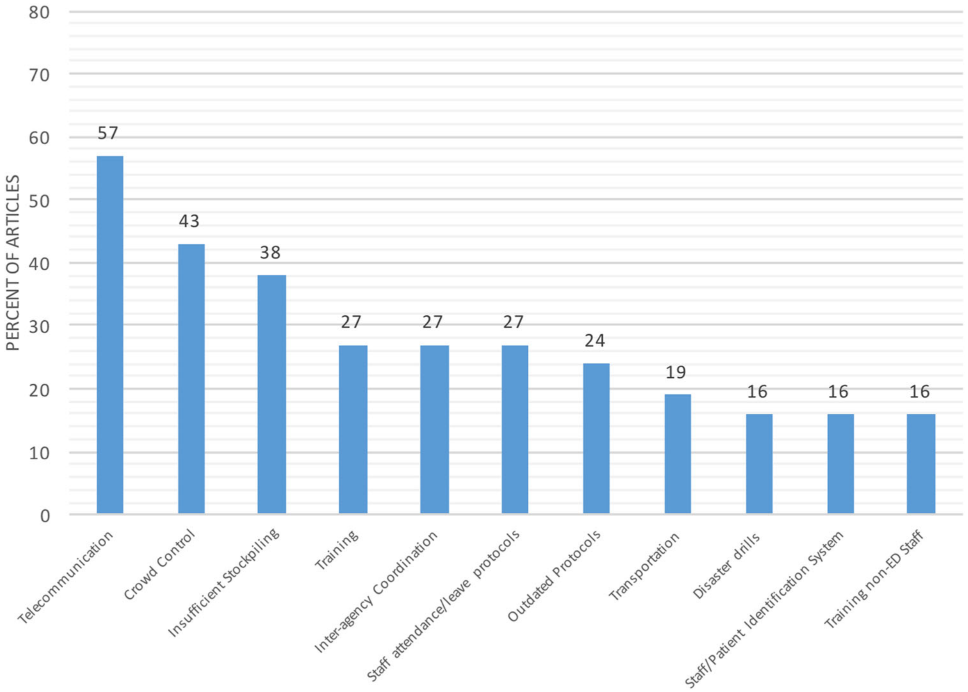

FIGURE 4 Common issues in disaster response

issue of telecommunication, the authors repeatedly described the massive number of phone calls to the hospital/emergency department, increased radio "traffic," lack of cellphone signal close to the epicenter of emergencies or in health facilities, as well as the inability to contact other leaders within the healthcare facility. Solutions offered were to equip emergency departments and ambulances with satellite radio transmission, to re-issue pagers or radios for Hospital Incident Command System leadership in the event of an emergency, and to have a second landline number for community partners (G. G. Lavery & Horan, 2005).

Additionally, many articles described the issue of crowd control in emergency departments, as many types of health emergencies lead to a surge of patients. This surge of patients, volunteers, and family members is exacerbated by the fact that a majority of people self-present to the emergency department (ED) rather than by ambulance, which leads to a maldistribution of patients across a community's hospitals (Zoraster et al., 2007). As a solution, the hospitals sealed ED entrances, triaged outside, limited ED presence to essential staff, and kept additional/volunteer staff out of the ED but close in case they were needed (Lee et al., 2016). One article advocated for hospital incident command system leaders to wear vests to clearly denote their role, and even labeling providers with "Airway doctor," "Trauma nurse," "Trauma surgeon," and so on, to avoid confusion in a crowded space (Lee et al., 2016). Multiple articles encouraged establishing family assistance centers for next of kin looking for victims, which can be expected on a magnitude of three to five people per patient (Lynn et al., 2006). More ED space can be made available by discharging stable patients home earlier than normal from the wards. Some articles described disrupted road infrastructure, during which health staff coordinated with other first responders, such as fire departments or military to create alternative means to transport patients to and from hospitals (Chen et al., 2010; Jenkins et al., 2010). In this way, patients admitted from the ED could rapidly be moved up and ED boarding and crowding minimized.

With regard to insufficient stockpiling before a foreseeable infrastructure-disrupting event like a hurricane, hospitals discussed stockpiling water to last 5 days and minimizing the number of people in the hospital beforehand (Bovender & Carey, 2006). Additionally, they described how stockpiles of medications in areas surrounding an emergency can be exhausted as people evacuate and seek medications for chronic diseases in the EDs and pharmacies of surrounding regions (Hogue et al., 2009).

The majority of the articles (61 articles, 83%) mentioned that their facility had an emergency plan that was activated during the emergency. Nonetheless, there was a recurring theme of staff being unaware of such plans or protocols as well as generalized confusion when such plans were activated. Many articles called for more disaster drills with clear direction. One article studied its disaster drills, showing they had no significant impact on regular patient care (Timm & Kennebeck, 2008). In drills, it is important to create a clear identification scheme for both hospital incident command system leaders (vests) or patients (paper record/handwritten wrist band with triage status) in the event of the electronic medical record (EMR) systems becoming unavailable (Lee et al., 2016). Additionally, clear protocols for staff attendance/leave in the event of a disaster should be established to mitigate staff elopement and subsequent overstressing of the remaining staff (Kodama et al., 2014; Laditka et al., 2009; Santibañez et al., 2016).

Multiple articles expressed the need for increased collaboration with other disaster responding organizations, such as local public health agencies, police, EMT/paramedics, fire brigades, and militaries. Some formed a regional emergency response coalition, meeting regularly and forming a regional central command structure in the event of an emergency (Cyganik, 2003). A consideration for action would be to create a memorandum of understanding outlining joint planning; all-level workforce training; and the sharing of supplies, manpower, and data such as patient census in the event of a disaster (Werner et al., 2005).

Disaster preparation: Simulation and training

A contingent of articles (23 articles, 16%) addressed disaster simulation and training in their health systems. The largest proportion of articles that addressed simulation and training assessed the competency of existing training measures in place (eight articles, 33%). Unfortunately, the majority of the assessments were based on qualitative data, with the only quantitative data coming from pre- and post-training assessments that are vulnerable to response shift bias. Another 33% of the articles (eight articles) described actual simulation exercises, with half of them in the clinical setting and half in a tabletop format. The remainder of the articles discussed needs assessments for training (three articles, 13%), systematic reviews of training (two articles, 9%), and descriptions of training programs (two articles, 9%).

Many primary reports called for more disaster drilling to increase staff knowledge of disaster protocols, refine emergent decision-making at various levels in emergency health systems, and foster oral and written communication between such levels. The drills described by the articles in this section—from in-hospital drills with staff to tabletop exercises with clinical leaders and community partners—were universally seen as helpful from a qualitative standpoint. Analysis of pre- and post-tests universally supported that assessment. However, two systematic reviews attempted to provide more robust evidence for or against the utility of such exercises. They agreed that there is limited quantitative evidence proving the effectiveness of such drilling and that those studies have “significant limitations in design and evaluation methods” (Hsu et al., 2004). For this reason, the reviews both concluded that there is insufficient evidence to draw a valid conclusion (Hsu et al., 2004; Williams et al., 2008). Nonetheless, one noted that the drills are useful to “improve familiarity with disaster procedures, identify problems in different components of response (e.g., incident command, communication, triage, patient flow, materials and resources, and security) and provide the opportunity to apply the lessons learned to disaster response” (Hsu et al., 2004).

Disaster preparation: Proposed plans

Nineteen articles (13%) focused on delineating plans for future disasters. Some advocated for identifying multiple hospitals in a region to be involved in planning (Lynn et al., 2006; Potter et al., 2005). They emphasized that when planning, it is important to estimate the expected wounded in various types of mass casualty incidents (Lynn et al., 2006). One can subsequently use those figures to calculate the maximum number of patients able to be absorbed per hospital, as well as the necessary supplies and staff. Staff needs should be overestimated by 30%, taking into consideration that 30% of called-in personnel will not be available. Alternative spaces for triage, treatment, and stretcher routes should be considered (Lynn et al., 2006). Hospital and regional command centers, clear leadership roles and duties, and postactivation checklist should be outlined. Lastly, staff call-in/report protocols should be published.

Past infectious disease outbreaks such as SARS have shown high rates of nosocomial infection, with 21% of SARS patients being healthcare workers. To address this known issue, an article suggested the following hierarchy: (1) Engineering controls, followed by (2) administrative and work practice controls, and supplemented by (3) personal protective equipment (PPE) (Thorne et al., 2004). Engineering controls include temporary structures, outside facilities for screening, and negative pressure rooms. Administrative controls include restricting patient contact, staff/patient movement, control measures for high-risk procedures, and monitoring staff adherence to isolation procedures. PPE should be seen as a supplement to a more important means of transmission prevention.

A portion of the articles (four articles, 21%) discussed individualized departmental task forces that have been formed to take on emergency situations. Such task forces complement the overarching hospital incident command system and lead to individualized response models, increased staff morale, and staff "buy-in" about the importance of disaster preparedness within individual departments (Zavotsky et al., 2004). The task forces corresponded and trained with outside first response organizations, and some even planned to assign staff members to leave the hospital to join such organizations in the field in the event of a mass casualty situation (R. F. Lavery et al., 2000).

The remaining articles focused on best practices in the care of a specific patient group (three articles, 16%). For example, obese, elderly, and perinatal women have increased health needs and limited mobility. Thus, all should be considered special-needs and at-risk patient populations, and all patient plans should consider them (Geiling, 2010; Orlando et al., 2010).

Disaster preparation: Post-acute response (recovery)

The smallest proportion of articles focused on post-acute phase disaster response (11 articles, 8%), taking varying approaches. The majority of the articles (seven articles, 64%) focused on the issues providers face in the post-acute/recovery period, when regular health infrastructure remains disrupted. Articles called for a more coordinated international response to disasters, ensuring the qualification of those deployed and prioritizing the autonomy and needs of the host nation's ministry of health (Carballo et al., 2005). Other articles examined the issues that patients face in the event of prolonged infrastructure failure, both acute and chronic. For example, when infrastructure fails, patients cannot access their chronic medications or healthy food and present with related complications of their chronic illnesses (Hogue et al., 2009). One article found increased rates of dental caries in the months following earthquakes in two countries, Japan and Haiti (Hosokawa et al., 2012). Interestingly, rates of caries were particularly high in areas with international responders, which the authors attributed to international teams distributing sugary food and candy, which have a long shelf life, to survivors. Oral hygiene can be a nidus of infection, particularly if elderly patients aspirate, and thus the article suggested distributing toothbrushes/toothpaste, educating patients, involving dentists, and distributing healthy food.

The remainder of the articles (four articles, 36%) took aim at the impact the mass casualty incident has on healthcare workers over time. Some discussed medical morbidity, but all discussed psychosocial distress from social distancing-associated social isolation, increased work, stigmatization of healthcare workers during infectious disease outbreaks, and the fear of contracting the disease and/or spreading it to family. For example, a study during the SARS epidemic found that two-thirds of the hospital staff reported SARS-related concerns for their own or their family's health (Nickell et al., 2004). More alarmingly, 29% scored above the threshold point on the GHQ-12, indicating probable emotional distress, social dysfunction, anxiety, or loss of confidence. The rate among nurses was even higher at 45%. Such obstacles threaten staff absenteeism and dysfunction, thus challenging the sustainability of post-acute disaster response. Therefore, early and aggressive campaigns to boost morale, treat depressive symptoms, and foster social connections are important. A second article suggested educating staff that they are at risk for symptoms of depression/anxiety, normalizing seeking psychotherapy/pharmaceutical treatment, proactively creating phone/video chat networks, and providing financial support for those in quarantine (Johal, 2009).

Disaster preparation: Supply, staffing, and capacity

Fourteen articles (10%) addressed supply, staffing, and capacity concerns in disaster planning. The largest portion of this group (five articles, 36%) discussed surge capacity—the ability of a medical facility to care for the "surge" of new patients in the event of a mass casualty incident. To minimize the surge, papers described methods to facilitate interhospital communication of key data—supplies, manpower, and the number of open hospital beds—in the event of a disaster to distribute supplies and staff to meet patient needs (Tadmor et al., 2006). Similarly, health provider systems can work with the media to supply the public with instructive information to deter panic and control patient flow; mitigating unequal burden between hospitals (Tadmor et al., 2006). In response to the surge, the articles outlined various means to redistributing patient burden, such as discharging stable patients home early or to subacute/short-term rehabilitation facilities and using typically nonclinical space for patient care. Some took it a step further, discussing more proactive measures, such as planning with the region's outpatient community health centers, closed hospitals, or retirement homes to take advantage of their space for reserve capabilities (Koh et al., 2006; Phillips, 2006).

Another portion of the articles (four articles, 29%) discussed means of incidence control. For infectious disease or chemical outbreaks, articles advocated for mass vaccination/prophylaxis and PPE for medical providers. They highlighted the lack of and need for improved PPE for first responders such as EMT/paramedics in the event of a chemical/nuclear/biological disaster (Migl & Powell, 2010; Phelps, 2007).

Some of the articles (three articles, 21%) discussed means to secure additional medical supplies, discussing strategic stockpiling and formulas to calculate supply needs to better inform suppliers in the early response. For example, one article formulated the blood needs from the number of casualties in a mass casualty incident (Beekley et al., 2009).

The remainder of the articles (two articles, 14%) discussed staffing, highlighting systems to credential out of hospital clinician volunteers rapidly and an app that calls/verifies reinforcement without sacrificing critical manpower. For example, one article created an app that circumvents a phone tree and provides the institution with real-time provider responses and estimated times of arrival (K. Tanaka et al., 2017). The other article supported advanced provider credentialing in a region so that hospitals can accept volunteers as needed to assist in post-disaster care (Schultz & Stratton, 2007).

DISCUSSION

Disaster preparation

It is clear that healthcare provider systems around the world differ in their approach to disaster preparation, targeting an array of simulation and training, formal protocols, supplies, staffing, and capacity. Hospital incident command system leaders can consider implementing a hierarchy of engineering controls, administrative/work practice controls, and PPE with the needs of all staff and at-risk patients kept in mind. Additionally, hospital system leadership can consider creating stockpiles that are intended to last at least five days, establishing memorandums of understanding between hospitals/departments and local public health agencies, writing evacuation protocols, defining staff attendance protocols during disasters, training of staff outside of the Emergency Department (Accident and Emergency) to assist during disasters, and including all levels of providers in the protocol-making process.

In terms of the literature, which is saturated with needs assessments, further research is needed on disaster preparation. A specific contribution to the literature would be to examine the effectiveness of preparation activities such as disaster drills, computerized scenarios, simulation, and tabletop exercises. Hospitals/departments could more rigorously evaluate their drill efforts, monitoring their training against the following outcomes measures: Time to first provider contact, time to laboratory/radiological study, time to diagnosis, time to treatment, length of stay in department/hospital, rates of over-triage and under-triage, length of time until backup staff called/arrived, appropriateness of decisions made by hospital incident command, and so forth. One systematic review by Williams et al. (2008) called for studies with better scientific rigor and objective measures, ideally randomized controlled trials involving control groups of untrained individuals. Though it seems counterintuitive to abstain from training a portion of the workforce, they argue, “control groups could receive training once the studied intervention is shown to be effective.” Through studies of greater rigor, preparation work can be more targeted, evidence-based, and efficient use of resources.

Disaster response

As other hospital systems, departments, and providers plan their disaster response disaster, they can learn from their colleagues' lessons learned in Figure 4 to prevent similar mistakes in the future. Important considerations for future disaster response would be for providers to incorporate satellite/radio communication when telecommunications are disrupted, initiate crowd control and triage outside of the ED, institute clear demarcation of hospital incident command system leadership, and organize volunteer manpower from outside departments/institutions.

Additionally, more quantitative data is needed in the literature. This study was initially designed with the intention of extracting quantitative outcome data from articles to present a robust argument of which disaster preparation interventions work, but rarely do articles publish quantitative data on disaster response interventions. Even fewer examine patient-centered outcomes, such as mortality data (12 articles, 9%).

This lack of outcome data is a major limitation of the individual articles examined, as well as this review article, which was based on qualitative trends. Thus, we encourage the collection and presentation of quantitative measurement in clinical disaster response. Aside from mortality and morbidity, it would be important to include the following measures: Number of patients over time (surge), number of patients by chief complaint, average length of stay, hospital capacity, bed occupancy over time, days of lost work, days of lost services. Systems could also use published Utstein-style templates for publishing uniform data following acute response (Debacker et al., 2012). Through comparison of measurable outcomes, future recommendations can be evidence-based.

Disaster sustainability and recovery

In terms of disaster sustainability and recovery, hospital systems should plan for the repercussions of infrastructure failure following the acute disaster, such as chronic disease exacerbation and new acute infection. Hospital system leadership can consider incorporating technology, creating regional provider partnerships, and utilizing the media to equilibrate the supply and staffing strain in a region during a disaster. Additionally, as medical staff are vulnerable to psychological strain, particularly during infectious disease outbreaks, their psychological needs should be addressed early and aggressively. As relatively few articles in the literature focused on disaster recovery, future contributions about this phase are warranted.

Limitations

Quantitative assessment and meta-analysis using PRISMA guidelines was unable to be pursued as anticipated due to the subjective nature of current literature. The qualitative analysis that ensued is limited by its dependence upon investigator designation of identified themes. The authors attempted to mitigate potential resulting bias by quantifying proportions of major trends in the literature—first the proportions of articles responding to disasters and those planning for them and subsequently quantifying both common lessons learned and different areas of disaster planning focus.

The available data was contextual to the events with which they were associated, and conclusions not prospectively tested. Consequently, the developments and lessons learned that were common in the articles are not necessarily generalizable. For example, the feasibility of stockpiling is limited by storage capacity, the expense of storage, obsolescence, support of local or national governments, and so forth.

CONCLUSIONS

In summary, our review found the following:

- The literature is saturated with needs assessments for disaster training and primary reports following disasters. More research addressing innovation in hospital disaster simulation, protocols, post-acute response and supply, and staffing is warranted.
- More literature is needed documenting the successes and failures of medical provider disaster response in Europe, S. America, and Africa.
- The majority of articles were reactive, rather than proactive. Expansion of articles delineating efficacy-tested disaster preparation work is warranted for future evidence-based practice.
- Relatively few articles have been written on infectious disease outbreaks in the context of provider and hospital system emergency response.
- More quantitative research is needed, particularly showing mortality and morbidity outcomes from disaster interventions at the provider and hospital system level.
- Common shortcomings in hospital disaster plans are telecommunication failure, plans for surge capacity, insufficient stockpiles, coordination with other hospitals/disaster responders, and staff knowledge of disaster protocols.
- Hospital Incident Command Systems can consider the hierarchy of controls including engineering controls and administrative/work practices when designing disaster protocols controls. Infection prevention and control needs, and those controls that apply to all staff and particularly at-risk patients need special attention.
- Hospital system leadership should plan for the repercussions of disruptions in usual care during the disaster, such as chronic disease exacerbation and new acute infections during recovery.
- Disaster plans can incorporate technology, regional provider partnerships, and the media to equilibrate the supply and staffing strain in a region during a disaster.
- Healthcare providers and staff are vulnerable to psychological strain, particularly during infectious disease outbreaks, and this should be addressed early and aggressively.

As hospitals learn from the COVID-19 experience as well as other future disasters, they will hopefully start filling in these blanks with more targeted and actionable contributions to the literature.

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

ETHICS STATEMENT

The authors declare that human ethics approval was not needed for this study.

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Chhaupadi practice in Nepal: A literature review

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Abstract

Chhaupadi is a cultural practice where women are considered untouchable and forced to stay in separate huts during menstruation and child-birth. There is limited evidence on the practice's causes and effects, and the objective of the current systematic literature review is to fill this important gap. The studies included in the review ($n = 18$) capture the experiences of women in far- and mid-west districts in Nepal. Despite *chhaupadi*'s criminalization by the government, 70%–80% of women in western Nepal are forced to practice it. The primary concern of the practicing women is safety. The practice is rooted in religious norms that consider menstruating women impure. Communities enforce *chhaupadi* by creating an environment of fear, telling women that if they do not follow the restrictions, bad things would happen to their families. A few studies examined the health implications of staying in *chhaupadi* huts and found negative effects. However, additional research is needed in a number of areas including on how the practice—including having to share sleeping quarters with animals—affects women and children's physical and mental health, childbirth experience, and post-natal care, and how women are navigating the path between the community that forces them to practice *chhaupadi* and criminalization of the practice by the state.

KEYWORDS

Chhaupadi, menstruation, mental health, women's health

Highlights

- This study synthesizes existing evidence on *chhaupadi*, a practice in Nepal where women are forced to stay away from home during menstruation and childbirth.

- The primary concern for women during seclusion is safety.
- There is a critical need for additional research on the practice's effects on physical and mental health women and children.
- Additional research is also needed on the effect of the recent criminalization of the practice.

INTRODUCTION

Chhaupadi practice is an extreme form of menstrual taboo where women are considered untouchable and are isolated during their menstruation and childbirth. Although women all over Nepal undergo some forms of restriction during menstruation, *chhaupadi* is mostly prevalent in the western part of the country. The word "*chhau*" means menstruation, and "*padi*" means women in the local dialect (Karki & Khadka, 2019a). The word "*chhaupadi*" has a negative connotation. "Sophisticated" households call menstruating women "nachune bhaeko," which translates to "untouchables."

Girls and women undergo different forms of violence during *chhaupadi*. According to one media account, 18 girls died during *chhaupadi* between 2005 and 2018 in Nepal (Dhungana, 2018). The number of deaths could be under-reported since the practice is now illegal. There is also evidence of assaults and other health implications for women undergoing this practice. International media, human rights groups, and UN agencies have condemned the practice (BBC, 2017; The Guardian, 2019; The New York Times, 2018; United Nations Resident and Humanitarian Coordinator's Office, 2011). The government has attempted to abolish the practice multiple times by employing various strategies including the criminalization of the practice. However, the changes are slow to come.

Despite the potential implications of this practice for women's health, its causes and impacts are poorly understood. This review aimed to document common themes from the limited existing literature to better understand how the practice impacts women and children's health. The key research questions were: (i) How is *chhaupadi* practiced? (ii) What are the health effects of *chhaupadi* on women and their children? and (iii) What are the implications of the recent criminalization of the practice by the government? The review also identified the gaps in the current research.

METHODS

The author searched four databases—EBSCO, SCOPUS, Sociological Abstracts and PubMed, and Google Scholar using the key term "*chhaupadi* Nepal." The inclusion criteria were: (i) the publication centered on *chhaupadi* and (ii) the publication used an empirical study format. The exclusion criteria were (i) opinion pieces; (ii) news items; (iii) NGO/INGO reports; (iv) publication based on textual analysis; and (v) theses. As shown in Figure 1, 505 articles were screened. In the first step, duplicates and records that were not about *chhaupadi* were excluded. After reviewing the abstracts and eliminating those that were not empirical studies of *chhaupadi*, 20 articles were chosen. Excluded articles included reports, opinion articles, articles based on text analysis, and studies focusing on hygiene management. An additional two articles were eliminated that were based on NGO work. This resulted in 18 articles for the final review. The publication date of the articles ranged from 2015 to 2021.

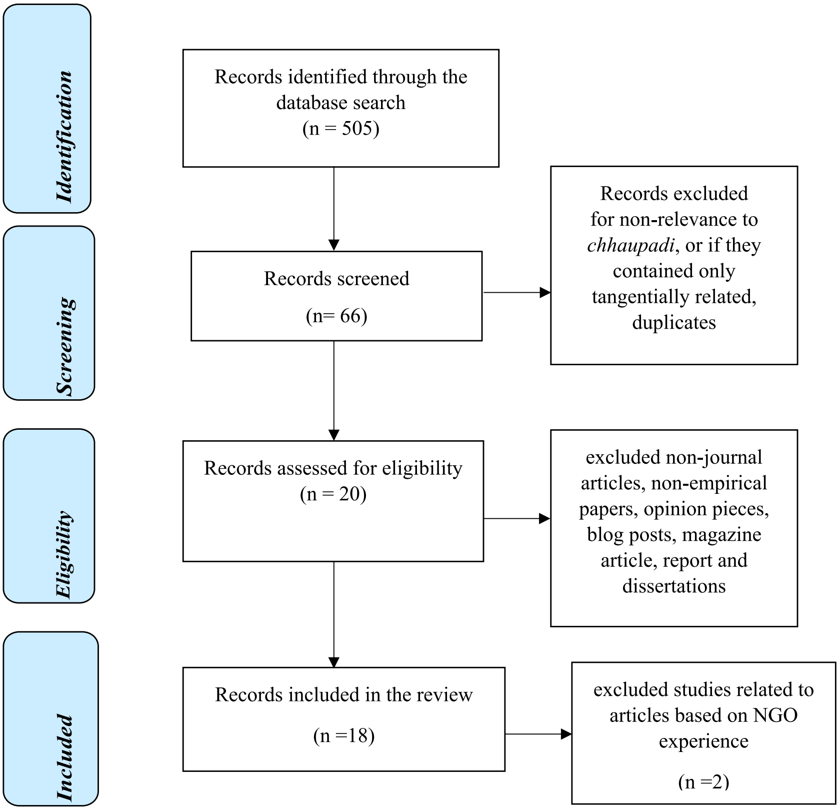

FIGURE 1 PRISMA flow diagram for the *chhaupadi* practice in Nepal

FINDINGS

In this section, the characteristics of the studies included in the analysis are discussed, followed by a description of the nature of the practice, including key restrictions women face and the extent of their vulnerability. Next, the impact of the practice on women and their children's health is discussed. The implications of the recent criminalization of the practice are discussed in the final subsection.

Study characteristics

Table 1 contains the list of the reviewed articles. The table contains the articles' information on the year of publication, title, geographic and topical focus, the number of study participants, and methods. All the studies were conducted in the far- and mid-western districts of Nepal where the *chhaupadi* practice is concentrated. Six studies were conducted using qualitative methods, seven using mixed methods, two using collaborative film making, and three using a quantitative survey method. The topical focus of the articles encompassed the description of *chhaupadi* (nine studies), the practice's impact on health (three studies), the impact of criminalization (four studies), and maternal and child care during *chhaupadi* (two studies). Most studies focused on the *chhaupadi* practice during monthly menstruation; only two explored the practice during child-birth.

TABLE 1 List of included studies

	Authors/year/title	Location	Focus	Methods Qualitative/ Quantitative	Number of participants
1.	Baumann, Lhaki, et al. (2021)	Kalikot District	*Chhaupadi* practice after criminalization	Qualitative	81 total participants:
	Is criminalization the answer? Perspectives of community members and police on menstrual seclusion policy in Far-West Nepal			Indepth interviews, FGD	School going girls (24), dropped out before school (4), mothers (24), fathers (4), teachers (4), health care providers (4), religious leaders (4), traditional healers (4), police (6)
2.	Thakuri et al. (2021)	Surkhet District	*Chhaupadi* practice and policy analysis	Mixed-method	Quantitative survey girls (221)
	A harmful religio-cultural practice (Chhaupadi) during menstruation among adolescent girls in Nepal: Prevalence and policies for eradication			Survey and content analysis of policies	
3.	Pandit et al. (2021)	Bajura District	*Chhaupadi* practice	Mixed-method	Survey Women (175) FGD 1 (18 participants)
	Misconception and Effect of Menstruation (Chhaupadi) and Delivery on Women's Health in Bajura, District Nepal				
4.	Khadka (2020)	Achham District	*Chhaupadi* practice	Qualitative interviews	NA
	Chhaupadi Pratha: Women's Experiences and Perceptions about Social Suffering				
5.	Joshi and Maharjan (2021)	Kailali District	Maternal and child care during *chhaupadi*	Qualitative interviews	Women (30), key informants (5)
	Exploring Perceptions and Experiences of Community People toward Chhaupadi Culture in Nepal: Social-Ecological Approach				

TABLE 1 (Continued)

				Methods	
	Authors/year/title	**Location**	**Focus**	**Qualitative/ Quantitative**	**Number of participants**
6.	Thapa et al. (2019) *'Menstrual blood is bad and should be cleaned': A qualitative case study on traditional menstrual practices and contextual factors in the rural communities of far-western Nepal*	Achham District	*Chhaupadi* practice	Semi-structured interview	Women (4), men (3), health volunteer (2)
7.	Bam (2020) *Negotiating pathways for the continuation of chhaupadi system in remote parts of Nepal*	Kalikot District	*Chhaupadi* practice	Quantitative Survey	Total 150 Women (75), men (25), children (25), elderly (25)
8.	Baumann, Lhaki, et al. (2021) *Beyond the Menstrual Shed: Exploring Caste/Ethnic and Religious Complexities of Menstrual Practices in Far-West Nepal*	Kanchanpur District	*Chhaupadi* practice among different caste and ethnicity	Collaborative filmmaking	Girls (7)
9.	Baumann et al. (2020) *Collaborative Filmmaking: A Participatory, Visual Research Method*	Kanchanpur District	Self-video making on the practice	Collaborative Filmmaking	Adolescent girls (7)
10.	Thomson et al. (2019) *What's missing in MHM? Moving beyond hygiene in menstrual hygiene management*	Dailekh District	*Chhaupadi* practice	Mixed method Survey, FGD	Adolescent girls (400, survey) (8 FGD)
11.	Karki and Khadka (2019a, 2019b) *Social Discourses on Practices and Remedies of Harmful Tradition of Chhaupadi in Far Western Region of Nepal*	Kanchanpur and Dadeldhura	*Chhaupadi* practice	Qualitative semi-structured interviews	NA

(Continues)

TABLE 1 (Continued)

				Methods	
	Authors/year/title	**Location**	**Focus**	**Qualitative/ Quantitative**	**Number of participants**
12.	Wong (2018) *Challenges faced by communities moving away from Chbaupadi in Far-Western Nepal*	Kanchanpur District	Community conflict after criminalization	Qualitative Semi-structured interview	Women (13) (more than 18 years)
13.	Amatya et al. (2018) *Practice and lived experience of menstrual exiles (Chhaupadi) among adolescent girls in far-western Nepal*	Achham District	*Chhaupadi* practice	Mixed methods Survey, FGD Interviews, observations	Adolescent girls in two schools (107, survey) girls (7, interview)
14.	Parajuli et al. (2018) *Chhaupadi during menstruation still a major community health challenge: perspective from Mid-Western Nepal*	Pyuthan District	*Chhaupadi* practice	Mixed-method Cross sectional survey and interview	Women (109, survey) (5, phenomenological study)
15.	Jun and Jang (2018) *The Role of Social Capital in Shaping Policy Noncompliance for Chhaupadi Practice in Nepal*	Tikapur District	Role of social capital in *chhaupadi*	Quantitative Survey	Individuals (412) Women (253) men (159)
16.	Gautam (2017) *Chhaupadi: A menstrual taboo in Far Western Nepal*	Doti District	Perception toward *Chhaupadi*	Mixed Method, Survey, FGD	Adolescent girls from 8th, 9th and 10th grade (185)
17.	Ranabhat et al. (2015) *Chhaupadi Culture and Reproductive Health in Nepal*	Kailali and Bardiya District	Reproductive health	Quantitative Survey	Women (672)
18.	Joshi (2015) *Chhaupadi Pratha: Socio-cultural violence against women in the Far Western Region in Nepal*	Sukunda VDC in Bajhang District	*Chhaupadi* practice	Mix-method Cross-section survey FGD and interview	Women (88, survey) (8-10, FGD) (4, interviews)

Bam (2020), Jun and Jang (2018), and Ranabhat et al. (2015) used surveys focused on the prevalence of the *chhaupadi*. The number of participants ranged from 88 to 672 in the surveys. Among the studies using mixed methods (Amatya et al., 2018; Gautam, 2017; Joshi, 2015; Pandit et al., 2021; Parajuli et al., 2018; Thakuri et al., 2021; Thomson et al., 2019), interviews and focus group discussions were used to triangulate the survey. Studies using qualitative methods (Baumann, Merante, et al., 2021; Baumann, Lhaki, et al., 2021; Joshi & Maharjan, 2021; Karki & Khadka, 2019a; Khadka, 2020; Thapa et al., 2019; Wong, 2018) elicited more nuanced information on the underlying phenomena and provided critical, detailed information regarding *chhaupadi*. The participants in qualitative studies ranged between three to 81.

In a unique study, Baumann et al. (2020) employed collaborative filmmaking and explored *chhaupadi* by providing cameras to adolescent girls so they could make videos of their experiences. Their detailed studies elucidated how girls from various ethnicities and castes experience the restrictions differently.

The nature of the practice

Key restrictions women face in *chhaupadi*

Under *chhaupadi*, during menstruation and childbirth, women are considered impure and untouchable, and they undergo many restrictions. They are restricted from touching other people or sources of water, entering temples, participating in social events, eating inside the kitchen, and using household toilets. Amatya et al. (2018) found that 62% of participants had to eat outside the home, 38% had to eat at the place they stayed during menstruation, and 67% had to use open space for toilets. In some cases, the male members, including the husband are restricted from going near the shed in which the women must stay. Gautam (2017) found that respondents were not allowed to participate in religious activities, and 80% were not allowed to touch other people, animals, and plants. Thakuri et al. (2021), Bam (2020), Parajuli et al. (2018), and Baumann, Lhaki, et al. (2021) reported similar restrictions regarding cleaning, cooking, eating and drinking, touching, worshipping, sleeping, and maintaining physical distance. Furthermore, Baumann, Lhaki, et al. (2021) found that the range of restrictions varied from less restrictive to more restrictive based on caste and ethnicity. Dalit girls followed the strictest bathing and cleaning practices. During menarche (the first-time girls menstruate) the restrictions were stricter, as girls were not allowed to see the sun or go outside (Parajuli et al., 2018).

Types of practice and duration of stay

Thapa et al. (2019) categorized the practice into two types: separation and seclusion. In separation, women live inside their house but use separate bedrooms, clothes, and utensils. They are also forbidden to touch anybody, or enter the kitchen or worship areas. Most of the Nepali women practice separation during menstruation. In contrast, in seclusion practice, women had to stay in a small hut specifically made for the purpose or were forced to stay in animal sheds. They can be “normal” again only after purification rituals. Participants in Baumann et al. (2020) provided rich details on the purification rituals of girls from different castes.

The seclusion that is practiced during childbirth is called major *chhau*. During major *chhau* women are secluded for a longer period of time, ranging from 11 to 30 days (Joshi & Maharjan, 2021; Lama, 2015). Minor *chhau* is when women are secluded during their monthly menstruation. The number of days women stay in the *chhau*-hut varied. Usually, the number of days is counted from the first day of a woman's menstruation. For example, Gautam (2017) found that 23% stayed for 3–4 days, 33% stayed for 5–6 days, and 56% stayed for 7–10 days; meanwhile Thapa et al. (2019) found that women had to stay in huts for 5–7 days. Karki and Khadka (2019a) found that men and elderlies do not touch menstruating women for 5 days. It seems that the duration of stay is dependent on whether the woman is secluded during childbirth, during monthly menstruation, or whether they are getting their period for the first time. However, the reasons for the variation on days of the stay are not clear. Regulations might vary based on caste, ethnic groups, or locality as well.

Huts and animal sheds

The huts where women stay during *chhaupadi*, called “*chhau-goth*” (*goth* = huts) are usually small. During their observation of the huts, Amatya et al. (2018) found that most of the structures lacked ventilation/windows, electricity, toilets, warm blankets, and mattresses. Many of the huts did not have locks; the doors were narrow, dark, and congested, as was the space inside (Khadka, 2020; Wong, 2018).

More recently, villagers were also building the bigger menstruation huts collectively so that women in the neighborhood could stay together and protect themselves (Thapa et al., 2019). People with more income had sturdy room with toilets. Baumann et al. (2020) also found that girls were staying in bigger rooms and mentioned that not all girls and women are staying in dilapidated huts.

The studies indicated that the share of women staying in huts seems to be dependent on the district. For example, compared to Doti and Kanchanpur (Gautam, 2017; Joshi, 2015; Jun & Jang, 2018), the number of huts is higher in other districts such as Achham, Bajura, or Kalikot (Bam, 2020; Pandit et al., 2021).

Increasingly, women are staying in animal sheds rather than in *chhau*-huts. Among the school girls surveyed by Amatya et al. (2018), 3.9% were staying in separate *chhau-huts*, 81.8% were staying in animal sheds, and 11% were staying in the courtyard. Similarly, Gautam (2017) found 76% had to stay in an animal shed while 13% lived in a hut. Only 7% lived in a separate room inside the house. Other studies (Joshi, 2015; Karki & Khadka, 2019b; Khadka, 2020) also corroborated these findings.

Studies did not explore more about animal sheds despite 70%–80% of women staying in them. The animal sheds are unsanitary and also pose the risk of transmitting pathogens and diseases. Exposure to animal feces is associated with diarrhea, soil-transmitted helminth infection, trachoma, environmental enteric dysfunction, and growth faltering (Penakalapati et al., 2017). Animal sheds where women sleep also lack enough ventilation, electricity, doors, and latches. The sheds are not warm enough in colder months, which exposes women to hypothermia, asthma, and other reproductive health complications.

Impacts on women's lives

Death and physical abuse

Although there is no official documentation of how many women have lost their lives in *chhau*-huts, the media has reported 18 deaths since 2005 (The New York Times, 2018). The deaths are likely undercounted, as there are no mechanisms to document the reason for death when someone dies, and communities are likely to attribute *chhaupadi*-related deaths to other factors due to fear of punishment by the government. Anecdotally, a 21-year-old woman was burned to death, and a 35-year-old mother and her two sons, ages 7 and 9, died of suffocation in the winter of 2019 (Schultz & Sharma, 2019). The deaths in *chhau*-huts occur primarily due to suffocation, snake bites, and hypothermia. In one case, when an 18-year-old girl died in a hut, the villagers tried to hide the incident. The reporter who published the story was threatened and barred from entering the village (Dhungana, 2018). Respondents in the studies reviewed also talked about the incidences of girls or women dying in the huts (Joshi 2015; Thapa et al., 2019). Amatya et al. (2018) found that nine out of 77 schoolgirls were bitten by a snake. The deaths are likely under-counted as there is no provision of documenting the reason for death, and under-reported, as the practice is criminalized.

Similarly, women are physically abused and raped in the *chhau*-huts, but there is no official data on these occurrences. Women are unsafe and vulnerable when sleeping in the huts. Amatya et al. (2018) found that three girls were physically abused in a hut, and all the girls in the study unanimously identified safety as their chief concern.

Thapa et al. (2019) reported that the community in the study was building common *chhau*-huts so that girls and women could accompany each other during seclusion, implying that the abuses are common.

Most of the reviewed studies have reported women and girls as being scared of attacks from wild animals, snakes, and insects. A 27-year-old Dalit woman in Joshi (2015) said:

> *Living in chhaupadi Gotha is a genuinely difficult and terrifying experience. When I was in my parents' house, I saw a woman getting raped by her alcoholic relative while she was sleeping in the chhaupadi Gotha. Similarly, I had also seen a woman, who was wearing ornaments, being robbed, and seriously injured. I always remember these two incidents when I go to live in the Gotha*. (p. 26)

Impact on physical health

The studies reviewed here have documented the immediate health impacts of *chhaupadi*. Ranabhat et al. (2015) found that *chhaupadi* was strongly associated with burning micturition, abnormal discharge, itching in the genital area, and pain and foul-smelling discharge during menstruation. They also found that women's utilization of water resources was significantly lower during menstruation, and women had several food restrictions, which lead to malnutrition.

Amatya et al. (2018) found that 83% of women in their study experienced problems due to cold, as the *chhau*-huts lacked sufficient sleeping materials such as mattresses and blankets. Girls in their study also reported experiencing diarrhea, dehydration, and urinary tract infections. Respondents in Thapa et al. (2019) complained about their bedding and clothes getting wet during winter because of frost and dew. Women have reportedly caught fire or suffocated from smoke during winter months when they lit fires to keep themselves warm. Women are also being forced to give birth in separate sheds and stay there for prolonged periods of time.

Lama (2015) explored the maternal and childcare practices in *chhaupadi* and found that during childbirth, women and infants are kept in *chhau*-sheds for 11 days. The majority of study participants gave birth at home instead of health institutions, and some women had to give birth in sheds. One of the participants explained her experience during childbirth as:

> *We have to stay in a separate room. They (family members) do not allow us to touch things, saying it will make them impure. We are not allowed to consume milk and milk products like ghee for certain days. I didn't eat them for ten days and stayed in that room (showing the room) for the same ten days. We have to take a bath every day. We eat oil and rice but no salt is consumed. They said it will defile the kitchen at home, so they separated the place for me to cook and eat*. (p. 27)

Lama (2015) also found that “swollen extremities, abdominal pain, colds, and urinary tract infections were common problems among women during the postnatal isolation period and menses” (p. 29). Pandit et al. (2021) also found that 92% of their participants stayed in huts during childbirth, and 11% of women delivered babies by themselves. Women complained about bleeding and infection during childbirth. There is no evidence on the extent to which women get medical attention during and after childbirth because of *chhaupadi*. Choulagai et al. (2013) found that less than 50% of women in the far- and mid-west of Nepal give birth with the help of skilled birth assistants (SBA). However, it is not clear how *chhaupadi* affects women's access to medical services. Joshi and Maharjan (2021) interviewed 30 women and mothers and asked about their healthcare behavior during childbirth. Although the article is unclear on whether all women undergo restrictions during their childbirth, some participants reported that they had to stay separately, and the majority of women gave birth at home.

Impact on mental health

Women and girls in almost all studies reported that they felt unsafe, scared, stressed, and lonely during their stay in *chhaupadi*. Amatya et al. (2018) found that 26% of girls suffered loneliness, 18.2% lacked interest in doing things, and 11.7% had experienced sleep disturbance. In Joshi (2015), respondents reported that they were worried about sexual abuse by drunken men and attack from animals and snakes, so they could not sleep well in the huts. Women have also reported feeling particularly vulnerable when they heard about other girls or women dying in the *chhau*-huts. An 18-year-old girl shared her experience as follows (KC, 2018):

> *I remember one incident when I heard a goat crying during night, then heard a tiger roaring nearby. I got so scared I started crying and shouting after my father. Then, he and some other neighbor came out to find that the tiger had killed a goat and taken it away from our animal shed. I started shivering out of fear as I was not allowed to go inside my house. My father covered the hut with some woods and asked me to stay inside without fear. I was awoken, scared, tense and frightened the whole night*.

Additionally, it is customary for married Nepali women to wear gold jewelry even when there is no special occasion. This norm seems to have added to women's fear during menstruation, as women have reported a fear of getting robbed when they are in the huts.

Impact on children

Younger children often accompany their mothers in *chhau*-sheds and stay with them overnight (Joshi, 2015). The children are not allowed to enter the house without bathing even during the winter, which exposes them to the cold. 55% of the mothers in that study reported that they were worried that their children might get sick. One of them said:

> *When I was in chhaupadi Gotha with my child during the winter season, we became ill and I couldn't sleep properly. Both of us had a high fever and cough. My mother-in-law and husband did not care about me while they bathed my child in cold water to take him to the sub-health post. He was later diagnosed with pneumonia. They cared for him, but nobody came to help me before the fourth day*. (p. 26)

Another respondent also mentioned that children had diarrhea, acute respiratory tract infections, pneumonia, malnutrition, insect bites, and injuries that were potentially linked to *chhaupadi*. However, this is an acutely under-researched topic. The implications of *chhaupadi* on children's health has not been explored adequately.

Impact on nutrition

Studies also found that women and girls were not allowed to eat certain food items during *chhaupadi*, such as milk and milk products. Amatya et al. (2018) found that 97.4% of girls in their study were not allowed to eat dairy products. Similarly, Gautam (2017) found that none of their study participants were allowed to eat dairy products, 87% were not allowed to eat vegetables, and 7.6% were not allowed to eat meat or meat-related products. Joshi (2015) also found that 90% of the respondents were only allowed to eat dry bread or rice with salt. The reason for these restrictions is linked to beliefs that if women in *chhaupadi* eat dairy products, the cows and buffaloes get sick.

Other psycho-social impacts

Internalization of the "impure" being

Participants in the reviewed studies reported that women became impure, thus "untouchable" during menstruation. The sense of impurity is ingrained in them from a young age through rituals such as "purifying" someone with sprinkled water dipped in gold or cow urine if that person comes in contact with a menstruating girl.

Dalit participants in Joshi's (2015) study complained that they faced "double untouchability" during menstruation. They were always considered "untouchables" by upper castes. During menstruation, they were "untouchable" at home, too.

The restrictions that girls face during menstruation and those which Dalits face are both linked to a Hindu myth holding that when Indra, the king of God, killed a brahmin (an upper caste person), Indra passed his sins to women, and women absolve his sins monthly during menstruation. The notion of "pure" versus "impure" is pervasive in the Hindu religion and forms the core of a highly stratified and hierarchical system. The internalization of one's "untouchable status" is in itself an act that creates the hierarchy. The logic of "I am pure" thus "I am supreme" and "you are impure and beneath me, thus you should serve me" is deeply rooted in Hindu culture and is the reason for exploitation of Dalits as well as women. This notion of supremacy is similar to white supremacy in Western culture (Wilkerson, 2020). The act of "untouchability," both to Dalits and menstruating women is an instrument that perpetuates their subordinate status, thus maintaining the caste and gender hierarchy.

The fear of harming others

Participants in the studies were constantly worried about the possible calamity they could bring onto their families and livestock if they violated the restrictions. The fear instilled in women about accidentally harming the community is one of the major causes behind the continuity of *chhaupadi*. One participant in Amatya et al. (2018) said that if she did not follow *chhaupadi*, it would bring bad luck and something bad would happen. Thakuri et al. (2021) also found that their participants continued the practice because they thought that they were impure during menstruation, were afraid of gods, and worried that family members would get sick.

One participant in Joshi (2015) talked about her impure touch that could cause trees, men, or animals to die. Thapa et al. (2019) reported the alleged consequences of not following the restrictions as imagined by women and men as follows:

> *…family members would be attacked by a leopard, family members being ill, death of the family members due to bloody vomiting, destruction of the crops and sudden death of the livestock (e.g., buffaloes and cows)*.

The consequences of not following restrictions are passed from one generation to the next, mainly by the elderly women and traditional healers. When a villager gets sick, they go to healers, who then blame women—often the most vulnerable ones in the village, such as a widow—for not following the restrictions strictly (Bam, 2020; Pandit et al., 2020; Thakuri et al., 2021; Thapa et al., 2019). If a woman is seen not following the restrictions, she is blamed and ostracized for anything that goes wrong in the community. In Amatya et al. (2018), a representative from the local organization described the challenges in surmounting such disbeliefs as follows:

> *The challenges we are facing in our organizations in the abolishment of chhaupadi are that people have traditional values/beliefs which are difficult to change. People have the superstitious belief that letting menstruating women inside homes will bring misfortune to their families. The beliefs are so ingrained that they believe that the recent disastrous earthquake in Eastern and Central parts (of Nepal) was due to the sin people have committed by letting menstruating girls and women in their homes*.

The misconceptions above have also been used to stop the abolition of the practice. One of the respondents in Lama (2015) responded to the hut dismantling program as:

> *It has been a long time since there has been rainfall now. It's all because of the fact that the goth (sheds) was destroyed. There is no cultivation anymore because of drought*.

Consequences of criminalization

Nepal's supreme court banned *chhaupadi* in 2005. In 2008, the Ministry of Women, Children, and Social Welfare introduced guidelines to eliminate *chhaupadi* (The Kathmandu Post, 2017). In 2018, parliament criminalized the practice by issuing a criminal code (Government of Nepal, 2017). The code states that "Women are not allowed to be discriminated, kept in *chhau*-sheds and should not be treated inhumanely. The person who does that will get three months of the jail sentence, Rs. 3000 fines, or both (168, 3)"

However, the code does not have any implementation plan. It does not clarify who in the household will be punished in case women are found practicing *chhaupadi*.

There is a huge gap between the government's policies on *chhaupadi* and reality. Baumann, Lhaki, et al. (2021) found that the majority of their participants had no knowledge of criminalization of *chhaupadi*. However, after learning the practice is punishable with fines and jail-time, one-third of the respondents reported that they would change their behavior.

Thakuri et al. (2021) pointed to the lack of monitoring and budgetary mechanisms at regional and local levels of the government as the possible reason for the ineffectiveness of the law. Another reason for the ineffectiveness might be the high cohesion among community members against the regulations as indicated in Jun and Jang (2018).

There are many loopholes in the regulation. For example, women are unlikely to come forward and file reports against their husbands or in-laws. The law is not clear on what happens if women voluntarily choose to stay in *chhaupadi*. The Nepal Human Rights Commission (2019) recommended that the government strengthen the law by adding measures to ensure the safety of the women in *chhaupadi*, provide compensation, ensure the safety of individuals who report the case, and provide counseling to the victims.

As a part of their strategy to eliminate *chhaupadi*, some local governments are denying social services to the households that continue the practice. They are denying services available from the central government, such as the provision of nutrition allowance, old age allowance, birth registration, citizenship verification, and loan recommendation (The Guardian, 2019). The people in the *chhaupadi*-affected villages rely on social security programs to sustain themselves, especially given the frequent drought seasons, which result in food insecurity and malnutrition (Gyawali, 2016). Denying them those critical social services could further push them to the brink of hunger. Local authorities are also using positive rewards in some villages. For example, in one village in Doti District, the local authorities announced a reward of Rs 5000 (~$44) to women who reject the practice (AlJazeera, 2019). Despite all of these efforts, the practice continues, suggesting that more aggressive measures may be needed.

In some communities, NGOs in coordination with local administrators and police dismantled the huts. Wong (2018) found that dismantling huts resulted in emotional distress, loss of property, and social discontent in communities. In some communities, the local government and NGOs warned the community members to get rid of their *chhau*-sheds and warned that the failure to do so would result in them forfeiting public services. Many huts were destroyed, and some women started staying in their homes during menstruation. However, the majority of the households was not happy with the process and responded by repairing or rebuilding the damaged goths and having women use a different hut or a makeshift shelter outside the house. Overall, the top-down approach of dismantling huts seems to have put the women in a more difficult position.

DISCUSSION

There are a limited number of studies on *chhaupadi* to draw conclusive findings on how it is practiced, its health impacts, and the implications of its criminalization by the government. One of the major themes that emerged from these limited studies was girls' and women' safety. The reviewed studies indicated that many women and young girls lost their lives because of *chhaupadi*. Women died because of suffocation, hypothermia, animal attacks, and snake bites. The review also found that there were variations in how *chhaupadi* is practiced. The total number of days during which women stay in huts and what they can or cannot do varies across studies. Increasingly, women are staying in animal sheds rather than in separate *chhau*-huts. The review also indicated that the practice has negative implications on women's and their children's health.

Young girls and women with children practicing seclusion are more vulnerable to *chhaupadi*. There are possibilities of attacks from wild animals or even men when the huts are secluded. The seclusion practice is more prevalent in mountainous rural communities in the far- and mid-west of Nepal. Women from these regions are marginalized in multiple ways—their access to security, food, education, health, and other measures of development are already limited. The Human Development Index for these regions is the lowest in the country (Sharma et al., 2014).

Because *chhaupadi* is also practiced during childbirth, women may not get enough medical assistance as well as good care after delivery. The complication of childbirth in questionable conditions might result in serious health impacts for both women and infants. In the mountainous region of mid- and far-west Nepal, the infant mortality rate is high—97 and 74 deaths out of 1000 live births, compared to the national average of 47 deaths per 1000 live births. Similarly, the presence of skilled birth attendants during childbirth is 27% and 19.5% in those region compared to 55.6% of the national average (United Nations Children's Fund, 2018). *Chhaupadi* could be one reason for the low uptake of health services and a higher infant mortality rate in the region.

Chhaupadi is sustained by the fear that if a woman does not follow the rules, there would be consequences and she would be responsible for them. Women's sense of "impurity" and the "possibility of causing harm" is instilled in them from a young age. Given the "risks," in some cases, women were ready to sleep in the open rather than sleep inside the house. These findings are similar to what Hennegan et al. (2019) found in their systematic review of menstruation experiences in low-and-middle income countries. Hennegan et al. (2019) found that components of menstruation experiences such as menstrual practices, perceptions of practices and environment, confidence, shame, and distress contributed to negative effects on physical-mental health, education, and social engagement.

The findings of this review should be taken with a number of caveats. A number of eligible studies may have been missed during the search. The review also did not include articles that are published in Nepali, the country's official language. The articles included in the review were heterogenous in terms of the methods used, the number of study participants, and geographic focus. In qualitative studies, the sample size was lower than 20 in the majority of the studies. In quantitative studies, most of the surveys were conducted among girls who were attending schools, thus leaving out the girls and women from the communities. Finally, the review also did not include NGO reports that documented the NGOs' experience while working on *chhaupadi* issues.

Despite these limitations, the review helps identify gaps in the current knowledge where more research is needed. Specifically, there is a paucity of research in understanding how *chhaupadi* affects women and children's health. Among the studies reviewed here, only Ranabhat et al. (2015) explored the association of *chhaupadi* with reproductive health outcomes. Moreover, the study was conducted in the Terai region where the practice is comparatively less prevalent and less restrictive. Women have low body mass index and anemia in the far- and mid-western mountainous region of Nepal where the prevalence of *chhaupadi* is high. Restriction of food during *chhaupadi* might worsen their nutrition status. There is no study on how the practice affects children who often accompany their mothers. Research is also needed on how co-sleeping in animal sheds affect women and children's health.

Criminalizing *chhaupadi* has further complicated the problem and caused additional conflicts in the community. Women now have to navigate the difficult path between the community that forces them to practice *chhaupadi* and the state that has criminalized the practice. Additional research is needed to understand how women are coping with this new reality and how this is affecting their lives. On the positive side, the research also showed that people were likely to change their behavior once they knew about the criminalization. However, there is a gap between the laws in the paper and their implementation on the ground.

Most of the studies have not investigated how the experience of women varies across ethnic, economic, and social status. Thomson et al. (2019) found that Dalit women were more likely to experience *chhaupadi*. However, the study does not examine how their experiences are different than Brahmin/Chhetri women. Baumann et al. (2020) also had a similar finding, but her participants included only seven participants. Similarly, studies have not explored the extent to which the intensity of practice and experiences of women varies based on geography. Many of the studies were conducted in the Achham district, although there are other districts such as Kalikot, Bajura, Bajhang, Baitadi, Rolpa, Mugu, Darchula, and Dolpa where the intensity and vulnerability are likely to be more acute.

Chhaupadi might also affect mental health of young girls and women as they are in constant fear and are anxious about their safety. The untouchable status could also affect their mental health as well as their self-esteem. In a recent study on the effect of caste on mental health among adolescents in Nepal, Kiang et al. (2020) found that low caste Dalit groups reported more anxiety, depression, and low self-esteem compared to their counterparts from high caste and ethnic indigenous groups. They also found that gender differences were significant, with girls reporting significantly higher anxiety and depression and lower self-esteem than boys. The effect of childhood abuse on mental health such as depression and anxiety has been causally established in high income countries (Norman et al., 2012; Shen, 2009). Similarly, studies have shown a significant relationship between depression and gender discrimination (Kira et al., 2017; Lazarevic et al., 2018; Stojanovski et al., 2018). In the study reviewed here, Baumann, Lhaki, et al. (2021) and Thomson et al. (2019) found that Dalit girls undergo stricter restrictions than non-Dalit girls. However, the studies on the impact of such restrictions on mental health have yet to be conducted in the context of *chhaupadi*.

On the positive side, anecdotal evidence indicates that in some ethnic groups, *chhaupadi* is a communal event that has a celebratory aspect. In some villages, when girls get their first period and are secluded, their friends come for a sleepover, bring food, and celebrate by singing and dancing. Baumann et al. (2020) cited a report by NFCC where a group of girls in the Bajura district mentioned that they liked staying in huts as they had the opportunity to rest and enjoy the company of friends. Menstruation research in western countries has found that if the girls are well-prepared and get positive messages on menstruation, they take it naturally and positively (Brantelid et al., 2014; Sveinsdóttir, 2017). Thus, the celebratory aspect of *chhaupadi* could be a space for girls' bonding and getting respite from their daily drudgeries. This aspect of *chhaupadi* has not been studied.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

ETHICS STATEMENT

Ethical clearance was not required because this study does not involve human subjects.

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Understanding the gap between policy and facts: The Italian experience on federal decoupling in the implementation of breast units

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Abstract

Decoupling in the health-care sector is a highly problematic phenomenon that easily leads to dramatic failures in strategy implementation. Although decoupling is addressed frequently at the organizational level, there exists extremely poor evidence of its presence at the federal/regional level. This study provides an investigation on the implementation of Italy's directive on the reorganization of regional health-care systems' networks based on breast units, with the intent of detecting different levels of compliance across regions and possible decoupling phenomena. Nonparametric tests are carried out to assess the gaps between formal and concrete compliance to the national directive across regions. Results suggest that decoupling occurs at the regional level, but formal compliance positively affects concrete compliance in the long term. Implications for policymakers concern their awareness of possible discrepancies between formal compliance to their directives and concrete changes in the way health-care services are managed, as well as a strategic understanding of how these are doomed to be mitigated in the long run. Such awareness should affect the ability of policymakers to adapt and interpret performance measurement systems accordingly.

KEYWORDS

breast unit, decoupling, early and late compliance, Italy, regions

Highlights

- Decoupling is seldomly addressed at the federal/regional level in the health-care sector.
- Breast Units are an innovative and highly regulated response to the need of managing breast cancer and may help understand decoupling phenomena at the regional level.
- Decoupling is indeed present at the regional level in Italian regions, committed to implement breast units.
- Contextual factors are likely to affect decoupling independently from a regional formal compliance to regulations.
- Yet formal compliance to regulations eventually *reduces* decoupling in time.

THEORETICAL CONTEXT

Studies focused on applications of institutional theory in the health-care sector have frequently confirmed the need for health-care organizations to acquire legitimacy from stakeholders through a resilient approach toward the external environment (Seixas et al., 2021). Institutional isomorphism has been detected and explained extensively in this field (Alyahya et al., 2018) while exploring common dynamics and strategies of change across health-care organizations (Gabutti & Cicchetti, 2017). In turn, the problematic risk of incurring into decoupling phenomena, which imply the emergence of a gap between the formal adoption and the concrete implementation of practices, rules, or models, has drawn the attention of scholars (Fiss and Zajac, 2006). Decoupling implies that organizations formally declare they are implementing change but fail in doing so concretely. For example, they could formally adopt a new organizational chart, while concretely staff keeps on working following old hierarchical equilibria and assignments of responsibility. Furthermore, decoupling could, for example, concern a new procedure. An organization may formally state that the procedure is introduced, yet people keep on following old ones and finding ways to avoid them (Heese et al., 2016). Moreover, recent studies have further extended the concept of decoupling to organizations' morality and identity, which may be different from what is formally induced to believe by formal declarations of intents (Alexius & Grossi, 2018). There may exist strong incentives to adopt decoupling behaviors: the formal adoption of a rule or model may mean acquiring legitimacy in the surrounding environment. Yet, changing the way “things happen” may be costly, difficult, and challenging. Hence, it is frequently advantageous to enjoy the social benefits of appearing legitimate without bearing the costs necessary to implement concrete change (Meyer & Rowan, 1977). Decoupling phenomena are particularly frequent in highly institutionalized contexts, such as the health-care sector (Ruef & Scott, 1998; Scott et al., 2000) in which external pressures require mandatory interventions that cannot be disregarded. Although decoupling is frequently studied in the health-care sector at the organizational level (Gabutti & Morandi, 2018), to the best of the authors' knowledge there exists extremely poor evidence of its presence at the federal (or regional) level. Indeed, studies usually focus either on the (non) implementation of new models in health organizations (Mascia et al., 2014) or on organizations' resistance to truly change processes and to introduce new managerial cultures. For example, Attwood-Charles and Babb (2017) describe decoupling in the (missed) transition toward a lean philosophy in health-care organizations. Yet, understanding the dynamics of regional implementation of national strategies is key in designing and driving the latter consciously. The risks associated with this kind of decoupling are of different types. First, regional decoupling may lead to failures in implementing governmental strategies or reforms (Vakulenko et al., 2020). Moreover, central governmental bodies may be further penalized by detecting it after long periods of time, when many of their past interventions were based on mistaken assumptions on the degree of adherence to their lines of conduct (Schnoor et al., 2010). Finally, regional decoupling can cause deep inequalities across regions, with relevant practical implications for the populations of each (Quadraro et al., 2001). For example, systematic delays in implementing effective organizational models in health care in certain regions may lead to the provision of less effective health services and, in turn, to migration phenomena (Larson et al., 2004). Indeed, in Italy, regional decoupling in the health-care sector is a concrete risk given that the implementation of the National Health Care System's Directives depends nearly entirely on regional implementation. Moreover, Italy has historically experienced a high variability in regional responses (Cicchetti & Gasbarrini, 2016) with some regions being outstandingly reactive to national directives and others lagging behind to the point of being put under external administration (Milio, 2007). Understanding the dynamics that guide compliance or adoption of policies and politics is at the basis of policy diffusion theories. Seminal works have explained various factors able to stimulate (or hinder) the reactivity of states (or regions) to new policies (Gray, 1973; Walker, 1969). These may be internal (e.g., demographic, political), but may also have to do with a physical or nonphysical proximity to other states and their behaviors. More recent studies have extended this analysis to international policymaking (e.g., Meseguer & Gilardi, 2009), as well as to the potential benefits of national devolution versus centralization (e.g., Prakash & Kollman, 2003; Zeng & Eastin, 2007). No matter which approach is adopted, all these studies are aimed at understanding *why* some regions/states are more inclined (or rapid) in adopting new policies. Although this is a key question across most sectors and is surely relevant in the Italian regional health-care system, a further problem arises whenever such compliance or innovativeness does not lead to its intended changes. Therefore, even though regions may comply with directives and adopt policies formally, this may not translate into a concrete change in the behaviors or procedures which spread within them, leading, indeed, to decoupling phenomena.

The scenario just described within the Italian context is similar to that of other nations organized around a federal asset, with a high federal autonomy in the overall management of the local health-care system. These are frequently called to implement a re-organization of the provision of care through integrated networks (Golden et al., 2019). This means that settings should provide services that are coherent with their mandate, avoiding inappropriate hospitalizations or visits, which could be better carried out elsewhere. Settings, however, should be *inter-connected* within a network and address patients to the most appropriate one (Carini et al., 2021). An emblematic experience in this sense is given by managing and treating breast cancer, for which surgery should take place in adequate settings only (McDermott et al., 2013).

RESEARCH CONTEXT

Breast cancer is the most common cancer and the most frequent cause of cancer death in women (WHO databank available at https://www.who.int/whosis) with extremely relevant consequences both on nations' public health and economies (Sud et al., 2020). Medical professional organizations have established evidence-based clinical practice guidelines (Biganzoli et al., 2020) to improve the effectiveness of care for this pathology and to guarantee that surgery is carried out within safe and adequate settings. In particular, the European Society of Mastology (EUSOMA) and the European Organization for the

Research and Treatment of Cancer-Breast Cancer Cooperative Group (EORTC-BCCG) have set up international guidelines to define a "gold standard." These specify the mandatory requirements of settings allowed to perform surgery for breast cancer and that may therefore be entitled "Breast Units." In particular, breast units should meet the following requirements (Blamey et al., 2000).

- There must be an official formal document (in compliance with national regulations) that demonstrates their constitution (*formal document*).
- They must have more than 150 newly diagnosed cases of primary breast cancer per year to ensure a caseload that is sufficient to maintain expertise and cost-effectiveness (*critical mass*).
- They must have a core team composed of a surgeon, a radiologist, a pathologist, and a breast care nurse, all specifically trained in this field. They must also have swift access to the services of associated large oncology/radiotherapy centers (*multi-disciplinarity*).
- They must have written clinical protocols adapted for local use from international or national recommendations. These must include the organizational aspects required for effective diagnosis and management of breast cancer at all stages (primary and advanced), as well as for follow-up (*protocols*).
- It is recommended that units are involved in breast screening programs and that radiologists are involved in both screening and symptomatic breast imaging (*screening*).
- Units are encouraged to be involved in translational research (*research*).
- It is recommended that further services are systematically guaranteed such as, for example, clinics, clinical genetics clinic, psychological support, palliative care (*other services*).

Breast cancer treatment in multidisciplinary breast units has been shown to reduce 5-year mortality by around 20% because of greater adherence to guidelines, an increase in volumes, and a higher experience of specialists (Kesson et al., 2012). These positive results are due not only to a better surgery (because of high volumes) but also to higher integration of professionals and disciplines, each of which provides a contribution to the overall result (Isaacs et al., 2016; Vrijens et al., 2012). Hence, the requirements of reaching a certain threshold in volume (critical mass) and of having a multidisciplinary team (multidisciplinarity) constitute two particularly relevant aspects in the creation of breast units which are emblematic of the concrete implementation of a new and more effective way of treating breast cancer (Blazeby et al., 2006). For these reasons, the assessment of decoupling in this study is based on the implementation of these two mandatory requirements. Although the other requirements are also relevant, not all of them are mandatory in the Italian healthcare system and may possibly be interpreted as "less pervading" in organizational and managerial terms. On the contrary, the two requirements selected are possibly the most difficult to reach and, as mentioned, are scientifically held to be connected to higher performance. For example, a hospital may be more or less formally (but nonconcretely) *involved* in screening programs, while reaching a critical mass is a rather objective matter. Italy has introduced the EUSOMA guidelines already in 2003 through a series of normative actions. Nevertheless, their formal adoption at the national level is quite recent and is connected to a formal Directive negotiated between State and Regions in December 2014. As mentioned, though, in the country's federal asset, regions are required to adopt and implement national directives individually, enjoying a high level of autonomy in their concrete implementation processes. The implementation of breast units may be fragmented and diversified across regions. These have complied with the directive (by issuing a regional one) with different timings and, possibly, with very different intensities in its concrete implementation (Fattore & Longo, 2002). In turn, this may result in possible decoupling phenomena and in very different performance outcomes (Lega et al., 2013).

In this scenario, it is important to understand the dynamics through which regional adaptation to central directives is carried out and to clearly detect possible decoupling phenomena. This study provides an investigation on the implementation of Italy's directive on the re-organization of regional health-care systems' networks based on breast units, with the intent of detecting different levels of compliance across regions and possible decoupling phenomena. Moreover, it investigates relationships between formal and concrete compliance to national directives. By formal compliance, we intend the mere action declaring compliance through a regional directive. By concrete compliance, we intend a *real* adaptation of the regions to the two requirements assessed in this study.

MATERIALS AND METHODS

The first step of the study has been to assess all regional directives aimed at complying with the national directive of 2014. They were listed and their date of validity was noted. When more than one regional directive was issued, we took note of the first one. We clustered regions into “early compliers” if formal compliance has occurred between 2014 and 2016 and “late compliers” if it has occurred from 2017 on or has still not occurred. The decision of including regions that have not complied yet with the “late complier” group was due to the fact that all regions are required to comply at some point and, therefore, when this occurs, they will surely be considered laggards. The decision of clustering regions in the two groups based on the threshold of the year 2016 is due to a re-visitation of Walker's (1969) measure of the relative speed of adoption of new programs. In particular, Walker builds a measuring system that clusters states based on their percentile positioning within the whole range of states under analysis. This approach focuses on the *relative* speed of adoption (compared with other states) rather than on the absolute amount of time needed to do so. Other studies are based on a yes/no approach and distinguish the states/regions that introduce a policy intervention at a certain moment, from those that do not (e.g., Li, 2017). As mentioned, in this study, a third approach is adopted to better fit its aims. Regions are held to be “early compliers” if they have adopted a regional provision within 2 years from the publication of the national one and “late compliers” otherwise. Although policymaking is not always considered a linear and sequential process but is frequently seen as a cycle (European Union, 2017), the mere regional *formal adoption* of a national directive can possibly be thought of as a process with a beginning and an end. A time span of 1–2 years can be considered sufficient to fully adopt a policy intervention in health care, considering the various phases that make up an adoption process (Benoit, 2013). This clustering of regions into two groups was interpreted as regional *formal* compliance to the directive. Then, we analyzed all the public and private hospitals that have carried out surgery for breast cancer in Italy in the time frame 2015–2018 (2018 is the latest year for which complete data were available at the moment in which this study was carried out, i.e., 2020).

The study is built around two main official sources of data, both provided by the Italian Ministry of Health. The first is given by hospitals' discharge forms. These are used to collect both clinical and nonclinical information of all patients discharged from public and private hospitals throughout the whole nation. The second source of data is given by the “LEA Grid.”. This represents a national reporting system through which the government ensures all citizens a swift access to a list of health services considered “essential” (the acronym LEA stands for Essential Levels of Assistance). Through this grid, regions are required to annually provide proof of their compliance with “LEAs” which, in turn, is essential to have access to central national funds for the regional health-care system.

For each hospital we verified whether it complied with the yearly volume of first breast cancer interventions imposed by the EUSOMA guidelines (critical mass requirement) both in 2015 and in 2018. This information was available from its discharge forms. Then, we verified whether each hospital had complied with the requirement of having a multidisciplinary team again both in 2015 and in 2018. This information was provided by the LEA grid.

By assessing in parallel hospitals' volume of activity and the presence of multidisciplinary teams (i.e., the two mandatory and possibly most significant requirements to enhance a breast unit), we were able to map the existence of *concretely* compliant breast units across the country in the years 2015 and 2018. We took note of the year in which each region had *formally* complied with the national directive and have calculated the percentage of *concretely* compliant hospitals within it both in 2015 and 2018 (the percentage is calculated on the total number of hospitals performing surgery for breast cancer at least once during the year). We have then calculated the relative percentage increase or decrease of compliant hospitals for each region across the 3-year time span.

Through an assessment of the percentage of concretely compliant hospitals, we were able to detect the presence of decoupling phenomena across regions. Through the assessment of temporal trends of concrete compliance, we were able to determine whether these are affected by formal compliance. We investigated the relationship occurring between early/late formal compliance and the percentage of compliant hospitals in the year 2018, as well as the relationship occurring between the first and the increase/decrease of concrete compliance in the 3-year time span under analysis.

To this end and based on the objectives of this study, two null hypotheses were formulated:

$H1_0$: *the median value of the percentage of regional hospitals compliant with the national directive in 2018 is equal among regions labeled as early and late formal compliers*.

$H2_0$: *the median value of the percentage variation in regional hospitals compliant with the national directive between 2015 and 2018 is equal among regions labeled as early and late formal compliers*.

We performed nonparametric Mann–Whitney analyses to assess such relationships. Given the nature of the data analyzed, it was only possible to perform nonparametric tests.

RESULTS

Figure 1 displays all Italian regions, clustered in early and late compliers, as well as the year in which they have formally complied with the national directive. Northern regions are more frequently early compliers, while laggards are most frequently located in the South. Although a clear understanding of the reasons behind these patterns goes beyond the scope of this study, it is easy to detect a possible interregional influence due to geographical proximity or to similar socioeconomic features (given that Northern Italian regions are historically richer than the ones in the South) (Felice, 2018).

Table 1 reports the main data collected on formal compliance of regions to the 2014 national directive. In the second column, the year in which each region has issued its first directive of implementation is reported. Years go from Year 2015 to Year 2019. Two regions (Trentino Alto Adige and Calabria) had still not issued a directive when this study was conducted. In the third column, regions are split into "early compliers" and "late compliers." The fourth column displays the percentage of compliant hospitals in the region (on the total number of hospitals performing surgery for breast cancer within that region) in 2015. The same is displayed in column five for Year 2018. Finally, in the last column,

FIGURE 1 Regional formal compliance with the national directive by year. *Source*: Authors' elaboration

we report the percentage regional variation of compliant hospitals between the 2 years. As mentioned, we considered hospitals compliant only if they simultaneously guaranteed the expected critical volume of yearly surgery as well as the presence of multidisciplinary teams.

From the table, it is possible to see that formal compliance with the national directive has occurred across a rather vast range of time, with a peak of 5 years difference between one region and the other. We observe that the mean concrete compliance is far from reaching 100% both in 2015 and in 2018. Nevertheless, this percentage does increase from 29.4% in 2015 to 35.5% in 2018.

We also observe a very variable scenario across regions in terms of the percentage of hospitals meeting the main requirements under assessment. Both in 2015 and in 2018 such percentage ranges from 0% to 100%. Finally, high variability in the percentage increase (or decrease) of compliant hospitals between 2015 and 2018 is also detected. This value ranges from –16% to +37.1%.

To test our two null hypotheses, we performed two Mann–Whitney *U* tests with the data reported in Table 1. Median concrete compliances in early and late formal compliers in 2018 were 36.4% and 32.8%, respectively; the distributions in the two groups did not differ significantly (Mann–Whitney $U = 38.5$, $n1 = 8$; $n2 = 12$, $p < 0.05$ two-tailed). We could therefore not reject $H1_0$.

Median percentage variation in early and late formal compliers were 1.8% and 0.4% respectively; the distributions in the two groups differed significantly (Mann–Whitney $U = 12.5$, $n1 = 8$; $n2 = 12$, $p < 0.05$ two-tailed). We could therefore reject $H2_0$.

DISCUSSION

The analysis conducted leads to evidence on the presence of decoupling phenomena within the health-care sector at the federal level. The first point of interest concerns the fact that formal and concrete compliance to national directives does not coincide. Overall percentages of concrete compliance appear quite low throughout the whole period of analysis,

TABLE 1 Regional formal and concrete compliance with the national directive

Region	Year of formal compliance	Early/late regional compliance	Concrete compliance 2015 (%)	Concrete compliance 2018 (%)	% variation
Lazio	2015	Early	33.3	31.7	−1.6
Lombardia	2015	Early	253	27.8	2.5
Valle d'aosta	2015	Early	0	0	0
Piemonte	2015	Early	40	41	1
Liguria	2015	Early	22.2%	50	27.8
Emilia Romagna	2015	Early	40.9	58.8%	17.9
Umbria	2016	Early	42.9	80	37.1
Marche	2016	Early	33.3	30	−3.3
Veneto	2017	Late	31.6	32.3	0.7
Sardegna	2017	Late	25	33.3	8.3
Basilicata	2017	Late	33.3	33.3	0
Molise	2017	Late	0	0	0
Puglia	2017	Late	33.3	40.9	7.6
Abruzzo	2017	Late	25	28.6	3.6
Sicilia	2018	Late	20	18.5	−1.5
Toscana	2019	Late	28.6	50	21.4
Campania	2019	Late	16.3	15.4	−0.9
FVG	2019	Late	21.4	40	18.6
Trentino alto adige	No formal compliance	Late	100	100	0
Calabria	No formal compliance	Late	16	0	−16
Italy (mean)			**29.4**	**35.5**	**6.1**

Note: Year of formal compliance: Year in which region has formally adopted a regional directive for the first time; Early/late regional compliance: Regions clustered in early or late compliers, based on the threshold of year 2016; Concrete compliance 2015 (%): % of hospitals compliant with the two requirements in 2015 (on total hospitals performing breast cancer surgery); Concrete compliance 2018 (%): % of hospitals compliant with the two requirements in 2018 (on total hospitals performing breast cancer surgery); % variation: Difference between Concrete Compliance 2018 and Concrete Compliance 2015. Bold indictaes mean values at the national level.

Source: Italian Ministry of Health.

including in 2018, that is, 4 years after the national directive was issued. An average concrete compliance of around 30% of hospitals performing breast cancer surgery is a first key element in the detection of decoupling. This percentage should not necessarily be interpreted as disappointing. This is because policymaking and policy compliance are articulated processes and necessarily require time to be implemented (Benoit, 2013). Due to a lack of evidence on the typical patterns of compliance with national health-care directives from regions in Italy, it is generally difficult to assess these results by benchmarking them with previous evidence. Indeed, the introduction of the “LEA grid” is the first attempt in the country to keep systematic track of regional formal compliance in this sector. The implementation of breast units constitutes a novel opportunity in Italy to study this phenomenon.

As a matter of fact, there is no evidence that early formal compliers reach higher levels of effective compliance within 4 years from when the national directive was issued. In other terms, early compliers do not systematically reach higher levels of concrete compliance in 2018 if compared with late compliers. For example, a region such as Marche is an early formal complier but does not reach particularly high levels of concrete compliance in 2018. On the other hand, Toscana is a late complier but is among the most effective concretely compliant regions in 2018. This testifies the high barriers regions face in reconverting health-care settings and in re-designing networks of assistance, even though a few years have passed since their declared intention to do so. Nevertheless, we detect a significant difference in the relative increase (or decrease) of effective compliance between early and late formal compliers. This could suggest that, although regions are anchored to their initial contextual environment (which may provide higher or lower barriers to the implementation of change), formal compliance can indeed "push" effective compliance. Early formally compliant regions enhance a larger and significant overall improvement. In other terms, although regions may face strong barriers to change because of their initial contextual condition (causing, in turn, decoupling), formal compliance seems to muffle decoupling in the longer run.

CONCLUSIONS

This study provides multiple key messages. In the first place it explores the widely debated decoupling phenomenon at the regional level which, at the best of the authors' knowledge, is a new contribution in the health-care sector, given the strictly organizational perspective previous studies have adopted.

Second, it suggests that although high contextual barriers may impede a swift adherence of concrete adaptation to formal regional statements and intentions to change, the latter play a significant role in activating the *process* of concrete change at the regional level.

This information provides support to policymakers and managers both at the central and regional levels. Professionals at the central level should be aware that formal compliance to national directives frequently translates into decoupling. This means that a relatively low recognition of mere formal adaptations may be desirable, insofar as it is accompanied by little concrete change. Nevertheless, formal compliance is still highly relevant since it "stimulates" the process of change. Therefore, rather than emphasizing mere formal or concrete compliance by regions, their assessment strategies may indeed focus on improvement trends after formal compliance. In this vein, regions with lower concrete compliance may have, however, improved more than others if their starting point was particularly challenging. If confirmed by future studies, these trends may also support a greater awareness of the realistic trends of change in federal or regional health-care systems.

At the regional level, professionals should monitor their "path of compliance" and benchmark the speed with which they change with that of other regions. Again, rather than comparing percentage scores of compliance, the trend of improvement may represent a more significant dimension to assess.

It is worth mentioning a few limits of this study. In the first place only two of the requirements of EUSOMA were taken into account. Although it is possible that results may have varied slightly by taking more requirements into account, it is unlikely that overall results would have changed considerably. This is because the other requirements are possibly easier to implement and not all of them are mandatory in the context in which this study was carried out. Moreover, due to the nature of this study, only nonparametric statistics could be carried out. Future studies could triangulate these findings through alternative methods. Finally, the study does not explore the set of potentially relevant contextual factors that may enable or hinder the process of formal compliance. These may be of various types, including the size of the region, geographical location, social and political issues. Future studies are urged to cover this gap so to provide a structured understanding of the dynamics that characterize processes of regional/federal compliance. This study question has been addressed in other contexts (e.g., Kern et al., 2007) but, to the best of the authors' knowledge, has been highly overlooked in the health-care sector. A clear understanding of the main barriers to change could support the design of "fair" evaluation approaches that are able to interpret regions' improvements, isolating them from exogenous dimensions which cannot be controlled by managers.

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CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

ETHICS STATEMENT

The manuscript does not contain sensitive data or experiments using animals. Therefore, no specific ethical approval was necessary by the University or other Authorities.

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ORIGINAL ARTICLE

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When a school is more than just a school: Improving school-based health in the wake of COVID-19

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Abstract

The ongoing COVID-19 pandemic has posed tremendous challenges for economies and individuals around the world. At the same time, it has also laid bare the blatant and growing inequities that many individuals, particularly children, are confronted with on a daily basis. With communities in lockdowns and schools going virtual in many parts of the United States, the important role that schools and school-based services play in the lives of many children have gained new attention. Nonetheless, only 3% of American schools have school-based health centers on campus, and they remain relegated to the fringes of both health care and education. One key limitation has been the lack of appropriately trained health-care professionals. Over the past 2 years, we have interviewed dozens of individuals about their experiences in school-based health centers. Based on this study, we explore what it means for a health-care professional to work in school-based health care and how it differs from more traditional health-care settings. Our analysis particularly focuses on training and education, work environments, and their unique demands that come from being embedded within the educational setting. We conclude by addressing the important role that governmental policies could play in augmenting this crucial workforce.

Highlights

- School-based services can play an important role in providing more equitable health-care access to students.

[Correction added on 21 March 2022, after first online publication: The third word in the Title “schools” has been updated to “school”]

- Only 3% of American schools have school-based health centers on campus.
- A key limitation in expanding school-based care has been the lack of appropriately trained health-care professionals.
- Our analysis explores the training and education, work environments, and their unique demands that come from being embedded within the educational setting.

KEYWORDS
COVID-19, medical education, medical providers, school-based health, school-based health centers,

INTRODUCTION

The provision of education remains the core function of America's schools. Yet across the nation's school districts there has been a growing realization that schools offer an excellent opportunity to address many of the inherent inequities present in the United States. One intervention that has been shown to hold great promise is the provision of health-care services (Anderson et al., 2020; Keeton et al., 2012; Soleimanpour, 2020). Yet while many schools have a school nurse, these medical providers are often severely limited legally in the services they can provide. As a result, in some places, more comprehensive service providers have entered school grounds: school-based health centers (SBHCs). While these SBHCs have been around since the 1960s (Lear et al., 1991) they have seen tremendous growth over the last decade or so (Love et al., 2019). Indeed, they "have become an important method of health delivery for youth" (AAP Council on School Health, 2012). Because they are subject to local agreements, there is great diversity in how SBHCs functions, how they are staffed, and how they are funded. As a result, SBHCs are often highly unique and services can include preventative care such as well-child visits and screenings as well as immediate medical, dental, and mental health care. Often SBHCs also facilitate referral to specialty care.

Yet as alluded to above, the idea of opening school doors to health services providers is nothing new. Even before the turn of the 20th century and the high point of the Progressive movement, at least in certain locations, physicians were tasked with examining students for infectious diseases (Dunfee, 2020; Haeder, 2021b; Lear, 1996; Reynolds et al., 1999), dentists were checking on children's oral health, and school psychologists were supporting students' mental health (Flaherty & Osher, 2003; Ryan et al., 1996; Tyack, 1992). Driven by social reformers, attention was paid to what we today refer to as social determinants of health including access to safe and appropriate housing and food (Tyack, 1992). In places like New York, relatively comprehensive school health programs emerged (Lear et al., 1991). However, because of their limited reach, staffing demands remained small. Moreover, under pressure from conservatives and the private health system corporations, the focus over time-shifted increasingly towards education, not direct service delivery, and services were taken out of schools (Lear, 1996, 2011).

By the 1960s and 1970s, the concept of school-based health reemerged to increase access to primary care services as well as to rein in growing rates of teenage pregnancies (Brown & Bolen, 2008; Kisker & Brown, 1996; Love et al., 2019). Despite support from a number of foundations (Federico et al., 2011; Keeton et al., 2012), growth remained slow. By the late 1980s, only 120 centers had opened (Keeton et al., 2012). Conservative and religious opposition as well as concerns about infringement on parental autonomy remained a major impediment (Lear, 1996, 2003). Yet in light of growing need as well as increasing research indicating the benefits of SBHCs, more and more schools began to welcome back health services once more. Crucially, the Affordable Care Act also provide much needed subsidies (Price, 2017). By 2017, more than 6.3 million students in almost 11,000 schools received services from more than 2500 SBHCs nationwide (Love et al., 2019).

Evidence has emerged that SBHCs may be beneficial to students in diverse ways. A number of studies have shown that SBHCs lead to increased health services access and utilization (Guo et al., 2008; Santor et al., 2006; Silberberg & Cantor, 2008; Soleimanpour et al., 2010). There is also evidence that SBHCs are particularly crucial in improving access by lowering barriers for those children who would otherwise not be able to access health services (Gance-Cleveland & Yousey, 2005; Gold et al., 2011; Kaplan et al., 1999; Parasuraman & Shi, 2015; Wade et al., 2008). This particularly holds for children in rural areas (Arenson et al., 2019; Crespo & Shaler, 2000; Rickert et al., 1997; Wade et al., 2008), from racial and ethnic minorities (Keeton et al., 2012), and other marginalized groups (Zhang et al., 2018; Zhang et al., 2020). There is also evidence that the benefits of SBHCs are multi-pronged and range from increases in health knowledge and education (Keeton et al., 2012; Kisker & Brown, 1996) to improved immunization rates (Adams et al., 2020; Federico et al., 2010; Keeton et al., 2012) (Allison et al., 2007; Federico et al., 2010). Health benefits may also carry over into academics, as some studies point to improved academic outcomes (Brown & Bolen, 2008; Knopf et al., 2016; Sisselman et al., 2012). Finally, not only is there evidence that care provided by SBHCs achieves high levels of satisfaction from students (Charette et al., 2019; O'Leary et al., 2014; Silberberg & Cantor, 2008; Zarate et al., 2020), but that it is also highly cost-effective (Fisher et al., 2019) and offers large social benefits (Ran et al., 2016). Given this body of knowledge, SBHCs may be particularly helpful during the ongoing pandemic as well as during the long-term recovery (Anderson et al., 2020; Hoffman & Miller, 2020; Naff et al., 2020).

Yet even before the COVID-19 pandemic swept America, inequalities with regard to race, ethnicity, health, and income provided uneven playing fields in America's classrooms (Knopf et al., 2016). The interdependencies between education and health are well-known (Keeton et al., 2012; Soleimanpour, 2020). Yet as calls to turn schools into social service centers have grown louder to battle inequities and access limitations (Morone et al., 2001), another challenge has only gained limited attention: staffing school-based health services with appropriately and adequately trained providers. And despite what is known about SBHCs and student health, very few studies have focused on medical providers servicing SBHCs as well as potential challenges in training, recruiting, and retaining these providers. The few studies that have focused on the issue indicate that lack of appropriate provider training (Comfort et al., 2020; Kalet et al., 2007) and challenges in collaboration between schools, school nurses, and SBHCs may be particular road blocks (Hacker & Wessel, 1998; Richardson, 2007).

We extend the work on school health by examining what it means for a health-care professional to work in school-based health care and how it differs from more traditional settings. We do so based on interviews from a multi-year study of SBHCs in West Virginia, a rural state in Appalachia with one of the lowest median incomes in the U.S. (Shrider et al., 2021), and offer new insights on what is necessary to train, recruit, and retain for America's schools of the 21st century. West Virginia also is a state that has struggled with the opioid epidemic as few other states have (Haeder, 2018). Results from the present investigation can inform approaches to training and supporting staff in SBHCs, especially those in rural or under-resourced communities.

DATA AND METHODS

The reported findings come from a qualitative study of SBHC providers and school personnel participant experiences. Data were collected through 24 interviews with SBHC providers and administrators in West Virginia from April 2019 to April 2021. Interviewees were recruited to participate through professional networks and referrals. Participants included 10 medical providers, five mental health providers, one school health educator, and one administrator. Semi-structured interviews occurred in local restaurants, SBHC facilities, and via Microsoft Teams or Zoom. They covered a range of topics including: the initiation and scope of SBHC services, utilization of services, SBHC staffing, funding, connectedness of SBHCs to school and community, short- and long-term sustainability, and impacts of COVID-19. Team members facilitated interviews, and time was reserved during weekly check-in meetings to debrief on interview responses and emerging themes, which were referred to during the analysis phase.

All recordings were uploaded to Rev.com to be transcribed and later coded in Dedoose (SocioCultural Research Consultants LLC, 2020). An a priori coding scheme was developed which aligned with interview protocols before facilitating interviews. Coding focused on semantic/explicit content instead of latent content/assumptions (Braun & Clarke, 2006). Two coders coded the same three transcripts and reviewed together to ensure similar codes were used and discrepancies were discussed. Coders then coded individual transcripts. Once all transcripts were coded, an inter-rater reliability test was used. Coders achieved a .85 pooled kappa statistic, indicating “excellent” agreement (Fleiss, 1971). A select number of codes of interest were identified for analysis, including the root code “cooperation” and child codes “SBHC personality,” “SBHC training,” and “relationships with staff” and “historical challenges” and “current challenges” (Braun & Clarke, 2006).

We used a thematic analysis framework (Braun & Clarke, 2012) to interpret coded transcripts (see Table 1 for codes). Thematic analysis is an appropriate framework for our analysis because of the nature of the data and its ability to systematically identify patterns and themes. We followed the recommended approach that moved from familiarization with the data to generating initial codes to searching for themes to reviewing themes to defining and naming themes and finally to producing the analysis (Braun & Clarke, 2012). Analyses here focused on identifying key themes that emerged across interviews and on questions focused on the SBHC workforce. Prototypic quotes were derived from participant interviews and are used to illustrate the identified themes (Table 2).

Consent to record was obtained, and recordings were stored in a secure location. Interviews lasted approximately 1 h. Participants received $25 gift cards for their

TABLE 1 Definition of codes used for analysis

Key codes	Definition
SBHC personality	Personal characteristics associated with success when working at an SBHC
SBHC training	Whether there is training for working at an SBHC
Historical challenges	Challenge the SBHC has confronted over its history, since the interviewee has been at the school, or that they are aware of (e.g., lack of parental permission; SBHC staff turnover)
Current challenges	Any challenge the SBHC is confronting now
Relationships with staff	Any discussion about the relationship between school staff and the SBHC

Abbreviation: SBHC, school-based health centers.

TABLE 2 Overview of themes with quotations from interviews

SBHC provider personal characteristics	
Characteristic 1: Being flexible	
I go get the kids myself. I back off if the teachers say it's not convenient. I adjust the schedule. It's a nightmare frankly. It's a nightmare when you've got four different schools and you're juggling this. Okay we're not… I don't take kids out of math and reading and science… Then the music teachers say, "Really? This kid loves music. Can't you find some other time to get them?"	Interviewee A Mental health provider
It's like I told one of my fellow workers who works in the community in a health center, I'm like, "Sometimes when you just see three kids on my schedule, that doesn't mean that we weren't busy. That just means one of those visits has probably turned into an emergency or a tragedy that has happened. And it has taken all of us to deal with that."	Interviewee B Medical provider
Sometimes I find that staff get very caught up in what it looks like and are unwilling to be flexible and change it because some kid might fall in PE. There might be a fight. Just tons of things can happen. School-based health centers, you have to have staff that are very flexible.	Interviewee C Administrator
[…] it's like, "You can have this closet, or you can have this very small space. It's all we have." Then it's up to us to figure out how to make it work. I've had staff in closets […] We have a behavioral health provider in a shower. It was like they […] I mean it wasn't a fully functioning shower, don't get me wrong, but the drain was there. We've had people in bathrooms.	Interviewee C Administrator
You have to be really organized and flexible. You need to understand where people are coming from, like how their relationship with school-based health and staff has been shaped. Also, it's never straightforward. You're not going to see a patient and have all the information that you need. You're going to have to call a parent or a guardian. You're talking about working with kids, right, so what they know about their health history is pretty limited. So, what normally may take just a sit-down visit of five minutes in urgent care, you have to investigate. You need to have a curious, investigative, and creative mind.	Interviewee D Medical provider
…just letting people know that we're here. And actually with [SBHC], we did the rapid COVID swabs and basically let parents know at the beginning of the school year and sent home a separate consent form just for a COVID 19 swab, if that was needed at school […] we had a big return on those which sending out a form like that was kind of like, 'do we want to do that'? But it was also like, this is an additional service that we have available for these students, and we just want the parents to know that would be available if needed.	Interviewee O, Medical provider
[…] if a kid needed a swab for COVID, we would also go ahead and swab their parents, even if they weren't ours. So as far as that, we have done more of community swabbing. If a kid has exposed grandma, aunt, so on. We have offered come on down and we'll swab you. So, I think in that aspect, or just offering the swab even if they aren't students here, we'll go out to the car and swab them.	Interviewee B, medical provider
Characteristic 2: Working well with children	
If I was working on OB, I would know everything I needed to know about OB, about unborn babies, about heart rates that, when is it healthy? When is it not healthy? And it's the same with adolescents. You've got to know their brains, […] And their hormone levels and that kind of thing, where they're at physiologically, that's going to affect their psychology and the way they behave.	Interviewee E Medical provider

TABLE 2 (Continued)

SBHC provider personal characteristics	
I think that we have a number of wonderful stories at every school-based health center with kids that we've been able to connect to resources, who write letters to say that they love our staff because of things we have done […] That feel like the school-based health center is a family. So, I know that there are a handful of lives that are better because of a school-based health center […] Because someone cared about them.	Interviewee C Administrator
Our kids are first. We try to make it better. We'll look at each year…how does this need to change? What do we need to do better? With the COVID, we're still figuring out how can we get these kids? What is our routine going to be? Because the routine has changed this year. The kids can't just freely stop in here between classes or anything anymore. They have to be with a piece of paper, they have to notify the office, and the office notifies us. So, it's kind of our routine has changed.	Interviewee B Medical provider
And this year, it's like I said, the doors have been locked and kids can't come without teacher permission and the teacher has to call and it's a big ordeal. I feel like kids could easily slip in last year and get whatever and it not be a big deal, but this year, it's like a big deal.	Interviewee N Mental health provider
Characteristic 3: Proactive communicating and building relationship	
They [SBHC staff] have to be outgoing. They have to be willing to go out and maybe have lunch one day with the students. They have to be willing to engage in school activities. You just can't sit back in the office and wait for them to come to you, because it doesn't work. Whereas when you're in an office setting, you have people scheduling appointments. You don't have to go out there and search for your clients. It's just the fact that I think school-based, you really need to be really outgoing and really able to socialize and be personable.	Interviewee H Medical provider
Another thing that I do when I try to teach my staff to do, walk the halls. I tell them, look, I know the bell rings at 3:30 or 3:00 or whatever, and the buses leave, but just go for a walk through the hallway. And amazingly teachers will say, “Oh, I'm so glad to see you. I had such a horrible day […] That creates some cooperation and it's an opportunity to say to the teacher, you are doing an awesome job. Thank you for your dedication.	Interviewee I Administrator
Having a good rapport with that receptionist is so vital. It makes the difference between, can I see five students in a day, or can I see 12 students in a day because they are going to work for you when they feel validated and feel like that you care about them as well. And that you have that cooperative think of flow with them as well. It's all about being personable and I'm not talking, being fake. I mean genuinely, authentically, I care about you as a fellow coworker. I care about the students. It has to be authentic, but when it's done authentically, it's amazing what you can do together.	Interviewee I Administrator
We have a case manager and two staff for behavioral health. And that really takes a load off of the guidance counselors. They can focus on getting kids in their classes and making sure they have their credits and all that. And they don't have to counsel kids with the things that kids get upset about. They can come right in here and talk to our behavioral health people.	Interviewee E Mental health provider
I spoke to one of the other elementary school principals yesterday. We do a lot of Zoom meetings now with principals and the whole staff now, just so we could answer questions. That was what he said. “It has surely been a help to have you all in our building and know that I'm guaranteed to get this kid	Interviewee L Medical provider

(Continues)

TABLE 2 (Continued)

SBHC provider personal characteristics	
COVID tested. If I send him out in the building, they may or may not have that. They may not have access to go further on down to Charleston or wherever to get that COVID test. At least I know that before they go home, if we suspect COVID, I'm going to be able to get some things done with this kid before they leave my building."	
Characteristic 4: Adapting to West Virginia's changing context	
It takes a person who's going to take the time to listen to the kids. You can't just be in and out. Just because they're coming down for a well-child or a sore throat, it might turn into I'm suicidal, or my mom is beating me at home. You can't just say, okay, sore throat, strep, see you later. That's all you need it. It takes more than that. You have to be here for the kids and not just the visits.	Interviewee B Medical provider
We would also handhold some of these kids through different things. Especially ones that were maybe in foster care or potentially neglected, we would try to maybe make that referral ourselves. Sometimes I even had a nurse that would go pick a prescription up for a child and bring it back to the school because the parent had transportation problems. Literacy issues calling parents and filling out forms for parents over the phone and then sending it home for the parent to sign.	Interviewee F Medical provider
Yeah, it's just been hard when we're used to seeing a kid on Tuesday and can have that potential to follow up with them Thursday, we know we won't see them for at least another week, so that's been a big change for us.	Interviewee O Medical provider
Basically, they didn't know what to do with school health because when we shut down in March in West Virginia, schools never went back in session and I don't know how else to say it, but they didn't want to pay us to just sit there and do nothing, obviously. I mean we didn't have access to kids. And part of the struggle with school-based health is that these are the kinds of kids who don't have someone who will bring them to appointments…So much of what they come to therapy for is because of the problems at home…. So, it's very rare for parents to bring their kids. So, if there's not school, they're probably not going to bring their kids.	Interviewee M Mental health provider
We really shifted to telehealth for everybody just to what we knew at the time and that's what seemed like most people were doing. And I have to laugh at us ourselves because we shut down for two months that way, we just did all telehealth and might go out in the parking lot and see some people and do that sort of stuff.	Interviewee P Administrator
Sometimes I feel like when I call, I end up doing more therapy with the parent than I do the kid on certain days, just because of the level of frustration that they're feeling. This year has definitely been the COVID challenge and the virtual schooling.	Interviewee N Mental health provider
This [working in an SBHC] is just different. You have kids who don't want you to share anything with the parent. You have kids who haven't seen their parents in you don't know how long. They're sleeping on a friend's couch. It's just sometimes really hard because it's not how [providers are] trained in the textbook, particularly if they're coming right out of school. They just really seem to struggle and then these kids have really heartbreaking stories. It's just hard to leave that at the office.	Interviewee C Administrator
I think it takes somebody not only with compassion, but also with the ability to disconnect, because you can't take your work home with you. I can't build a mansion and take all these kids home, but I'd like to. So, I think you have to	Interviewee G Mental health provider

TABLE 2 (Continued)

SBHC provider personal characteristics	
have the ability to set boundaries and be able to go home at night and not worry yourself to death about this kid going home.	
Training to support SBHC staff	
Challenge 1: Lack of SBHC-focused components in provider education	
You know what, I can only speak from personal experience, but I never had per se formal training to work in a school-based health center […] and if you would have asked me that even a year into it, I would say, “No.” Because I just really didn't understand fully, it took time to really understand the scope of it. But knowing what I know now, yes. I think it would be super beneficial to have structured trainings because it's different. The fact of the matter is, it's different to provide therapy in a main clinic where people actually have to come in for their appointment versus school-based health centers. It's just a whole different ball game in a lot of ways.	Interviewee J Mental health provider
So, when you first come to school-based, you're not really trained in that, I don't know anybody who gets training, whether they be a nurse practitioner, MDs, PAs, in what to do when you come to a school-based health center. So, if there's not somebody in your facility that already knows the ropes of what to do at a school-based health center, then you're kind of out there flying blind, or you have your MA who may have some experience if you are following another provider that was there. If you're a brand-new health center, you have nobody who has any experience.	Interviewee L Medical provider
Staff is always a challenge. And it is particularly a challenge because I'm all about hiring somebody with both the credentials and either the ability they either have, or they can develop the skills that are necessary for the environment of school-based behavioral health. I have met clinicians that are good clinicians, but I wouldn't send them into a school, or they don't fit with the overall mission statement or program of the way that the philosophy of how we do things.	Interviewee I Administrator
[…] here's the thing, every school is a little different in how they get kids and how they want to structure that. […] I definitely think there needs to be specific training to that. Because like I said, having done therapy on both ends of the spectrum, it's definitely different when you don't have as much parent involvement. That's kind of the whole point is that these kids are often kids who don't have parent involvement in any aspect of their life. So that's a totally different type of therapy than the parent who's going to bring their kid to therapy every week.	Interviewee M Mental health provider
And when we talked about telehealth and we have done some telehealth, don't get me wrong, but especially with kids and therapy, there's a huge confidentiality problem based with doing telehealth. Because you have no idea who might be listening on the other end of the camera, just outside of the camera and you have no idea what that kid is facing.	Interviewee M Mental health provider
It's internet issues or just not having access. Because when our care coordinators were scheduling those visits, they would give them the option of meeting over Zoom, kind of a little more face to face or by phone. And they, for me, all met by phone. And honestly, and I think that's maybe a specific to West Virginia.	Interviewee O Medical provider
I will say from the behavioral health side, if I could do a Zoom, I would be quite willing to try more with tele-health. I made a few efforts to do some tele-health with the phone for kids and felt that it was not effective. And I just	Interviewee A Mental health provider

(Continues)

TABLE 2 (Continued)

SBHC provider personal characteristics	
stopped even trying. Even in a case where a parent had said, "Please call my kid. My kid's having trouble. They want to talk to you." Then I called but I wouldn't get called back and so on. And so, it didn't seem to be the way.	
…we had some therapists who were not experienced with virtual and not real comfortable with that. So, we had to play some catch-up and provide a lot of supervision to get people used to that, medical providers as well, not used to doing that.	Interviewee I Mental health provider
Challenge 2: Lack of awareness of SBHCs among providers	
It's not all that common when somebody would say, "Hey, I want to work in school-based health centers." Sometimes it happens but it's not very often.	Interviewee K Administrator
School-based is totally different. The residents have all said that. It's very interesting because they don't get this experience. They don't know much about school-based. I enjoy the fact that we get to show them what it can be about. Several of them who've come through, didn't know what to expect until they got here, and they realized what it was. In leaving, a lot of them have said, "I really enjoyed that." "I liked coming here. The kids were so much different here in this setting than they are in my office because they don't have their parents. They're freer. They talk."	Interviewee L Medical provider
Challenge 3: Need for continued and local-context specific training	
In social work we do a lot of trainings on ethical standards but sometimes the lines can be a little blurry in regard to school-based health centers. Maybe even a training on that, that spells it out. Yes, you're allowed to accept referrals from school counselors, for example. Is it okay to check in with the child's teacher and say, "Hey, has so and so gotten into a fight at recess again?" Or, "Have you noticed so and so […]" Just stuff like that.	Interviewee J Mental health provider
So, I think in some ways the providers were always willing to talk to people because they had things they needed to bounce off and figure out how that works or what do you do, how do you get those consent [forms] back? What are your methods to getting as many as you can? We've done everything from incentives to yeah, gifts cards, to the school nurses one year, I think she bought something for the class that brought back the most. There's lots of different things like that. How do you get your well-childs in during the day? We pick a number that we want to hit every day and try to plug those into the schedule so that we go through our list in advance, find them put them on the schedule and go from there. So, there's just that, how the basics work. So, the providers welcome those ideas and brainstorming.	Interviewee L Medical provider
[T]here's no primer on how to do this … just coming in, you just don't know your resources. Even having this resource packet for school-based health staff to say, "Hey, you work in school-based health in this area. Here are the resources that you have." I was also starting in a town where there weren't very many school-based health staff working, so I think that normally where I would have gotten a little bit more mentorship for that stuff, that wasn't necessarily available. So, I look forward to as we kind of move through this, and I'm not going to say move out of it because I don't know when that's going to happen, but as we move through this that I'm able to identify those things and kind of build my own resource packet.	Interviewee D Medical provider
So, I definitely think they ought to have some training working with kids, and maybe some education on the school system too. How that all works, because I've found out that every school system's different, in our state each county has something different going on.	Interviewee G Mental health provider

participation. The study was approved by the Pennsylvania State University's Institutional Review Board.

RESULTS

SBHCs are unique work environments that present staff with challenges and opportunities distinct from those experienced by providers working in more traditional health care settings. As a result of being embedded within the educational environment, staff may need to work with limited clinical space and inconsistent daily routines. However, SBHCs also allow staff easy access to students in need of medical and mental health services, as well as the opportunity to build supportive relationships and holistically assess student's needs and well-being. The SBHC staff in this study discussed the characteristics and skills, like flexibility and proactive communication skills, that are needed to work effectively in the SBHC setting. They also discussed how traditional provider training may not sufficiently prepare staff for working in the school setting and offered suggestions to support SBHC staff, like formal rotations in SBHCs or local trainings on available community resources.

SBHC provider personal characteristics

The SBHC providers and administrators described the ideal characteristics of SBHC staff, and the two most common qualities highlighted were flexibility and an ability to work well with children. Moreover, staff also discussed the need for SBHC staff to have the ability to work well with students living in stressful and potentially hostile environments, maintain their own mental health in a challenging work environment, and to be proactive communicators and relationship builders.

Characteristic 1: Being flexible

Many staff discussed the need to be flexible when working at the intersection between two very complex systems—health care and public education. Interviewees discussed several aspects of working in a SBHC that necessitate provider flexibility: unpredictable daily schedules, limited space and resources, and limited access to or responsiveness from parents. One of the most frequently mentioned issues was that SBHC staff typically have unpredictable clinic and school schedules. While many SBHC services are equivalent to the services provided in health centers, such as providing routine well-child visits and vaccinations, SBHC staff also respond to immediate teacher and student needs. As a result, SBHC staff schedules are typically unpredictable throughout the day and may vary substantially from day to day or week to week. For example, one SBHC mental health provider discussed working with teachers to decide when to pull students from class for an appointment.

> *I go get the kids myself. I back off if the teachers say it's not convenient. I adjust the schedule. It's a nightmare frankly. It's a nightmare when you've got four different schools and you're juggling this. Okay we're not… I don't take kids out of math and reading and science… Then the music teachers say, "Really? This kid loves music. Can't you find some other time to get them?"*
>
> *– Interviewee A, mental health provider*

SBHC providers also adjust their schedules to respond to student needs or school crises that may arise throughout the day. One medical provider described their experience working within a school the following way:

> *It's like I told one of my fellow workers who works in the community in a health center, I'm like, "Sometimes when you just see three kids on my schedule, that doesn't mean that we weren't busy. That just means one of those visits has probably turned into an emergency or a tragedy that has happened. And it has taken all of us to deal with that.*
>
> *– Interviewee B, medical provider*

An SBHC administrator also agreed that staff need to maintain flexible schedules to respond to student needs and unforeseen events that may arise.

> *Sometimes I find that staff get very caught up in what it looks like and are unwilling to be flexible and change it because some kid might fall in PE. There might be a fight. Just tons of things can happen. School-based health centers, you have to have staff that are very flexible.*
>
> *– Interviewee C, administrator*

In addition to remaining flexible to meet the needs of students and teachers, staff also expressed the need to be flexible regarding the physical space in which they provide care. SBHCs are located either inside or in close proximity the school buildings they serve. However, as most of West Virginia's schools were not designed to include space for a health center, they usually adapt the space available to provide services. Staff described working in trailers outside the building, which can make access difficult for younger students, and working in small rooms, often with limited privacy, within the building in response to limited school space. One SBHC administrator described their staff's experience the following way:

> *[…] it's like, "You can have this closet, or you can have this very small space. It's all we have." Then it's up to us to figure out how to make it work. I've had staff in closets […] We have a behavioral health provider in a shower. It was like they […] I mean it wasn't a fully functioning shower, don't get me wrong, but the drain was there. We've had people in bathrooms.*
>
> *– Interviewee C, administrator*

Staff also discussed being flexible with treatment approaches when there is limited access to students' parents, or when students' parents are unable to engage with care. Students can use SBHC services without their parent being at the appointment, though all students need a signed parental consent form to receive services. SBHC staff may thus have limited opportunities to interact with the student's family. Additionally, SBHC staff may face barriers to parental engagement related to West Virginia's changing context. Parents may be working multiple jobs, lack transportation, have inconsistent phone or Internet service, or may struggle with a substance use disorder. Mental health providers discussed how their training typically assumes a level of access to parents or other family members, which may not be feasible in a school setting where parents do not drop off and pick up their child directly from the provider. One medical provider described adapting her practice to work without guaranteed access to parents or family members.

> *You have to be really organized and flexible. You need to understand where people are coming from, like how their relationship with school-based health and staff has been shaped. Also, it's never straightforward. You're not going to see a patient and have all the information that you need. You're going to have to call a parent or a guardian. You're talking about working with kids, right, so what they know about their health history is pretty limited. So, what normally may take just a sit-down visit of five minutes in urgent care, you have to investigate. You need to have a curious, investigative, and creative mind*.
>
> *– Interviewee D, medical provider*

Limited access to parents in the school setting can present additional challenges to SBHC medical and mental health providers. Staff discussed low parental awareness of SBHC services, and how difficult it can be to achieve parental involvement or to get parents to sign the consent forms needed to treat their children. One medical provider (Interviewee L) mentioned that if SBHCs do not develop strong relationships and integrate themselves within the school and community, buy-in and use of the clinic services can be limited. A mental health provider (Interviewee M) also talked about how many parents and school personnel are unaware that the SBHC provider is not the same as the school nurse or counselor. Parents who are unaware that the SBHC provider is credentialed and can provide the same level of care as a provider in a traditional doctor's office have been reported to take students out of care in the SBHC center and seek treatment elsewhere.

While SBHCs worked to educate families and communities about who they are and what services they provide before the COVID-19 pandemic, during the pandemic, families particularly used SBHCs for testing. Some SBHCs even tested students who did not go to the school and community members who did not have an affiliation with the school. For example, one SBHC staffer told us the following:

> *…just letting people know that we're here. And actually with [SBHC], we did the rapid COVID swabs and basically let parents know at the beginning of the school year and sent home a separate consent form just for a COVID 19 swab, if that was needed at school […] we had a big return on those which sending out a form like that was kind of like, 'do we want to do that'? But it was also like, this is an additional service that we have available for these students, and we just want the parents to know that would be available if needed*.
>
> *-Interviewee O, medical provider*

Another SBHC went even further

> *[…] if a kid needed a swab for COVID, we would also go ahead and swab their parents, even if they weren't ours. So as far as that, we have done more of community swabbing. If a kid has exposed grandma, aunt, so on. We have offered come on down and we'll swab you. So, I think in that aspect, or just offering the swab even if they aren't students here, we'll go out to the car and swab them*.
>
> *-Interviewee B, medical provider*

Characteristic 2: Working well with children

The staff in this study also felt that SBHC staff should work well with children, not only by having a working knowledge of how to effectively treat children at different stages of development, but also by enjoying the dynamic interaction and cultivation of relationships with them. Several staff discussed the importance of being familiar with child development to offer appropriate and effective care. One medical provider discussed the need for staff to be attuned to the differences between child and adult patients, adding that SBHC staff can teach children how to access and use the medical system, including when and how to utilize preventive services. Another medical provider compared the need for SBHC staff to be aware of child development to the expertise in prenatal health seen in obstetrics and gynecology providers.

> *If I was working on OB, I would know everything I needed to know about OB, about unborn babies, about heart rates that, when is it healthy? When is it not healthy? And it's the same with adolescents. You've got to know their brains, […] And their hormone levels and that kind of thing, where they're at physiologically, that's going to affect their psychology and the way they behave.*
>
> *– Interviewee E, medical provider*

Staff also discussed enjoying their work with children. Two staff members described the importance of establishing a family-like bond with their students, referencing the need to care about (Interviewee C) and “have a heart” (Interviewee M) for children. One provider mentioned having passion for the children in the age group they work with, while another mentioned the need to have compassion when working with adolescents. One SBHC administrator discussed their experience developing relationships with students over the years.

> *I think that we have a number of wonderful stories at every school-based health center with kids that we've been able to connect to resources, who write letters to say that they love our staff because of things we have done […] That feel like the school-based health center is a family. So, I know that there are a handful of lives that are better because of a school-based health center […] Because someone cared about them.*
>
> *– Interviewee C, administrator*

However, school and SBHC protocols put in place to reduce the spread of the COVID-19 virus strained connections with students. As one staffer told us:

> *Our kids are first. We try to make it better. We'll look at each year…how does this need to change? What do we need to do better? With the COVID, we're still figuring out how can we get these kids? What is our routine going to be? Because the routine has changed this year. The kids can't just freely stop in here between classes or anything anymore. They have to be with a piece of paper, they have to notify the office, and the office notifies us. So, it's kind of our routine has changed.*
>
> *-Interviewee B, medical provider*

The experiences were similar at yet another SBHC:

> *And this year, it's like I said, the doors have been locked and kids can't come without teacher permission and the teacher has to call and it's a big ordeal. I feel like kids could easily slip in last year and get whatever and it not be a big deal, but this year, it's like a big deal.*
>
> *-Interviewee N, mental health provider*

Characteristic 3: Proactive communicating and building relationship

The SBHC staff in this study discussed the need to not only need to build rapport with the students in the treatment room, but also develop relationships with the educational staff within the school, such as the principals, office staff, school nurses, school counselors, and school resource officers. Of course, SBHC staff also need to communicate effectively with parents and families. Proactive communication and building relationships with students, school staff, and family members ensures that they are aware of the services offered in the SBHC and are utilizing or referring students for care. As one medical provider put it, SBHC staff cannot just sit in their offices and wait for the students to come to them, but instead be willing to meet the students where they are.

> *They [SBHC staff] have to be outgoing. They have to be willing to go out and maybe have lunch one day with the students. They have to be willing to engage in school activities. You just can't sit back in the office and wait for them to come to you, because it doesn't work. Whereas when you're in an office setting, you have people scheduling appointments. You don't have to go out there and search for your clients. It's just the fact that I think school-based, you really need to be really outgoing and really able to socialize and be personable.*
>
> *– Interviewee H, medical provider*

Similar to building relationships with students by interacting with them outside of the clinic, an administrators shared advice on how to build relationships with teachers.

> *Another thing that I do when I try to teach my staff to do, walk the halls. I tell them, look, I know the bell rings at 3:30 or 3:00 or whatever, and the buses leave, but just go for a walk through the hallway. And amazingly teachers will say, "Oh, I'm so glad to see you. I had such a horrible day […] That creates some cooperation and it's an opportunity to say to the teacher, you are doing an awesome job. Thank you for your dedication.*
>
> *– Interviewee I, administrator*

School personnel can assist SBHCs in raising awareness and disseminating messaging and assist in reminding students about their appointments. The same administrator described how building strong relationships with school staff can improve SBHC staff's ability to provide care to more students.

> *Having a good rapport with that receptionist is so vital. It makes the difference between, can I see five students in a day, or can I see 12 students in a day because they are going to work for you when they feel validated and feel like that you care about them as well. And that you have that cooperative think of flow with them as well. It's all about being personable and I'm not talking, being fake. I mean genuinely, authentically, I care about you as a fellow coworker. I care about the students. It has to be authentic, but when it's done authentically, it's amazing what you can do together*.
>
> *– Interviewee I, administrator*

Strong relationships with parents and school staff not only enable the SBHC to better serve the students, but they can also be beneficial for the school. Several staff shared how SBHC and school personnel stay in touch to understand the situations among specific students. One mental health provider shared how SBHC behavioral staff can help alleviate burdens on school guidance counselors, freeing up more time for the counselor to focus on school-related issues.

> *We have a case manager and two staff for behavioral health. And that really takes a load off of the guidance counselors. They can focus on getting kids in their classes and making sure they have their credits and all that. And they don't have to counsel kids with the things that kids get upset about. They can come right in here and talk to our behavioral health people*.
>
> *– Interviewee E, mental health provider*

These relationships have also proven helpful during the COVID-19 pandemic. When students were experiencing COVID-like symptoms, schools used either isolation rooms or sent students directly to their SBHC for testing and monitoring. In addition to testing, SBHCs have also been administrating vaccines.

> *I spoke to one of the other elementary school principals yesterday. We do a lot of Zoom meetings now with principals and the whole staff now, just so we could answer questions. That was what he said. "It has surely been a help to have you all in our building and know that I'm guaranteed to get this kid COVID tested. If I send him out in the building, they may or may not have that. They may not have access to go further on down to Charleston or wherever to get that COVID test. At least I know that before they go home, if we suspect COVID, I'm going to be able to get some things done with this kid before they leave my building."*
>
> *-Interviewee L, medical provider*

One provider shared how their school used SBHC providers as "experts on the ground" to help determine how to keep everyone safe when returning to in-person classes.

> *Then we also worked with our schools quite a bit to figure out how to return in person. They used us a lot as their experts on the ground to help them develop their plan for return of students to the building. We worked with our school nurses. We worked on immunizations, the kids that she needed to have immunized before they could return due to immunization requirements. We*

> *even did days out in the parking lot, where we would just be out there to do those vaccine drive-throughs.*
>
> *-Interviewee L, medical provider*

Characteristic 4: Adapting to West Virginia's changing context

Finally, we note the importance of local circumstances. For example, the West Virginia context has been changing due to factors like increases in unemployment, poverty, the opioid epidemic (Sylvester et al., 2021), and regional flooding (Merino et al., 2019). Staff discussed how they felt there has been an increase in the number of students living in adverse situations and facing challenges within their families such as homelessness, the foster-care system, and substance use disorder. SBHC staff talked about the challenges associated with providing compassionate, competent care to children living in challenging situations, and highlighted the growing need for and acceptance of mental health services. The current pandemic has only intensified and exacerbated these developments. When discussing how more students were coming to the SBHC with anxiety and mental health concerns, a medical provided noted, "…some of these kids didn't have much social interaction to begin with just because of their circumstances. But it's even worse now" (Interviewee M). Another medical provider, when asked about changing health care needs, shared, "We see a lot of mental health decline. I think that's due to the pandemic. And I have seen some students with some financial concerns with food and with family finances. But I think mental health has really taken a toll since the pandemic started" (Interviewee Q). As these challenges apply to the qualities of SBHC staff, a few staff explicitly mentioned the need for SBHC staff to provide additional assistance and services for students challenged by a myriad physical and emotional circumstances that the provider may not be able to mitigate, and to develop the ability to maintain mental health while working in a challenging environment.

As the needs of students has grown, one medical provider talked about the need for SBHC staff to go above and beyond the provider role by developing relationships to form a more holistic assessment of student needs.

> *It takes a person who's going to take the time to listen to the kids. You can't just be in and out. Just because they're coming down for a well-child or a sore throat, it might turn into I'm suicidal, or my mom is beating me at home. You can't just say, okay, sore throat, strep, see you later. That's all you need it. It takes more than that. You have to be here for the kids and not just the visits.*
>
> *– Interviewee B, medical provider*

Another medical provider discussed helping to remove barriers students may face in accessing care or treatment.

> *We would also handhold some of these kids through different things. Especially ones that were maybe in foster care or potentially neglected, we would try to maybe make that referral ourselves. Sometimes I even had a nurse that would go pick a prescription up for a child and bring it back to the school because the parent had transportation problems. Literacy issues calling parents and filling out forms for parents over the phone and then sending it home for the parent to sign.*
>
> *– Interviewee F, medical provider*

However, the pandemic made it difficult for SBHCs providers to reach as many students as they were previously. Many discussed being open, but work was slower as individuals could not sit in waiting rooms or show up without appointments.

> *Yeah, it's just been hard when we're used to seeing a kid on Tuesday and can have that potential to follow up with them Thursday, we know we won't see them for at least another week, so that's been a big change for us.*
>
> *-Interviewee O, medical provider*

The situation was particularly challenging for mental health providers:

> *Basically, they didn't know what to do with school health because when we shut down in March in West Virginia, schools never went back in session and I don't know how else to say it, but they didn't want to pay us to just sit there and do nothing, obviously. I mean we didn't have access to kids. And part of the struggle with school-based health is that these are the kinds of kids who don't have someone who will bring them to appointments…So much of what they come to therapy for is because of the problems at home…. So, it's very rare for parents to bring their kids. So, if there's not school, they're probably not going to bring their kids.*
>
> *-Interviewee M, mental health provider*

Some SBHCs had the resources to mediate the situation by taking advantage of telemedicine opportunities:

> *We really shifted to telehealth for everybody just to what we knew at the time and that's what seemed like most people were doing. And I have to laugh at us ourselves because we shut down for two months that way, we just did all telehealth and might go out in the parking lot and see some people and do that sort of stuff.*
>
> *-Interviewee P, administrator*

Of course, much of these efforts were limited by the challenging IT infrastructure in large parts of the state. As a result, many SBHCs resorted to phone calls to check in on their students and families. As one mental health provider put it:

> *Sometimes I feel like when I call, I end up doing more therapy with the parent than I do the kid on certain days, just because of the level of frustration that they're feeling. This year has definitely been the COVID challenge and the virtual schooling.*
>
> *-Interviewee N, mental health provider*

Beyond providing additional assistance and services to meet student's needs, a few staff also discussed the importance of maintaining mental health in a challenging work environment. One SBHC administrator discussed the challenges new SBHC staff face when beginning to work in school-based centers, highlighting how working with the West Virginia student population can have an emotional toll.

> *This [working in an SBHC] is just different. You have kids who don't want you to share anything with the parent. You have kids who haven't seen their parents in you don't know how long. They're sleeping on a friend's couch. It's just sometimes really hard because it's not how [providers are] trained in the textbook, particularly if they're coming right out of school. They just really seem to struggle and then these kids have really heartbreaking stories. It's just hard to leave that at the office*.
>
> *– Interviewee C, administrator*

A mental health provider also referenced the emotional toll of working with students living in adverse circumstances, adding that SBHC staff not only need to be able to develop relationships with children but also establish boundaries to maintain mental health.

> *I think it takes somebody not only with compassion but also with the ability to disconnect, because you can't take your work home with you. I can't build a mansion and take all these kids home, but I'd like to. So, I think you have to have the ability to set boundaries and be able to go home at night and not worry yourself to death about this kid going home*.
>
> *– Interviewee G, mental health provider*

Training to support SBHC staff

In addition to certain personality characteristics, the interviewees discussed how school-based health-focused training during providers' education could also support SBHC staff. Several SBHC administrators and providers discussed the challenges associated with recruiting adequately prepared SBHC staff. Many staff identified options for formal and location-specific training opportunities that could support SBHC staff.

Challenge 1: Lack of SBHC-focused components in provider education

Many staff felt that additional training in how to work effectively in a school setting could be beneficial for new staff, as one mental health provider described her changing opinion on the utility of SBHC-specific training:

> *You know what, I can only speak from personal experience, but I never had per se formal training to work in a school-based health center […] and if you would have asked me that even a year into it, I would say, "No." Because I just really didn't understand fully, it took time to really understand the scope of it. But knowing what I know now, yes. I think it would be super beneficial to have structured trainings because it's different. The fact of the matter is, it's different to provide therapy in a main clinic where people actually have to come in for their appointment versus school-based health centers. It's just a whole different ball game in a lot of ways*.
>
> *– Interviewee J, mental health provider*

In addition to a lack of awareness or interest, newly credentialed staff may not be adequately prepared for SBHC work. As discussed in the section on SBHC personality characteristics, staff discussed several significant differences between working in a medical center and in a school-based setting, from scheduling visits to obtaining medical history to conducting follow-up visits. Several mental health staff highlighted how their training did not prepare them to work with children without parental involvement. One medical provider described the experience of starting work in a SBHC as "flying blind."

> *So, when you first come to school-based, you're not really trained in that, I don't know anybody who gets training, whether they be a nurse practitioner, MDs, PAs, in what to do when you come to a school-based health center. So, if there's not somebody in your facility that already knows the ropes of what to do at a school-based health center, then you're kind of out there flying blind, or you have your MA who may have some experience if you are following another provider that was there. If you're a brand-new health center, you have nobody who has any experience*.
>
> *– Interviewee L, medical provider*

Related to finding staff who have been prepared to provide health care services in a school setting, one administrator discussed the challenges finding staff who are a good fit for the SBHC setting. For example, staff described how SBHC staff need to go above and beyond their given roles to develop a holistic understanding of the student's needs and seek to remove barriers to receiving care. One administrator described their experience hiring new SBHC staff the following way:

> *Staff is always a challenge. And it is particularly a challenge because I'm all about hiring somebody with both the credentials and either the ability they either have, or they can develop the skills that are necessary for the environment of school-based behavioral health. I have met clinicians that are good clinicians, but I wouldn't send them into a school, or they don't fit with the overall mission statement or program of the way that the philosophy of how we do things*.
>
> *– Interviewee I, administrator*

Another mental health provider talked about how mental health provider training could better prepare providers for working with limited parental engagement, discussed above in the section on SBHC provider personality characteristics.

> *[…] here's the thing, every school is a little different in how they get kids and how they want to structure that. […] I definitely think there needs to be specific training to that. Because like I said, having done therapy on both ends of the spectrum, it's definitely different when you don't have as much parent involvement. That's kind of the whole point is that these kids are often kids who don't have parent involvement in any aspect of their life. So that's a totally different type of therapy than the parent who's going to bring their kid to therapy every week*.
>
> *– Interviewee M, mental health provider*

Finally, COVID-19 caused many direct service fields to go remote. SBHC providers shared how they met virtually with patients but expressed challenges with telehealth visits.

> *And when we talked about telehealth and we have done some telehealth, don't get me wrong, but especially with kids and therapy, there's a huge confidentiality problem based with doing telehealth. Because you have no idea who might be listening on the other end of the camera, just outside of the camera and you have no idea what that kid is facing.*
>
> *-Interviewee M, mental health provider*
>
> *It's internet issues or just not having access. Because when our care coordinators were scheduling those visits, they would give them the option of meeting over Zoom, kind of a little more face to face or by phone. And they, for me, all met by phone. And honestly, and I think that's maybe a specific to West Virginia.*
>
> *-Interviewee O, medical provider*
>
> *I will say from the behavioral health side, if I could do a Zoom, I would be quite willing to try more with tele-health. I made a few efforts to do some tele-health with the phone for kids and felt that it was not effective. And I just stopped even trying. Even in a case where a parent had said, "Please call my kid. My kid's having trouble. They want to talk to you." Then I called but I wouldn't get called back and so on. And so, it didn't seem to be the way.*
>
> *-Interviewee A, mental health provider*

One provider shared how some colleagues struggled to learn technology needed to conduct virtual visits.

> *…we had some therapists who were not experienced with virtual and not real comfortable with that. So, we had to play some catch-up and provide a lot of supervision to get people used to that, medical providers as well, not used to doing that.*
>
> *-Interviewee I, mental health provider*

Challenge 2: Lack of awareness of SBHCs among providers

Both administrators and providers discussed the challenges of hiring and retaining credentialed SBHC staff, especially mental health staff. Staff highlighted a lack of awareness or interest in SBHC job opportunities and expectations among newly graduated credentialed staff. As one administrator described their experience hiring new staff:

> *It's not all that common when somebody would say, "Hey, I want to work in school-based health centers." Sometimes it happens but it's not very often.*
>
> *– Interviewee K, administrator*

Several staff discussed ways to raise awareness about SBHCs and the differences in school-based versus community or clinic work through a school rotation or some other formal exposure to SBHCs during provider education. Rotations allow medical and nursing students to spend a short period of time working in and being exposed to different care environments, such as hospice or an Alzheimer's care unit. Staff suggested that including more SBHCs as rotation site could increase awareness, interest, and preparation for SBHC work. One medical provider described her positive experience with rotating pediatric residents, noting that the participating residents were not familiar with SBHCs.

> *School-based is totally different. The residents have all said that. It's very interesting because they don't get this experience. They don't know much about school-based. I enjoy the fact that we get to show them what it can be about. Several of them who've come through, didn't know what to expect until they got here, and they realized what it was. In leaving, a lot of them have said, "I really enjoyed that." "I liked coming here. The kids were so much different here in this setting than they are in my office because they don't have their parents. They're freer. They talk."*
>
> *– Interviewee L, medical provider*

Challenge 3: Need for continued and local-context specific training

The SBHC staff in this study also discussed location-specific training opportunities that could strengthen their ability to work with students in the school setting. These opportunities could be offered on-the-job and be customized to be responsive to the local community. On the formal side, one mental health provider (Interviewee J) talked about how it could be helpful to review the ethics of providing care in a school setting with school staff. Considering the collaborative relationship many SBHC staff establish with school personnel, this mental health provider suggested it would be useful to discuss guidelines around when and how information on student health can be shared with school personnel.

> *In social work we do a lot of trainings on ethical standards but sometimes the lines can be a little blurry in regard to school-based health centers. Maybe even a training on that, that spells it out. Yes, you're allowed to accept referrals from school counselors, for example. Is it okay to check in with the child's teacher and say, "Hey, has so and so gotten into a fight at recess again?" Or, "Have you noticed so and so […]" Just stuff like that.*
>
> *– Interviewee J, mental health provider*

SBHC staff themselves could be a source of guidance for new providers. For example, one medical provider talked about how in the absence of clear guidance and SBHC training, staff in the field brainstorm and develop a wealth of information that could be shared with one another.

> *So, I think in some ways the providers were always willing to talk to people because they had things they needed to bounce off and figure out how that works or what do you do, how do you get those consent [forms] back? What*

> *are your methods to getting as many as you can? We've done everything from incentives to yeah, gifts cards, to the school nurses one year, I think she bought something for the class that brought back the most. There's lots of different things like that. How do you get your well-childs in during the day? We pick a number that we want to hit every day and try to plug those into the schedule so that we go through our list in advance, find them put them on the schedule and go from there. So, there's just that, how the basics work. So, the providers welcome those ideas and brainstorming*.
>
> *– Interviewee L, medical provider*

Locally-informed trainings could also highlight the local resources available to support SBHC providers and students. One medical provider talked about the challenges associated with starting work in an area without the guidance of other SBHC staff and her plan to develop a resource packet.

> *[T]here's no primer on how to do this … just coming in, you just don't know your resources. Even having this resource packet for school-based health staff to say, "Hey, you work in school-based health in this area. Here are the resources that you have." I was also starting in a town where there weren't very many school-based health staff working, so I think that normally where I would have gotten a little bit more mentorship for that stuff, that wasn't necessarily available. So, I look forward to as we kind of move through this, and I'm not going to say move out of it because I don't know when that's going to happen, but as we move through this that I'm able to identify those things and kind of build my own resource packet*.
>
> *– Interviewee D, medical provider*

Additionally, school systems and administrations vary from one another. A mental health provider highlighted that guidance on how to understand and navigate the local school system can be beneficial for new staff.

> *So, I definitely think they ought to have some training working with kids, and maybe some education on the school system too. How that all works, because I've found out that every school system's different, in our state each county has something different going on*.
>
> *– Interviewee G, mental health provider*

DISCUSSION

Studies of SBHCs have long shown the potential benefits they might provide for students in the form of increases in access and utilization as well as improved academic and health outcomes. Importantly, they may disproportionally support the well-being and achievements of marginalized students thus offering a more equitable playing field. Yet, even despite these findings, only a small number of American students have access to their services in the nation's more than 2500 SBHCs (Love et al., 2019). While political and resource limitations carry part of the blame, the lack of appropriately trained staff is one key challenge that even affects SBHCs already in place. Importantly, this issue may also serve as a bottleneck for potential future expansions given the inherent time-lag between training and deploying providers. Unfortunately, researchers and policymakers alike have generally overlooked this issue to this date.

Relying on interviews of SBHC staffers and administrators, this study is one of the first to explore these underlying challenges by highlighting the desirable personal characteristics of as well as the training and educational needs SBHC staff. Overall, we find that working on the boundary between the education and health sector requires large amounts of flexibility, the ability and willingness to work with and adapt to children, and a focus on being proactive and willingness to work on building relationships inside and outside the school building, perhaps especially during the COVID-19 pandemic. Crucially, there is an important local component to SBHC work that requires constant attention and a willingness to adjust quickly. In terms of challenges related to training and education, we found that providers generally lack any exposure to SBHCs during their education and often are fully unaware of this form of health-care provision. Moreover, local context requires additional and continued investment in training SBHC staff.

Our findings make an important contribution to the literature in highlighting an important, albeit often overlooked, components of healthcare access: an adequate supply of qualified staff. This issue has been particularly left unexplored in the context of SBHCs, a context that is complex and fraught with challenges due to its location at the boundary of two highly complex and often politicized fields of health care and education. Yet given the established benefits of SBHCs as well as the growing awareness of the highly inequitable nature of the U.S. health-care system, a greater exploration of this issue, as well as the potential role SBHCs can play in the health-care system, is well overdue. Moreover, the COVID-19 pandemic has underscored the potential need for coordinated services across sectors. Responding to the ongoing pandemic will require attending to students' physical and mental health needs in ways never previously seen (Wong et al., 2020). Finding suggest that despite barriers posed by COVID-19, SBHC staff were able to serve students and coordinate with the school (once schools opened back up).

LIMITATIONS

This paper is not without limitations. First, we rely on interviews with SBHC staffers and administrators. By definition, qualitative research like this utilized a relatively small number of observations. However, we were diligent in reaching out to a diverse set of respondents along a number of dimensions including the type of sponsor, location, and medical specialty, and role within the center, for example. Future research should seek to expand on our work by surveying a larger number of staff. Second, we rely on interviews from only one state. West Virginia is a poor, rural state with a challenged health-care environment. This may require adaptations and lead to experience that may differ from other places across the country. However, we note that while each local context is unique, similar challenges are present across many areas of the country, particularly those is in similarly rural contexts. Finally, some of our interviews took place during the pandemic. This may highlight certain experiences by SBHC staffers. However, all of our interviewees have worked in the SBHC setting for long periods of time and often in multiple locations and for multiple employers.

CONCLUSIONS AND POLICY IMPLICATIONS

Undeniably, the ongoing pandemic has created additional challenges and further polarized health policymaking (Haeder & Gollust, 2020; Haeder, 2020). Yet policymakers including the U.S. Congress have increasingly become aware of the potential that SBHCs hold to improve student health and academic outcomes, especially during the ongoing pandemic. Recently, Congress passed the *School-Based Health Centers Reauthorization Act* of 2020 which provides important subsidies for SBHCs followed up with the introduction of the *Hallways to Health Care Act* (Haeder, 2021a). The funding may go along away in encouraging future growth in SBHCs, which could help address ongoing student need resulting from the pandemic. Importantly, some of the funds may also be used for training purposes. Yet based on our findings here, the potential supply of providers who will do well and succeed in the SBHC context is inherently limited. Given this small pool, substantially more resources are needed to identify and appropriately train potentially interested providers during their initial education experience. Importantly, given the inherent challenges of working in SBHCs, continued investments are likely necessary. Moreover, structural changes are likely needed within medical education programs that emphasize primary care training in general, while also increasingly seeking out placement opportunities for emerging medical providers to experience nontraditional settings like SBHCs. Further loosening scope-of-practice laws that provide additional autonomy to physician extenders like nurse practitioners and physical assistants would also make SBHCs more viable because they would reduce the need for expensive physician-level providers for SBHCs and their sponsors. Financial incentives like student loan forgiveness may also further encourage providers to work in SBHCs, as may efforts to highlight SBHCs ability to improve equitable access for underserved populations. Local and state-level governments would also be well-served to increase funding, at the very least for starting up SBHCs, to reduce barriers for emerging SBHCs. This has been done on a very limited basis in some states, but funding has been rather limited and temporary (Schlitt et al., 1995). It also seems likely that payors like Medicaid and commercial carriers ought to do more to provide financial stability for SBHCs and their parent clinics by ensuring adequate payment (Keeton et al., 2012) as well as inclusion the increasingly narrowing networks (Haeder & Weimer, & Mukamel, 2020). More scholarly work is needed to highlight the benefits generated from SBHCs, particularly from an equity standpoint and their benefits for underserved and excluded populations struggling to access care in more traditional settings. Importantly, scholars should also be mindful of the need to disseminate these findings beyond academic journals to enter into the policymaking process.

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CONFLICT OF INTERESTS

The authors declare no conflict of interest.

ETHICS STATEMENT

The research was conducted in line with academic ethical guidelines.

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COMMENTARY

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Placing abortion in historical, legal, and clinical context in American medical school classrooms

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Abstract

Abortion is one of the most commonly performed medical procedures in the United States. In 2018, physicians in the United States performed 189 abortions for every 1000 births. Abortion is also common in other countries; across the globe, tens of millions of women seek abortions annually. In the countries that have legalized abortion, ready access to the procedure, along with access to reliable contraception, have improved women's economic status, their health, their longevity, and their ability to care for their children. Yet, despite its prevalence and benefits, abortion has also been a magnet for political controversy in the United States and elsewhere. In the United States, where the controversy has not ebbed for 50 years, abortion laws in some states have become increasingly restrictive, particularly in the last decade. This commentary describes an innovative way to teach medical students about abortion and argues that teaching abortion to medical students in the United States and throughout the world has become more, rather than less, important. This article also argues that, given the importance of access to safe abortions for women's health and well-being, medical schools are obligated to provide medical students with the comprehensive medical knowledge that will allow them, after becoming physicians, to accurately advise, and sensitively counsel, women seeking abortions. Medical schools are also obligated to arm medical students with the relevant historical and legal knowledge that will allow them to advocate for the comprehensive reproductive services that all women need—services that include safe, legal abortion.

KEYWORDS
abortion, history, medical education, medical ethics, U.S. constitutional law

Key points

- Legal abortion is exceedingly safe and has improved women's economic status, their health, their longevity, and their ability to care for their children.
- Some US states are passing increasingly restrictive laws impeding women's access to abortion.
- Teaching abortion to medical students in the United States and throughout the world in a compelling, multidisciplinary way has become more, rather than less important in the last decade.
- Medical schools should provide medical students with not only the clinical knowledge, but also the historical, legal, and anthropological knowledge that will allow them to effectively advocate for safe, legal abortions for patients and to accurately advise and sensitively counsel women seeking abortions.
- Multidisciplinary teaching techniques teach medical students that clinical context is not the only context that matters when providing comprehensive patient care.

INTRODUCTION

Abortion is one of the most frequently performed medical procedures in the United States. In 2018, US physicians performed an estimated 619,591 abortions—189 abortions for every 1000 live births (Kortsmit et al., 2020). Abortion is common in other countries too—one in three women in the United Kingdom have an abortion before age 45 (Cohen et al., 2021). In Australia, a country of about 25 million people, physicians perform 100,000 abortions annually (Cheng & deCosta, 2021), Although legal restrictions regarding abortion now vary in South American countries, between 1995 and 2008, when abortions were almost exclusively illegal, 25% of all pregnancies nevertheless ended in abortion (Provenzana-Castro et al., 2016; Sedgh et al., 2012). Worldwide today, between 40 and 50 million abortions are performed annually (Adekanye, 2021). Yet despite the ubiquity of abortion, medical students have scant opportunity to learn how to discuss abortion with patients. Fewer still are taught how to perform medical and surgical abortions. Medical students learn even less about the history of abortion practices in their own countries, and about the development and current state of their country's abortion laws (The American College of Obstetricians and Gynecologists, 2014).

This article describes a multidisciplinary approach to teaching abortion. The article's central argument is that teaching abortion to medical students in the United States and throughout the world in a compelling and creative way has become more, rather than less imperative in the last decade. Although tens of millions of women across the globe seek abortions annually, opponents of legal abortion have become more creative in their efforts to block access to safe abortions. In the United States, abortion laws have become increasingly restrictive in states with Republican-party-dominated legislatures (Bowman, 2021; Nash & Naide; 2021), threatening women's access to a medical procedure that is extremely safe wherever it is legal (Raymond & Grimes, 2012); a procedure that has improved women's economic status, their health, their longevity, and their ability to care for their children (Bernstein & Jones, 2019; Finlay & Lee, 2018; Gammage et al., 2020). Thus, this article also argues that medical schools must not only provide medical students with the medical knowledge to accurately advise and sensitively counsel women seeking abortions, but also must arm students with the historical and legal knowledge that will allow them to effectively advocate for safe, legal abortions for patients.

Although this article largely addresses the US context, the method the authors use to teach abortion—putting abortion in a clinical framework for medical students as well as supplying historical, anthropological, and legal frameworks—can be applied in all medical schools in all countries. Even within the United States, where each state has dissimilar laws and histories that apply to abortion, teaching the clinical aspects of abortion management remains largely uniform across states. Yet history, the law, and healthcare policy shape medical practice. Thus, teaching medical students across the globe about the historical and legal context in which they will practice will make them more astute, compassionate physicians. Context matters, including, or perhaps especially, in medical practice.

THE POLITICAL CONTEXT OF ABORTION IN THE UNITED STATES

Abortion has been a magnet for controversy in the US political arena since 1973 when the US Supreme Court legalized abortion throughout the country. The political dispute has often manifested violently. Abortion providers in the United States have been murdered. Abortion clinics have been bombed. Women seeking abortions have been, and continue to be, harassed (Joffe, 2009, pp. xi–xvi; 1–20; Press, 2006, pp. 1–8; 95–111). On a more peaceful, but equally powerful level, abortion has shaped virtually all US political elections and daily political dynamics for almost 50 years.

Beginning in the early 1970s, as the Republican president Richard M. Nixon prepared to run for his second term in office, he became the first American politician to frame abortion as what eventually became known as a "wedge issue"—a cultural controversy exploited specifically to attract one-issue voters and "values voters." The issues that attract values voters in particular in the United States now include not only abortion but also gay marriage and transgender rights (Press, 2006; pp. 68–72). Most recently, "critical race theory," a concept confined almost exclusively to American legal scholarship and used by law professors to explain the persistence of structural racism despite the passage of myriad laws that were supposed to protect minorities from discrimination, has joined the list (Iati, 2021). Values voters are against them all. These wedge issues, with abortion almost always at the top of the list, serve as the deciding factor for values voters when they choose a particular candidate (Joffe, 2009, pp. xi–xvi)

In the state of Ohio, for example, where the authors of this article live and teach, the Republican-dominated state legislature periodically passes legislation to restrict access to abortion. Although federal courts quickly block as unconstitutional most of the legislation, the laws nevertheless serve their intended purpose—not necessarily to restrict abortion but to garner political capital in the form of votes for Republican candidates (Rosenberg, 2019).

While European democracies have not seen abortion enter the political arena to the extent it has in the United States, the procedure nevertheless generates controversy—and influences politics—in other countries as well. In countries where abortion does generate significant debate, religion is often the chief factor influencing medical and public attitudes toward the procedure, dissuading physicians from providing access even in situations where abortion is legal (Saadeh et al., 2021). In Argentina, for example, abortion is legal only if a woman's health is threatened by the pregnancy, or if the pregnancy is the result of sexual assault. Even in those situations, however, most Argentine women meeting that criteria are either not informed of their rights or physicians impede their access to abortion even when a legally qualified woman requests one (Provenzana-Castro et al., 2016).

LEARNING ABOUT ABORTION IN MEDICAL SCHOOL

Although the research on American medical students' attitudes toward abortion is limited, extant studies do indicate that most medical students in the United States find abortion to be morally acceptable (Bennet et al., 2018). Physicians' professional organizations in the United States likewise have been supportive of abortion as a legal medical procedure, periodically advocating publicly for women's right to access a comprehensive roster of reproductive health services that include abortion. The American College of Obstetricians and Gynecologists (ACOG) has been especially vocal, repeatedly describing abortion as one medical procedure among many that comprise a complete approach to women's health care. ACOG has called for destigmatizing abortion in the public and medical realms, integrating abortion training into medical education, and ensuring that all residents in obstetrics and gynecology receive comprehensive training in medical and surgical abortion, with an opt-out provision for residents who have religious or moral objections to the procedure (The American College of Obstetricians and Gynecologists, 2014).

Nevertheless, in the United States, teaching abortion to first- and second-year medical students can be as perilous in the classroom as discussion of the practice of abortion is in broad cultural, political, and social arenas. Regardless of American medical organizations' support for keeping abortion legal, the stigmatization of abortion has affected medical school curricula, leaving American medical students insufficiently trained to perform abortions and unprepared for counseling patients about pregnancy options. Recognizing their dearth of knowledge, some American medical students have called for curricular reform that includes more time for reflection about abortion, and opportunities to observe abortions (Rivlin et al., 2020).

The lack of knowledge among medical students is not unique to the United States, however; inattention to abortion education is a worldwide problem. In Canadian medical schools, lack of discussion of both the epidemiology of abortion and how best to counsel pregnant patients about their options has resulted in students graduating from medical school with a poor understanding of every aspect of abortion, from the clinical to the social to the epidemiological (Cessford & Norman, 2011). In Australia, where abortion is taught in most medical schools, newly graduated physicians still express little confidence in their ability to provide abortion care; consequently, Australian medical students have called for more exposure to abortion during medical training (Cheng & deCosta, 2021). In Argentina, although most final-year medical students know that abortion is restricted in Argentina, they still harbor misconceptions about when abortion is permitted, indicating that abortion is inadequately addressed in the medical school curricula. Between 2006 and 2016, the estimated 370,000–460,000 abortions in Argentina each year, most performed under illegal and unsafe conditions, resulted in one-third of the maternal deaths in the country (Provenzana-Castro et al., 2016).

The authors' medical school schedules two hours at the end of students' second year to teach the fundamentals of medical and surgical abortion and the history of abortion practices and abortion law. The authors team-teach the activity and, given the limited time they have for face-to-face interaction with students, they have considered carefully how best to utilize the time to provide the most information to students *and* destigmatize a medical procedure that has been politicized.

Jane Broecker and Jackie Wolf, an obstetrician/gynecologist and a historian of medicine, respectively, bring to the classroom different forms of medical knowledge about abortion. Broecker has worked as a surgical abortion provider. When she was a medical student in the late 1990s, however, abortion was covered only in the recommended text and board review books; she received no formal, in-class education on abortion. Not until she was a resident in obstetrics and gynecology at the University of Cincinnati, did she receive hands-on abortion training at a Planned Parenthood clinic. Later, during a fellowship in Pediatric and Adolescent Gynecology in the early 2000s, she worked at Cincinnati Women's Services, providing surgical abortions for women who were 6–20 weeks pregnant. Through these clinical experiences, Broecker learned proper surgical techniques and the value of counseling pregnant women. To keep pace with the latest research and practices, she attended continuing education conferences offered by the National Abortion Federation. This training and experience shaped Broecker's definition of what constitutes comprehensive reproductive health care and nurtured her passion for helping girls and women achieve their reproductive goals, especially preventing unplanned pregnancy.

Wolf, Broecker's teaching partner, is a historian of medicine who specializes in the history of women's reproductive health in the United States. Wolf's work, like Broecker's, has shaped her perspective of abortion and her approach to teaching abortion to medical students. As a historian, she has studied the high death rate among women who sought abortions when the procedure was illegal. She has also studied the positive effect that legalizing abortion has had on women's economic status, social status, and health status (Bernstein & Jones, 2019; Finlay & Lee, 2018; Gammage et al., 2020; Joffe, 1995, pp. 70-142; 2009, pp. 99–118; Reagan, 1997, pp. 246–247).

STRUCTURING AND RESTRUCTURING A LEARNING ACTIVITY ABOUT ABORTION

Early in their collaboration, Wolf and Broecker recognized the need to devise teaching techniques that would anticipate and thwart the polemics and political controversy that too often manifested in the classroom as accusatory questions and ill-informed arguments. Wolf now uses history and anthropology to offer social and cultural perspectives on abortion that most students have not considered; Broecker engages students in role-playing real-life scenarios to afford them a glimpse of the complexity of reproductive choices and to provide them opportunities to find the vocabulary they will eventually need to discuss reproductive options with patients.

Most medical students spend their premedical, undergraduate college years studying the biological and physical sciences (Murphy, 2021), and thus have not acquired the perspectives customarily provided by the social sciences and humanities that prepare them for handling controversial topics, such as abortion, in the clinic. Few American medical students have thought about abortion as having a complex, relevant history; few know even the basic content of the court decisions that have shaped abortion practices in the United States, and few have considered any clinical scenarios, even the common ones, that require thoughtfully listening to and impartially counseling unhappily pregnant women. Wolf's and Broecker's approach to teaching abortion requires that students not only apply their knowledge of anatomy, pharmacology, and physiology but also consider the psychosocial aspects of abortion.

The current incarnation of the abortion activity taught by Broecker and Wolf differs from its original design and content, although the core of the class has survived multiple curricular changes. Despite two new curricula since they began teaching together in 2003, their colleagues responsible for curricular development have consistently supported the inclusion of Broecker's and Wolf's class in the second-year course, allowing a class on abortion history, law, and clinical care to survive curricular redesigns.

When Wolf and Broecker began teaching together, the medical school offered a primarily lecture-based curriculum. Under that system, Wolf provided the history of abortion practices and abortion law in an in-class lecture format while also inviting students' questions. Broecker then explained the clinical aspects of medical and surgical abortion and likewise encouraged questions. Students' questions had a more hostile tone in the early years, particularly when students wanted to debate the question of when life begins. But as Broecker and Wolf learned how to temper the rhetoric in the classroom—by acknowledging the national controversy from the start and asking students to recognize the moral ambiguities on both sides of the abortion debate—students engaged with less animus and more interest, asking questions that would be useful to their future medical practice rather than to advance a political agenda. In recent years, one student asked for a description of the best approach to counseling patients about their reproductive options in Ohio, where the state legislature has consistently attempted to restrict women's access to abortion services despite the legality of abortion. Other students have wondered about their professional obligation to discuss or educate patients about abortion if they personally oppose abortion.

The in-class lecture style of presentation ended in fall 2018 with the introduction of an "active learning" curriculum. Wolf and Broecker modified their lecture-based presentation accordingly to devote more classroom time to case-based education, according to the dictates of "active learning (Graffam, 2007). They prerecorded the lectures they had been delivering in-person for years and asked students to listen to the lectures before class—Wolf's talk on the history of abortion practices and the evolution of abortion law, and Broecker's talk on medical and surgical abortion. During the recorded lectures, both instructors remind students repeatedly that abortion can be prevented by preventing unplanned pregnancies.

They also explain to students that qualitative studies have shown that whether Americans self-identify as "pro-life" or "pro-choice"—the American labels, respectively, for those who oppose legal abortion and those who favor legal abortion—the majority of Americans nevertheless have complex, nuanced views of abortion that belie those labels. Most Americans, rather than being staunchly pro-life or pro-choice, state they are "somewhat" or "mostly" in favor of access to legal abortion (Jozkowski et al., 2018). As a physician, Broecker is especially credible in students' eyes when she reminds them that physicians are obligated to respect their patients' decision and right to seek a legal treatment regardless of a physician's personal stance on abortion. Although every year a few students still attempt to turn the in-class hours into a political debate, class discussions have become less strident given the informative, nuanced material in the prerecorded lectures, and as Broecker and Wolf learned how to keep the focus in class on what medical students must know to care for patients seeking abortion or postabortion care.

This knowledge has become increasingly imperative as the restrictive laws passed by Republican-dominated state legislatures affect more women each year. The women most affected by abortion restrictions include women living in rural areas, women who are undocumented non-US citizens, women who are uninsured, and women who are underinsured. Women who are insured by Medicaid—the federal- and state-funded insurance program for US citizens, and qualified noncitizens, who fall below a certain income level—can also be prevented from obtaining an abortion, depending on what the law in their state says about Medicaid payment for abortion. Federal funding cannot be used to pay for abortions, but state funding can be used if a woman's state permits it (Rebeca Lai & Patel, 2019). In other words, given the piecemeal health insurance coverage in the United

States, access to abortion is realistically only for privileged women despite abortion before fetal viability being legal everywhere in the United States (except currently Texas, as explained below). LGBTQ politics in the United States intersects with abortion as well. Transgender and nonbinary individuals are often denied access to reproductive healthcare (Fix et al., 2020). Any discussion of abortion must therefore be not only about abortion, but also about who is excluded from healthcare services in the United States and why.

RECORDED LECTURE #1: A BRIEF HISTORY OF US LAW AND REPRODUCTIVE RIGHTS

Anticipating that some students will object to learning anything at all about abortion, Wolf's recorded lecture begins with an explanation of why all physicians should learn about abortion—it is the second most common surgical procedure in the United States after cesarean section, and before 2009 it was the most common. After listing statistics establishing how many abortions have been performed in the United States annually since 1973, she explains that abortion services are so widely and consistently accessed that queries about abortion will arise in most physicians' offices. She reminds students, “No matter how you feel about abortion, you are responsible for imparting accurate, timely information to a patient seeking an abortion.”

Then she puts abortion in historical and legal context. She explains that, until the early 19th century, abortion was legal in every state in the United States before “quickening,” roughly the 20th week of pregnancy when a pregnant woman first feels fetal movement. States began to slowly outlaw abortion beginning in the 1850s in response to a political concern—that primarily White, native-born, middle-class, married women were seeking abortions in an era when the immigrant population was burgeoning. Dr. Horatio R. Storer, who led the medical community's campaign to outlaw abortion in the United States, wondered publicly if the tenets of “civilization” would be spread “by our own children or by those of aliens? This is a question our women must answer; upon their loins depends the future destiny of the nation.” In the unabashedly racist, late 19th-century United States, newspapers and medical journals echoed Storer, railing against the largely Catholic and Jewish immigrants who, American politicians and physicians feared, would soon outnumber culturally desirable White, native-born Protestants who preferred smaller families. In reaction to the nativism, by the mid-19th century, abortion was illegal in every state in the United States, with the stipulation that abortion still could be performed when a pregnancy threatened a mother's life or health. This history teaches medical students that abortion has always been used for political purposes in the United States (Reagan, 1997, pp. 8-11).

The history lesson is also a way to describe the consequences of outlawing abortion. Laws forbidding abortion have never dissuaded unhappily pregnant women from seeking one. Instead, the laws drive the surgery underground, making the procedure dangerous. In the United States, while infant mortality decreased 53% between 1900 and 1920, maternal mortality increased 27% (Woodbury, 1926). And of the 3234 maternal deaths in 13 states reviewed in 1927 by the US Children's Bureau, a now-defunct federal agency, 40% were caused by septicemia and an abortion preceded 45% of those deaths (United States Department of Labor and United States Children's Bureau, 1931, p. 20).

By the 1930s, abortion was so common in the United States despite its illegality that hospitals set aside space for septic abortion wards in an attempt to save women's lives (Reagan, 1997, p. 138). In 1962, Chicago's Cook County Hospital alone treated nearly 5000 women for abortion-related complications (Reagan, 1997, p. 210). By the mid-1960s, most Americans favored legalizing abortion and this increased the pressure on American lawmakers to establish the right of all women in the United States to obtain a legal, safe abortion if they sought one (Reagan, 1997, p. 203).

Most notably for the evolving interpretation of US constitutional law relating to human reproduction, in 1965 the US Supreme Court overturned a 19th century Connecticut law outlawing the use of contraception. The Supreme Court declared in *Griswold v. Connecticut* that banning contraception violated a right implied by the US Constitution—the right of married couples to privacy. The right-to-privacy concept in the context of human reproduction provided the legal underpinning for *Roe v. Wade*, the case that legalized abortion in every state in the United States, 8 years later (Reagan, 1997, p. 237).

Discussing *Roe* at length is central to the first recorded lecture. Wolf and Broecker have learned that few students know the fundamental meaning of the decision even when they express strong opinions in class about the decision's merits. *Roe* neither universally legalizes "abortion on demand," as critics often characterize the legal decision—instead it legalizes abortion in the first trimester and leaves it up to states to legalize abortion, or not, in the second trimester—nor does *Roe* focus solely on abortion. The decision, at its heart, is about protecting the patient/physician relationship, and ensuring the right of patients to seek medical help and the right of physicians to practice medicine without government interference—concepts all medical students likely support (ROE, et al., Appellant v. Henry WADE.

Three major Supreme Court decisions on abortion have been issued since *Roe* and all have upheld the core finding of *Roe*—that abortion is a legally protected medical procedure that physicians have the right to perform and patients have the right access—while also altering the law somewhat. In 1992, *Planned Parenthood of Southeastern Pennsylvania v. Casey* abandoned the principle that all states must permit abortion during the first trimester and declared instead that all women in the United States have a right to terminate a pregnancy before the fetus is viable. This has made the time limit for seeking a legal abortion dependent on the state of medical technology. Today, modern medicine can keep an infant alive outside the uterus beginning at between 22 and 24 weeks. When *Casey* was handed down, however, viability was 28 weeks (*Planned Parenthood of Southeastern Pennsylvania v. Casey*).

Casey also created a standard that allows states to restrict abortion, as long as state laws do not place an "undue burden" on the right to abortion. This stipulation allowed state legislatures that seek to restrict abortion to pass hundreds of so-called TRAP laws—targeted regulation of abortion providers—that limit the ability of abortion providers to provide care. Critics of TRAP laws have pointed out that if gastroenterologists, as one example, had similar laws limiting their services, they would not be permitted to provide colonoscopies as an outpatient service. Proponents of TRAP laws, on the other hand, argue that the laws protect women's health. In 2016, the Supreme Court decision *Whole Woman's Health v. Hellerstedt* reversed some TRAP laws as undue burdens that restricted the right to abortion and not necessary to protect women's health (*Whole Woman's Health v. Hellerstedt*). In 2020, *June Medical Services v. Russo*, the most recent Supreme Court decision to affirm *Roe*, struck down a Louisiana law that was almost identical to the Texas law struck down in *Whole Women's Health* (*June Medical Services LLC v. Russo*).

Opponents of abortion have become increasingly creative in their law-making, however. Most recently, in early September 2021, the Texas state legislature passed a bill that bans all abortions after 6 weeks of pregnancy in direct contradiction to both *Roe v. Wade* and *Planned Parenthood v. Casey*. The unconstitutional Texas law, however, is written in such a way as to deprive opponents of a defendant to sue. The law allows private citizens, not state and local governmental agencies, to enforce the restrictive law, making it difficult to challenge in court because no specific person or agency is charged with enforcing the law. To date, the US Supreme Court has refused to intervene; the ploy, in other words, has worked (Liptak et al., 2021; Totenberg; 2021).

RECORDED LECTURE #2: MEDICAL AND SURGICAL ABORTION

Broecker's recorded lecture covers all clinical aspects of abortion as well as embryonic and fetal loss. Like Wolf, she introduces the topic by acknowledging the complicated spectrum of attitudes toward abortion among Americans. And she, too, stresses that despite the array of feelings among medical students and physicians, physicians are uniquely obligated to be informed about abortion so that they can provide accurate information and compassionate care to their patients, and make the expressed needs of patients their highest priority.

The first topic of Broecker's recorded lecture is how to remain objective when providing pregnant patients with options counseling. She reminds students that every pregnancy test result affords a physician an opportunity to learn a woman's reproductive goals. A positive pregnancy test should prompt a provider to ask if the pregnancy is planned or unplanned, desired or undesired, or if it evokes ambivalence. Similarly, a negative pregnancy test can result in any one of an array of emotions that include relief, despair, disappointment, and fear. Thus, the result of all pregnancy tests should be communicated to patients sensitively without presuming a patient's reaction. Broecker explains how to use neutral language to encourage the patient to describe her reproductive hopes without feeling judged.

Broecker then describes medical abortion, including the pharmacology of medications and associated protocols and risks, and the medical management of embryonic and fetal demise, explaining that the medical termination of pregnancy is notably safe and effective during early pregnancy (Raymond & Grimes, 2012). She also describes how people with unwanted pregnancies can order medications on the internet from unapproved websites, rather than certified online abortion providers, resulting in a higher rate of incomplete abortions than supervised, medically directed abortion services provided online or in-person.

Techniques for surgical abortion, and for obstetric dilation and curettage in pregnancy loss are similar, thus Broecker discusses them together. She describes the basic instruments used for suction procedures and the steps necessary to safely evacuate a pregnancy. She also explains second-trimester abortion procedures, including the use of misoprostol for cervical ripening, and pain management options.

Throughout the recording, Broecker weaves information regarding abortion access, counseling, the number of necessary visits, same-day contraceptive provision, and follow-up for postoperative care. She recounts some patients' experiences with both pregnancy loss and elective termination and describes strategies for objectively assisting patients facing especially difficult reproductive choices. The content of her recorded lecture converges with Wolf's when she describes how access to abortion is being restricted and the impact that restrictions may have on patients in the context of patient safety, patient autonomy, and the disproportionate effect of legal restrictions on poor women, women of color, and women living in rural areas. In teaching abortion to medical students, Broecker and Wolf have found repetition to be helpful. The historical, legal, and ethical cannot be separated from the clinical and the two instructors complementary disciplinary perspectives illustrate that concept for students.

IN THE CLASSROOM

By the time Broecker and Wolf meet in the classroom with second-year medical students, all students have watched the two lectures online. Wolf begins the in-class portion of the activity by inviting questions and comments about the recorded material. The questions vary annually in content and tone. Questions from students about the medical and social meaning of viability are often raised and should be part of any discussion about abortion; if students do not broach the subject, the instructors do. One year, a student did ask how the Supreme Court justified giving increased meaning to fetal life based on fetal age. “If fetal life is of value in the third trimester, why doesn't it have equal value in the first and second trimesters?” Wolf responded by noting that *Roe* is a secular decision based on Supreme Court justices' interpretation of the US Constitution, a document that all Americans, no matter their religious affiliation, must honor. As to when life begins, each religion has a different answer. “In my religious tradition, which is Judaism, we learn that life begins when you draw your first breath.” Broecker provides the clinical perspective of viability, pointing out that the medical definition of viability has shifted over the course of her career, based on the development of new therapies and the creation of the neonatal intensive care unit.

Normally, Wolf and Broecker begin by simply inviting students to raise their hands and ask questions and offer comments. One year, however, hoping to increase student participation, they invited students to ask questions anonymously via Top Hat, a software program that encourages so-called active learning. Some of the submitted questions reflected the types of concerns that stem from common misinformation about abortion—what anti-abortion advocates have dubbed “late-term abortion,” for example. The manufactured controversy has become a hot-button political issue that conjures images of full-term, viable fetuses being torn, mutilated and dying from their mother's womb. In reality, a “late-term abortion” has no medical definition. Indeed, third-trimester abortions have been banned by almost all state legislatures in the United States unless a mother's life is threatened by the pregnancy. An abortion performed after 20–24 weeks thus is exceedingly rare and generally, although not exclusively, is performed in a wanted pregnancy for two reasons—to save a mother whose life is threatened by a pregnancy, or to abort a fetus with life-threatening abnormalities.

Typically, though, the anonymity provided by Top Hat encouraged vitriolic political rhetoric rather than serious questions. One student, for example, entered the following question into Tophat: “The amygdala of a 3-year-old child is not fully developed, so why is their life of more value than the life of a developing six-week-old fetus?” This type of inflammatory question, hidden behind the anonymity of Top Hat, outnumbered sincere queries, derailing what the instructors intended to be a rich and respectful discussion. In subsequent years, they returned to traditional in-class hand-raising for questions.

After the question-and-answer session, Wolf launches into an anthropological explanation of abortion, beginning with a rhetorical question. “If women's ability to control their reproductive capacity has contributed to better health for women and children, longer lifespans for women and children, and improved social and economic status for women, why have contraception and abortion been so controversial historically?” Because, she explains, despite the benefits, women's ability to control the number of children they bear impacts two issues that are controversial in every society—sexual activity and population size.

Wolf describes the work of Sarah Blaffer Hrdy, an anthropologist who specializes in primates and mothering. Hrdy explains that between 100,000 and 200,000 years ago, the human population consisted of about 10,000 breeding adults living on the continent of Africa. The population remained stable for tens of thousands of years because it was a risky time to be born—drought, famine, and predators kept the size of the human population largely unchanged. While virtually all females who lived to adulthood 150,000 years ago gave birth, the majority died without leaving any surviving offspring. Hrdy argues that, consequently, giving birth to numerous children has rarely been a priority for mothers, hence the persistent evidence of abortion in prehistory. Human females are hardwired to want to give birth only to as many children as they can protect and care for adequately (Hrdy, 2000). The goal of providing this information is to offer medical students yet another lens with which to view contraception and abortion, in addition to the historical, legal, and clinical perspectives that Wolf and Broecker provide in their recorded lectures.

CLINICAL SCENARIOS

Then Broecker gets to the heart of the in-class activity. She offers a series of common clinical encounters in which she plays the patient and a student volunteers to be the physician. She begins with common, straightforward scenes and advances to more challenging situations. Each scenario teaches students to use neutral, nonjudgmental, informative language when talking to a patient who faces a reproductive decision.

In the first, most common scenario, a 32-year-old female who has had four pregnancies, one early pregnancy loss, and two live births comes to the clinic complaining of irregular menses. Her last menstrual period was 6 weeks ago. The physician orders a pregnancy test revealing pregnancy. Broecker asks the student playing the physician: "How do you inform this patient that she is pregnant?" This relatively simple scene teaches students to begin with open-ended questions when telling a patient that she is pregnant. A physician should never assume that pregnancy is desired or undesired. In asking open-ended questions, the physician learns the patient's feelings about her pregnancy to help her achieve her reproductive goals. Normally, a positive pregnancy test prompts the student playing the physician to say reflexively, "Congratulations, you are pregnant." Yet the automatic congratulatory approach is inherently judgmental, implying all pregnancies elicit happiness. Class discussion teaches students that a predetermined, automated response to a pregnancy test is never appropriate. A physician first must explore how the patient is feeling by explaining, "When someone has irregular bleeding, we always do a pregnancy test to find out if the irregularity is caused by pregnancy. Your test indicates that you are pregnant." And then adding, "How do you feel about this information?" Cultural assumptions are powerful; often students stumble awkwardly through even this straightforward scenario, highlighting how easily both physicians and the lay public assume pregnancy evokes joy.

By the end of the first exercise, students have learned how to educate a patient about her options in the event of an unplanned pregnancy and to do so without favoring one option over another. Broecker encourages students to ask an unhappily pregnant patient what options she is considering rather than listing options for the patient. Only if the patient misses an option should the physician then remind her of any that she has not mentioned. If done correctly, options counseling ensures that by the end of the interaction, the patient is aware of her three options—abortion, adoption, and parenthood—but the physician has not favored one option over another by listing them in a certain order or adopting a certain tone of voice.

During role-playing, Broecker asks students in the audience to pay close attention to, and eventually comment on, the language and tone of the student playing the physician. When a student used the term "abortionist," for example, Wolf pointed out that "abortionist" is a derisive term coined by anti-abortion activists. A surgeon who performs appendectomies is never described as an "appendectomist." A primary goal of the in-class session is to ensure that students understand the importance of choosing words intentionally when talking to patients, if not provide them with the precise vocabulary they need in common clinical situations.

Leading questions often come naturally to students and can threaten the patient's ability to make an autonomous decision. For example, the student playing the physician might ask an unhappily pregnant patient, "why don't you consider adoption?," rather than pose the more neutral question, "what are your thoughts about adoption as one of your options?" As students observe the discussion orchestrated by their student colleagues, they learn how successful—or problematic—a clinical discussion can become, depending on a physician's choice of words. When the student playing the physician uses colloquial language, Broecker, playing the patient, responds in a way that demonstrates how offensive informal language can be, shutting down productive discussion and eroding the physician–patient relationship. For example, if a student asks, “Why don't you think about adoption?,” Broecker responds angrily: “Are you telling me I'm not good enough to raise my own child?” If the student inadvertently asks a judgmental question—“why don't you want to keep your baby?”—instead of the neutral “what factors led to your decision to have an abortion?,” Broecker gently corrects the student and reminds the group of the impact that judgmental language can have on a patient.

After presentation and discussion of relatively straightforward cases, Broecker poses more complex, emotionally challenging scenes. Shanya has given birth to two children and is pregnant for the third time. She is a nurse who works days, Monday through Friday, in an outpatient clinical setting. She is recently married to her second husband and does not want more children, although her husband would be thrilled to have a child with her. She did not have time to drive two hours to the nearest abortion provider, so she took the abortion-inducing medication that she ordered on the internet. She presents with spotting and cramping. Broecker asks students, “How do you proceed? How could this situation have been prevented? What can you, as a physician, do to help Shanya?” Students consider how best to respond to a patient who has chosen to keep from her husband her decision to terminate a pregnancy—a choice that some students consider immoral or unethical and a choice a woman should share with her spouse, regardless. Broecker reminds students that their obligation is to help the patient, even when the patient has made choices at odds with the physician's values.

Scenarios become increasingly fraught. At 17 weeks pregnant, a patient who had a cervical dilator placed for cervical ripening in preparation for an elective abortion changed her mind after her water broke and she began to have strong contractions. She comes to the clinic asking the physician to do whatever can be done to prolong the pregnancy so that she can give birth to a healthy baby. Broecker asks the students several questions. Is the patient's request a practical one? What health risks does the patient face? What is the physician able to do legally in this situation? Can other physicians play a consulting role? The scene provides medical students with a better understanding of the emotional complexity of abortion, the legal implications of medical decision-making, and how to seek assistance and advice from colleagues when faced with daunting clinical situations.

Not only patients, but also new medical technologies present physicians with personal, legal, and ethical dilemmas. The discovery that fetal DNA circulates in a pregnant woman's blood prompted the development of a noninvasive maternal blood test in 2011. The blood test allows obstetricians to look for fetal chromosomal abnormalities during the first trimester of pregnancy. Physicians must consider the implications of such an easily administered test, including the pressure the test puts on all pregnant women to choose prenatal testing, how the test might further stigmatize disabilities in cultures that already stigmatize disability, and the implications of having comprehensive genetic information on a child before birth—information a child might not want when they reach adulthood (de Jong et al., 2010), Students also learn how to navigate discussions with patients about abnormal prenatal test results without pushing patients toward a particular decision.

Broecker uses the case of a 31-year-old woman who comes to the clinic to discuss the result of a prenatal test indicating that the fetus she is carrying has Down syndrome. As role-playing progresses, Broecker asks students whether the conversation might take a different course if the patient is carrying a fetus with trisomy 13, a typically lethal genetic abnormality. The exercise helps students focus more on individual patients' concerns and values, and less on the political animosity that has become central to the discussion about abortion. The exercise also helps students recognize that while some patients would not choose to terminate a pregnancy if the fetus has Down syndrome, the same patients might choose to terminate a pregnancy if the prenatal test is positive for trisomy 13. Other patients might feel that every moment of their child's life will be meaningful even if the fetus has trisomy 13.

The last few scenarios compel students to consider varied views on congenital anomalies and abortion. Broecker suggests to students that they facilitate patients' decision-making, not through the lens of their own personal belief system, but using the patient's belief system as their guide. She pushes students to consider how to ensure that the medical care they offer is centered on the patient and the patient's values, even when the patient's values clash with the physician's values.

COMMUNICATION FROM STUDENTS VIA EMAIL

Despite the pre- and in-class efforts to diffuse vitriol and encourage questions, many students remain reluctant to speak in class about abortion and so they send more questions via email after class than voice questions during class. Wolf and Broecker respond to every email. The emails fall into one of three categories: complementary, dissatisfied, and inquisitive. Wolf received a representative complementary email in March 2021. “I wanted to thank you for the quality of your pre-records on abortion laws. You taught in a non-biased, yet informative manner. I realize this can be hard for many due to the nature of the topic, but you made it seem effortless.”

Even students displeased with the activity are polite in emails. Although another student similarly valued the recorded lecture (“I also really appreciated the end of your lecture in which you argued that the discussion should be primarily concerned with prevention rather than termination of undesired pregnancy—I very much agree with that”), the student also expressed disappointment with “the lack of discussion regarding both sides of the issue.” Even though research indicates that most Americans harbor complex views of abortion rights, the student's complaint is a reminder that most Americans also view abortion as a binary issue even if they hold nuanced views. Another student similarly appreciated the activity while also criticizing it. “I know how incredibly difficult it is to navigate a topic like abortion in a large class with diverse students, and I am glad that there was an effort made to do so.” The student observed, however, that although “there was a slide mentioning all the good outcomes of abortion availability, there was no counterpoint that, in the eyes of some, the good outcomes have come at the cost of millions of lives.”

Broecker thanked the student for their thoughtful reflection and acknowledged that she and Wolf do tell students that they believe women have a right to control their own reproductive health. “Dr. Wolf has studied the horrors of illegal abortion through history, and I have personally cared for many patients facing difficult reproductive decisions.” She adds that her experience as an abortion provider also taught her that “many pro-life physicians” withhold information about abortion from patients even when the patient directly asks for information. The difference between her and most pro-life physicians, she explains, “is that I never want to steer a patient toward having an abortion, nor do I want to steer her toward continuing an unintended pregnancy….I just want her to have accurate information to make the choice she feels is right for her.”

One student expressed dissatisfaction anonymously, filing a “Bias Incident Report” with the medical school's Office of Diversity and Inclusion. The report charged that “diversity of thought was not encouraged” in class. Wolf told the Chief Inclusion Officer that she and Broecker explicitly encourage and welcome all students' voices in class. She added that the purpose of the activity, however, was not to encourage political debate but “to describe for students medical and surgical abortion.” Abortion is performed so frequently in the United States that, she explained, all medical students must learn about the procedure if only to be prepared to answer patients' questions accurately and nonjudgmentally. “While Jane and I have always entertained all students' questions, comments, and concerns during this class, debating with another colleague whether abortion should be permitted at all has never been, and I strongly feel should never be, part of the activity." The bias investigation went no further.

Wolf and Broecker learn the most from the emails written by students who remain confused by abortion misinformation and controversy, even after completing the class. Public discussion in the United States has been so strident and ubiquitous that students' ongoing confusion is both understandable and disquieting. One student sent Broecker an email asking if a Catholic obstetrician can be forced to perform an abortion. "My understanding is that there is a requirement to provide full information about abortive services, but I am unclear on the physical action of abortion services." The student asked, "if I were to provide full information and even a referral to someone that would provide the abortion, would I be legally covered despite refusing to physically be the one performing the abortion?" Broecker assured the student that not only patients, but also physicians, have autonomy and that physicians are not required to provide any treatment they are not fully trained to administer, nor are they required to perform a procedure that makes them uncomfortable or that they believe will not benefit the patient. They must, however, refer a patient who has a legitimate medical request to another physician able to provide the requested care.

Another student sent an email to Broecker wondering about the availability of abortion in Ohio. The Ohio state legislature has passed so many laws in defiance of *Roe v. Wade* and *Planned Parenthood v. Casey* that it is unsurprising that medical students studying at a public university in Ohio are not sure if abortion is even offered in their state, despite access to abortion being codified in US law for almost 50 years. The student wrote, "Under what circumstances is abortion allowed in Ohio?" Broecker assured the student that, despite Ohio's periodic passage of unconstitutional laws, most, although not all, of those laws have been blocked by the federal courts. The laws that have not been blocked include a ban on abortion beginning at 20 weeks that is still in force in Ohio, and a partial ban on dilation and evacuation, the most common method of abortion in the second trimester. That federal courts can be counted on to continue blocking laws restricting women's access to abortion has become even less certain since the US Supreme Court refused to halt enforcement of the Texas law banning abortion after 6 weeks.

Another confused student wrote to Wolf about laws restricting women's reproductive rights in general. "I keep seeing new opinions on the heated arguments around the new laws and MANY women have come forward, saying it was 'against the law' for them to get their tubes tied without the husband's permission, or before they had children, or if they were too young…. Where is this 'law' coming from?" Wolf responded with a history lesson. "Keep in mind that before 1965, states could (and some did) pass laws forbidding married couples to purchase or use birth control." Indeed, women's rights were restricted in virtually every societal realm before the last quarter of the 20th century. "Before 1974 in the US, women could only get a credit card if they had a male co-signer. So, it shouldn't come as a surprise that women could not make medical decisions on their own either, especially decisions that might affect their husband's ability to have a biological child." However, Wolf observed the scenario that the student described had been illegal for more than a half century. If a patient does encounter a provider today who refuses to perform a tubal ligation without a husband's consent, that would be a question of provider preference, or hospital or practice group policy, rather than legality.

The student sent a follow-up question after receiving Wolf's response. "Just to clarify: If I become an OBGyn, would I have the ability, based on my own opinions, to say 'No, you are too young to have your tubes tied, because you have not had children yet and you might change your mind?'" Wolf confirmed for the student that physicians can refuse to provide a treatment they fear will not benefit, or would be harmful to, the patient.

MAKING MEDICAL DECISIONS BASED ON PATIENTS' VALUES

Throughout the activity, Wolf and Broecker remind medical students that they should learn to view abortion not as a binary right/wrong, good/evil medical procedure but as a medical procedure that women in the United States have a right to request and to access. Part of medical students' preparation for becoming physicians is to learn how to understand—and value—their patients' perspectives about medical treatments and to support patients' medical decision-making.

As they learn how best to care for patients, medical students will invariably find themselves in new, uncomfortable situations. Patients seeking or contemplating an abortion arguably represent some of the most difficult clinical presentations for physicians. Medical students should be taught that patients' medical decisions regarding reproduction are deeply personal and should be respected as such. Medical school instructors, therefore, are obligated to prepare medical students to be patient-centered in their approach to patients, no matter the situation.

The controversy associated with abortion procedures is not unique to the United States. Many cultures and societies regard abortion as controversial. Women nonetheless have sought abortions in all countries and cultures, during all eras. Thus abortion should be used in medical school classrooms around the world to teach students how to approach patients without bias and judgment; to learn about patients' unique reproductive hopes, needs, and circumstances; and to help patients make medical decisions in light of patients' reproductive goals and values. Students should leave medical school with the knowledge that they will be practicing medicine within a specific context. Teaching the unique histories and laws, along with the relevant biological and clinical sciences, that shape access to abortion around the world not only serves to teach medical students about their obligation to respect their patients' goals and values but also demonstrates that history and the law affect the environment in which medical students will eventually practice medicine—wherever they practice.

CONFLICT OF INTERESTS

The authors declare no conflict of interests.

ETHICS STATEMENT

As the research contained in this manuscript did not involve human subjects, no IRB approval was necessary.

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COMMENTARY

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Nigeria's financing of health care during the COVID-19 pandemic: Challenges and recommendations

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Abstract

An analysis of the financing of Nigeria's health-care system in response to coronavirus disease 2019 (COVID-19) pandemic was conducted. Nigeria projected that it would need US$330 million to control its COVID-19 pandemic. However, it raised more than US $560.52 million, of which more than 90% came from the private sector and the donor/philanthropist community. The pooled COVID-19 fund is mainly being expended on temporary public health and clinical care measures, with little invested to strengthen the health system beyond the pandemic. The poor turn-around time for COVID-19 test results and the stigma associated with the disease results in most persons with mild to moderate symptoms seeking care from alternatives to the health-care institutions designated for COVID-19 health care. The huge out-of-pocket expenses, and the inability of most Nigerians to earn money because of measures instituted to contain the pandemic, will likely cause many Nigerians to become economically impoverished by the COVID-19 pandemic. COVID-19-related commodity procurement was least responsive to the needs of those most in need of care and support. The government needs to institute several fiscal policies. Immediate response to ease the financial impact of COVID-19 require inclusion of COVID-19 management in health insurance packages and an increase in domestic government health spending.

KEYWORDS

COVID-19, health-care financing, health policy, Nigeria, public health emergency, universal health coverage

Key points

- Nigeria projected that it would need US$330 million to control its COVID-19 pandemic.
- However, it raised more than US$560.52 million, of which more than 90% came from the private sector and the donor/philanthropist community.
- The pooled COVID-19 fund is mainly being expended on temporary public health and clinical care measures, with little invested to strengthen the health system beyond the pandemic.
- Immediate response to ease the financial impact of COVID-19 require inclusion of COVID-19 management in health insurance packages and an increase in domestic government health spending.

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an ongoing global public health crisis resulting from the outbreak of the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, which began in Wuhan, Hubei Province, China, in December 2019. It is an international public health emergency (Wilder-Smith et al., 2020; World Health Organization, 2020a). As of September 1, 2020, there were 25,590,668 confirmed COVID-19 cases, with 852,985 deaths, globally (Centre for Systems Science and Engineering, 2020). Nigeria recorded its first COVID-19 case on February 27, 2020 and has 54,247 confirmed COVID-19 cases and 1023 deaths as of September 1, 2020 (Nigeria Centre for Disease Control, 2020).

Countries, including Nigeria have adopted several public health measures, based on World Health Organization recommendation, to control the spread of COVID-19. The measures include individual practices, such as regular hand washing, wearing of face masks in public places, and physical/social distancing. Countries have also instituted public health measures, such as widespread testing, isolation of patients, contact tracing, and quarantine. Community-wide containment includes partial or complete lockdowns of the economy, restrictions on travel and movement, and banning or limiting public gatherings (Andam et al., 2020; Wilder-Smith et al., 2020).

The severity of the COVID-19 outbreak in Nigeria in terms of the number of people infected is less than that reported in Europe and North America and South Africa. A few reasons for these differences have been proffered, none of which include an effective health-systems response (Ugwu et al., 2020).

Before the COVID-19 outbreak, Nigeria's response to disease outbreaks was rated poorly by the 2019 Global Health Security Index and World Health Organization's Joint External Evaluation of International Health Regulations core capacities (Center for Health Security, 2019; Kandel et al., 2019; World Health Organization, 2017). The country's response to the COVID-19 pandemic has been undermined by its poor health system, which is the result of chronic low government spending on health, delay in government responses to the virus, low rates of COVID-19 testing, and poor transparency and accountability. The country's surveillance system and contact tracing may be effective for dealing with small pockets of outbreaks but is less effective for dealing with a disease of a magnitude as large as that of COVID-19.

One of the reasons for the poor disease surveillance system is the low health-sector budgetary allocation. This allocation as a percentage of the total federal budget was less than 5% in 2020 (BudgIT, 2020), a health investment that is below the minimum 15% annual health budget recommended by the African Heads of State (United Nations, 2001). In 2020, the revised budget allocation to the Basic Health Care Provision Fund was reduced by more than 40% from N44.4 billion (US$116.84 million) to N25.5 billion (US$67.11 million) (Budget Office of the Federation, 2020).

Delay in public-health response also contributed to the poor response. While the World Health Organization declared COVID-19 a Public Health Emergency of International Concern on January 30, 2020 (Wilder-Smith et al., 2020), the Presidential Task Force on COVID-19 was not set up until March 7, 2020 (Andam et al., 2020); the closure of land and air borders was delayed until March 25, 2020 (Andam et al., 2020), and the lockdown of states was initially limited to the three states, with evidence of rapidly advancing community transmission of COVID-19 (Lagos, Ogun, and the Federal Capital Territory) on March 28, 2020 (Andam et al., 2020). COVID-19 testing was initially limited to persons with severe symptoms, an ineffective containment approach for a disease in which 80% of those infected are asymptomatic yet with a high transmission rate of 3.5 persons to one infected person for persons who are both asymptomatic and symptomatic (World Health Organization, 2020b). As of September 1, 2020, the country has only tested 405,916 of its 206 million population (Centre for Systems Science and Engineering, 2020; World Bank, 2020a).

The COVID-19 response has also been bedeviled by corruption in the Nigerian health sector (Folorunsho-Francis, 2020), which has undermined efforts to cushion the effect of COVID-19 (Dixit et al., 2020). This article examines the funding of the national health-care response during the COVID-19 pandemic in Nigeria, and it makes recommendations for increased government health spending to strengthen local health security and universal health coverage. Adequate health financing strengthens the delivery of primary health-care services in general, which then is capacitated to respond to the needs of the country during health emergencies like that of the COVID-19 pandemic. The analysis of health care financing during the COVID-19 pandemic in Nigeria was based on the key indicators of health-care financing: revenue collection, pooling, and purchasing (McIntyre, 2007).

REVENUE COLLECTION FOR THE COVID-19 PANDEMIC CONTROL IN NIGERIA

Before the COVID-19 pandemic, the sources of financing for the Nigerian health-care system were general tax revenue, out-of-pocket payments, social health insurance, private voluntary health insurance, community-based health insurance, and donor funding. Yet, the COVID-19 pandemic required more funding to ensure a comprehensive public health and clinical care response, as well as to bolster the economy and ensure value for money while minimizing fraud and corruption (Gurazada et al., 2020). The federal government projected that US$330 million would be needed to procure medical equipment, personal protective equipment, and medicines for the control of the COVID-19 pandemic in Nigeria (Dixit et al., 2020).

In response to this critical need, funds were collected to control the COVID-19 outbreak at the national and subnational levels in Nigeria, most of which were from external sources with limited domestic funding. Sources of funds were the Nigerian government, which approved US$2.3 million for the management of the COVID-1 pandemic as its fiscal stimulus package in April 2020 (Adejumo, 2020; Ibrahim & Olasinde, 2020); it provided an N10 billion (US$26.32 million) grant to Lagos State (Omilana, 2020) and N6.5 billion (US$17.11 million) emergency intervention fund to the Nigeria Centre for Disease Control (Iroanusi, 2020) for COVID-19 response.

The private sector also contributed to the COVID-19 response in Nigeria through the Private sector Coalition against COVID-19 (CACOVID), launched on March 26, 2020. The Coalition donated over US$55.7 million as of April 6, 2020. Dangote and the Central Bank donated US$5.1 million each (African Business Magazine, 2020) for the provision of medical facilities and equipment (UNDP, 2020a). State governments received several cash donations from philanthropists (UNICEF, 2020). The Dangote Foundation built and equipped a laboratory in a public health institution in Kano to ramp up testing (Dangote, 2020).

A basket fund was set up by the United Nations system in Nigeria in collaboration with the federal government to mobilize resources and strengthen the COVID-19 response (World Bank, 2020b). The basket fund supports the rapid implementation of the country's National COVID-19 Multi-sectoral Pandemic Response Plan (United Nation Nigeria, 2020). The United Nations had mobilized US$61.3 million into the basket fund as of June 20, 2020. Donations were made by other multilateral and bilateral donors as well as by private donors, foundations, and philanthropists (CACOVID, 2020). The World Bank approved US$114.28 million financing to boost state-level COVID-19 response (CovidFundTracka, 2020), and the Global Fund for HIV, Malaria, and Tuberculosis reprogrammed US$5.1 million for the country's COVID-19 response, with the focus on the purchase of gene-expert testing machines.

The United Nations system in Nigeria collected most of the donor funds, and the funds were allocated by a board consisting of the Honourable Ministers from relevant Federal Ministries and representatives from contributing donors, the Nigeria Centre for Disease Control, and the United Nations in Nigeria (United Nations, 2020). Also, the government instituted mechanisms to ensure transparency and accountability of COVID-19-related expenditures by domiciling COVID-19 funds in the Treasury Single Account at the Central Bank of Nigeria, with sub-account domiciled in Zenith Bank, Access Bank, Guarantee Trust Bank, United Bank for Africa, and First Bank (Adejumo, 2020). The Treasury Single Account enables the government to have an overview of cash available at any time, manage cash, and ensure liquidity for COVID-19 operations, thereby ensuring efficient and sound cash management.

POOLING OF COVID-19 FINANCIAL RESOURCES

Pooling of funds refers to the accumulation of prepaid health-care revenues on behalf of a population (Kutzin, 2001) for the purpose of spreading the risk of incurring unexpected health-care costs across the population so that no individual carries the full financial burden (World Health Organization, 2020c). It is estimated that the pooled resources from the COVID-19 revenue-collection process were N213 billion (US$560.52 million) as of 13 July 2020 (Folorunsho-Francis, 2020). More than 90% of these funds came from donors, whereas domestic resources accounted for less than 10% of the pooled resources.

The funds for the COVID-19 response were largely used for procurement of medical equipment, personal protective equipment, and commodities; purchase of test kits; and covering the cost of health care for individuals who test positive for COVID-19 or have severe COVID-19 infection (BudgIT, 2021).

Citizens are not required to pay for COVID-19 testing and care provided in public-health institutions during the first wave of the pandemic (Health wise, 2020). The health system's lack of readiness for a pandemic made it necessary for the country to use revenue it had generated for the construction of temporary structures to serve as isolation centers in almost all of the 36 States and the Federal Capital Territory in Nigeria.

Despite the sizable pool of funds, it was insufficient to cover the COVID-19-related costs. The cost of managing COVID-19 treatment per patient in isolation centers in Nigeria ranges from N100,000 (US$263.16) per day for mild-to-moderate cases to N1,000,000 (US $2631.58) per day for severe cases (Adejoro, 2020a; Muanya, 2020). The average cost for a COVID-19 test in public health laboratories ranged from N40,000 (US$105.26) to N50,000 (US$131.58) and from N60,400 (US$158.95) to N100,400 (US$264.21) in accredited private laboratories (Adejoro, 2020b).

Patients can receive COVID-19-related care either in designated isolation centers or in private hospitals. Isolation centers are few, and the turn-around time for COVID-19 tests results is up to 2 weeks (All Africa, 2020). These issues, coupled with the policy of testing only sick persons and the stigma associated with the disease (Healthnews.ng, 2020), meant that many people sought private care for mild-to-moderate and, sometimes, even severe COVID-19 infections (Sahara Reporters, 2020). The cost of such care is huge for the many Nigerians who lack insurance coverage—less than 5% of the population has health insurance (Aregbeshola & Khan, 2018), and the national health insurance package does not include funding for COVID-19 management. Moreover, a large proportion of the population (102.1 million people) lives in extreme poverty (World Data Lab, 2020). The COVID-19 pandemic made it impossible for the working poor—the over 90% working in the informal sector who earn enough for daily living (International Labour Office, 2018)—to cover the unexpected cost of testing and treatment incurred visiting private facilities. It is estimated that 27 million Nigerians were pushed into poverty because of the COVID-19 outbreak (Andam et al., 2020).

PURCHASING FOR COVID-19 RESPONSE

Purchasing is key to providing health care services to both COVID-19 and non-COVID-19 patients. The pooled resources for the COVID-19 response were largely expended to strengthen service delivery to patients with COVID-19 to the exclusion of the private health-care sector and the management of non-COVID-19-related diseases. The capacities of laboratories were increased to support testing for COVID-19. As of September 2, 2020, 54 laboratories were approved to conduct COVID-19 diagnostic testing; these few laboratories serve the teeming Nigeria population spread across 774 local government areas.

Pre-determined budgets, salaries, and medical supplies were the provider payment mechanisms used to transfer pooled funds from governments to public health-care providers for the purchase of COVID-19 related health-care services. Very few COVID-19 related purchases were made through contractual and payment arrangements between the government and providers (Mbau et al., 2020). This passive purchasing approach prevented efficient, equitable, and quality financial responsiveness of the Nigerian health-care system, which otherwise could have been achieved through strategic purchasing, with a determination of which health-care services should be purchased, from what health care providers, and at what cost (Mbau et al., 2020). Also, the use of a historical budgeting approach, rather than a needs-based resource allocation mechanism, taking into account geographic disparities in health care resources, limited the effective use of available resources for the COVID-19 response (McIntyre, 2007).

DISCUSSION

The federal government of Nigeria generated more than 100% of its anticipated budget for responding to the COVID-19 pandemic from the private sector and donor/philanthropist community. These funds constituted most of the funding for the COVID-19 public health and clinical-care response. The poor preparedness of the Nigeria health sector for emergency response, least of all for a disease of the magnitude of COVID-19, necessitated using most of the pooled resources for building temporary structures, such as isolation centers, and providing clinical care. This expenditure has done little to strengthen the general health system. The poor national COVID-19 testing coverage makes it difficult to accurately estimate the number of persons who have COVID-19 and to estimate the number who paid out-of-pocket for COVID-19 care in institutions, not in the public and private health-care centers designated by the government for COVID-19-patient care. The combination of the National Health Insurance Scheme not providing coverage for COVID-19-related care, the huge out-of-pocket expenses patients incurred for health care, and workers' loss of income because of the government-mandated lockdown measures to control the pandemic may have impoverished countless Nigerians. There is sad, no accurate estimation of the possible impact of the pandemic on a household income of Nigerians.

The government must institute measures to prevent the worsening of the current health crisis in Nigeria, which may be exacerbated by large numbers of people needing chronic medical care as a result of COVID-19 infection. The need for hospital care likely will increase due to the deteriorating health of many chronically ill persons who received insufficient attention to their health needs at the height of the pandemic (Amu et al., 2020).

It is therefore imperative for governments at the national and subnational levels in Nigeria to increase their investment in the health of the Nigerian people. The nation has huge untapped mechanisms for making this investment, such as public-private health financing partnerships (UNDP, 2020b) and taxing diaspora remittances. Nigeria has one of the highest remittance rates as a share of gross domestic product, and remittance is three times higher than all Official Development Assistance to Nigeria (World Bank, 2019). These funds, however, are used more for education and infrastructure development than for the health sector (Daramy, 2016).

Monitoring, control, and enforcement of punitive measures for corruption, such as cross-border tax fraud, evasion, and avoidance, could also result in savings that could be invested in the health system. Illicit outflows from Nigeria to foreign countries are a huge source of lost revenue—revenue that could be used on financing health responses. Money lost through illicit trade, mis-invoicing, and the lost taxes could be recouped. Transparent financial reporting could help create a taxing system that would track illicit flows and create more income, which could be channeled to strengthening health systems (Kar & Spanjers, 2015; Kar, 2011).

Effective collection of corporate and business taxes on items such as profits from natural resources (including oil); mobile phone use; luxury goods (such as cars, yachts, and private jets); unhealthful foods; tourism and imported goods (such as salt, plastics, cereals, machinery, frozen fish, vehicles, iron, and steel); and special levies on large and profitable companies, currency exchanges, financial transaction flows, diaspora bonds and luxury air travel (Aregbeshola, 2018; Taskforce on innovative international financing for health systems, 2009; World Health Organization, 2010), could provide the needed investment in the health of the Nigerian people. Governments at the national and subnational levels should take the lead in financing the response to the COVID-19 outbreak. An effective response to the COVID-19 outbreak will require investment beyond the current budgetary allocation to health.

Universal Health Coverage, measured either by the World Health Organization coverage index or by the Global Burden of Disease effective coverage index, indicates that coverage in Nigeria is less than 45% (GBD, 2019; GBD Universal Health Coverage Collaborators, 2019; World Bank, 2017). The poor health coverage hinders effective response to the COVID-19 outbreak and disproportionately exposes the poor, vulnerable, and informal-sector populations to the catastrophic, impoverishing effects of high out-of-pocket expenses (Aregbeshola, 2018). It is difficult to achieve Universal Health Coverage through contributory insurance schemes in countries with a large informal sector (Aregbeshola, 2018). In addition, social health insurance takes many years before universal health coverage can be achieved (Akazili, 2010; Aregbeshola, 2018; McIntyre, 2007). The tool left open to Nigeria to help it achieve Universal Health Coverage by 2030 is the tax-based health financing system. In the short term, the Nigerian government should spend at least 5% of its gross domestic product on health to improve financial protection for the most vulnerable populations, increase coverage of basic health care services, and reduce the widening social disparity in health access. In addition, since COVID-19 is likely to be a disease we will live with for the long term (AFP, 2020), health insurance packages need to include support for COVID-19 management.

CONCLUSION

Longstanding poor health care financing in Nigeria poses a major challenge to the COVID-19 pandemic response. The many years of insufficient government investment in health have rendered the health care system unprepared to meet the demands that COVID-19 has placed on it. Thus, even the large sums collected for the emergency response are inadequate and having been used for temporary infrastructure, are unavailable for long-term investment in the nation's health care. Poor access to insurance coverage has challenged the poor and vulnerable, who need care for COVID-19 infections and, at the same time, care for other medical problems during the pandemic. The process for COVID-19-related commodity procurement was least responsive to the needs of those most in need of care and support. Multiple unexplored mechanisms are available for funding health care in Nigeria to ensure universal coverage and strengthen the health system. However, for the short-term and to enhance the COVID-19 pandemic response, domestic government spending on health as a percentage of gross domestic product must be increased.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

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BOOK REVIEW

Tania Jenkins. Doctors' orders: The making of status hierarchies in an elite profession

The processes of status separation that assure rapid and legitimized stratification in modern American society are no secret. It is often forgotten that these same social forces exist even within highly prestigious occupational groups like physicians.

As a student of health policy who finds himself increasingly drawn to the field of medical sociology, I was excited at the prospect of reading and reviewing Tania Jenkins' *Doctors' Orders: The Making of Status Hierarchies in an Elite Profession*. Noting a stark trend—the segregation of residency programs based on medical pedigree despite the lack of any formal rules or regulations dictating such separation—Jenkins, who is Assistant Professor of Sociology at the University of North Carolina-Chapel Hill, conducts a thorough and fascinating ethnography of two contrasting internal medicine programs.

At Stonewood Hospital (a pseudonym for one of her study sites, both of which are located in the Northeastern U.S.), residents are overwhelmingly U.S. graduates of allopathic medical schools (hereafter USMDs), train with highly complex patients, and find themselves supported from start to finish. At Legacy Hospital (also a pseudonym), comprised mostly of graduates from osteopathic and international schools (hereafter non-USMDs), Jenkins finds an entirely different training environment which largely deprives residents of the experiences they need to find success within the profession. Unsurprisingly, those from Stonewood have more success at matching into subspecialties of their choice. The sorting of USMDs and non-USMDs into programs of disparate educational quality and the subsequent disparate outcomes could ostensibly be explained by a narrative where USMDs are objectively better doctors, thus deserving of the best opportunities within the profession. Jenkins' powerful qualitative data, however, suggest that this justification is wielded disingenuously by the professional establishment, masking the structural factors that stymie success for non-USMDs while all but guaranteeing elite ascension for USMDs.

At the core of Jenkins' findings is what she refers to as a “self-fulfilling prophecy” (p. 173). First, non-USMDs are regarded as lower-quality candidates for the field of medicine, a stigmatization process undergirded by both classist and nativist sentiments. Admission to an allopathic medical school is highly dependent on a stable and supportive upbringing so that one is set up for “playing the game” (p. 39). Despite these underlying structural barriers for those without early access to resources, individuals attending nonallopathic schools were assumed to be intellectually inferior. However, prosperous upbringing is not the only important driver: many international medical graduates also had positive early life experiences. These candidates experienced stigmatization not from a lack of early social support to grant them advantages, but rather from powerful societal status beliefs dictating that foreign people, even those intending to work in a highly prestigious occupation, are of less worth than U.S.-born individuals, usually justified with an appeal to cultural fit. Thus, non-USMDs immediately experienced status subordination for reasons outside of their control and were then denied opportunities for it. By losing access to better educational experiences like those one would find at the USMD-heavy Stonewood program, non-USMDs suffered worse outcomes in terms of test scores and fellowship placement, creating the appearance that they are intrinsically inferior doctors rather than the undeserving victims of educational disparity.

Finally, and most importantly, these worse outcomes are used as evidence to justify the original stigmatization of non-USMDs, thus completing the prophecy. Though Jenkins does not refer to it this way, the self-fulfilling prophecy can be thought of as a reinforcing feedback loop: more stigmatization begets fewer opportunities, worse outcomes, more 'evidence' that the stigma is justified, and so on.

In light of these highly unfair social phenomena, one is left with the question of how this status hierarchy sustains itself. After all, non-USMDs are needed to fill the gaps in the U.S. healthcare system, which should give them some leverage to reject their own explicit subordination by the profession. It is here that Jenkins' ability to vividly contextualize complex sociological concepts shines brightest, as she exposes the façade of meritocracy that pervades every stage of medical education. Students of both residency programs—but particularly those at Legacy—were told repeatedly that success was in their own hands. With enough studying, research, and dedication, any resident could ascend to the medical elite.

Of course, such an outlook completely ignores the structural barriers that held most non-USMDs back, including an overall lack of program support. Despite what appears to the readers as an obviously unlevel playing field, Jenkins finds that non-USMD residents repeatedly believed that competition for fellowship positions was largely meritocratic, sometimes even contending that USMDs were inherently more deserving of elite positions. Jenkins argues that securing the consent of the subordinated is key to legitimizing an inequitable status hierarchy, while it also staves off the potential for a revolt from the profession's rank-and-file.

In many ways, the social processes played out within this single medical specialty mirror the dynamics of modern social stratification. I am reminded of Jennifer Silva's project studying working-class millennials, *Coming Up Short* (Silva, 2015). Silva finds that these young adults fall ill to the pitfalls of a neoliberal ideology, believing that they alone are to blame for their inability to find success and happiness despite the existence of pervasive structural barriers designed to obstruct upward mobility. Here, just as in Jenkin's ethnographic analysis, the illusion of ascension via hard work and meritorious achievement redirects pressure away from the dominant groups that are directly responsible for the subordination of others.

On the whole, *World Medical & Health Policy*'s global readership will find *Doctors' Orders* to be an evocative (if not frightening) demonstration of how the construction of social hierarchies in medicine impede the optimal training and allocation of physicians in the U.S. Jenkins's skill at establishing these key sociological concepts and then demonstrating those forces across graduate residency programs with highly convincing ethnographic data is far more difficult to master than it looks. As a scholar who aspires to understand the relationship between professional actions and emergent qualities of the healthcare system, I admittedly yearned for a more in-depth exploration of how the profession's equating of hyperspecialization with esteemed social status impacts metrics of access and spending in the U.S. Jenkins does mention that pushing non-USMDs to fill comparatively undesirable primary care positions for underserved populations may have negative consequences given their lower-quality training, however, there could have been more discussion on the role that specialty maldistribution has on excess health spending in the country relative to other comparable nations. Nonetheless, Jenkin's work offers major insight into how we can approach modern medical education and eventually disrupt the self-fulfilling prophecy.

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BOOK REVIEW

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Cuban health care: The ongoing revolution

Don Fitz

New York: Monthly Review Press, 2020. ISBN: 978-158367-860-2.

Most readers are likely aware that the Cuban health care system is widely praised for its impressive health outcomes. Yet, beyond the commonly cited successes—low infant mortality rate, high life expectancy, low mother-to-child HIV transmission rates, successes in the development of vaccines and other drugs—the average reader likely also knows very little about the actual inner workings of Cuban health care. It was with this in mind that I eagerly cracked Don Fitz's *Cuban Health Care: The Ongoing Revolution*.

I have learned much about Cuban health care over the years, not only through reading, but because I have had the privilege of visiting Cuba on several occasions, accompanying health professions students to learn first-hand about Cuban health care. One is immediately impressed by the passion Cubans have for health care itself, as well as the sensible design of the Cuban health care system. In Cuba, health care is a point of national pride. Cuba's decades-long work in medical internationalism remains a model of humanitarianism.

Fitz—a St. Louis-based psychologist and former Green Party candidate for Missouri governor—does his due diligence in describing what makes Cuban health care special. *Consultorios* (neighborhood medical offices) staffed by physician-nurse teams form the foundation of the system, with extremely low (1 per 1500) patient-to-physician ratios that ensure direct access to medical care, most of which is preventive. *Consultorios* are designed to address the vast majority of Cubans' medical needs and serve as a first line response to promote health and keep patients out of hospitals. Crucially, physician–nurse teams are expected to live in close proximity to the *consultorios*—and often live above them--which creates a solid foundation for Cuba's model of community medicine. If patients need more complicated care, they are moved through the system to *policl ínicos* (polyclinics) or *hospitals*. As Fitz explains, the design of this system is key to the system's success, since in low resource nations such as Cuba, prevention is critical. There simply aren't enough resources to deal with widespread acute needs.

It's for this same reason that, as Fitz deftly explains, Cuba has invested heavily in vaccination and prevention since the 1959 Revolution. These investments have allowed the nation to eradicate diseases (polio, malaria, diphtheria) that had ravaged the nation in the prerevolutionary era. As Fitz argues in a postscript written to address Cuba's coronavirus disease 2019 (COVID-19) response, this emphasis on prevention and thoughtful system design positioned Cuba well to respond aggressively to the pandemic (Cuban researchers are working furiously to develop a vaccine of their own, which would be the first COVID-19 vaccine to be produced by a Latin American country). These commitments to vaccine and pharmaceutical development, absent the profit-seeking that undermines such development in market-driven systems, has allowed Cuba to develop a robust national biomedical and biotechnological operation that focuses on prevention and treatment. The most well-known of these developments are Racotumomab, a Cuban-developed treatment for advanced lung cancer, and Heberprot B, a diabetes medication that Cubans report reducing diabetic amputations by 80%. As Cubans will tell you, the potential Cuban biomedical researchers believe their drugs have to improve life for patients worldwide is matched only by their frustration that they cannot make them more widely available, a limitation that they credit largely to the U.S.-imposed embargo of Cuban products and technologies.

No book on Cuban health care would be complete, of course, without attention to Cuba's impressive efforts in medical internationalism, which date back to the period immediately after the Revolution, and include work in nations in Africa, South Asia, and Latin America. Fitz—whose daughter was at the time the book was written a student at the Latin American School of Medicine (ELAM)—describes, with a high level of detail, the reach that Cuba's funding of medical education for students from around the world has had, with a specific focus on training physicians committed to social justice and willing to practice in areas with physician shortages. ELAM, a massive medical school of about 10,000 students, provides a helpful juxtaposition to medical education in wealthy nations. Like Cuban medicine itself, an ELAM education is not intended to be–and is in fact consciously designed not to be—a process of professional socialization connected to class mobility. Being a physician, in the Cuban model, is a service to one's country and even the world.

For all its merits, however, *Cuban Health Care* also disappoints. I fear that Fitz's decision to write a book that doubles as a treatise on the shortcomings of the American health care system undercut its ability to persuade a wider audience that Cuba has much to teach others about health care. In a way, the book's final chapter, "Medicine in Cuba and the United States" would have been a more apt title for the book itself. Just as frustrating, as he carries out this political project, is Fitz's one dimensional portrayal of the U.S. health care system, as though the American for-profit insurance industry or big money non-profit hospital systems are not also in conversation with community health centers, Medicaid, and free clinics, not to mention the increased movement in the U.S. to address pharmaceutical access and pricing, or establish a national health care system. To be clear, a book with a title that promises only to enlighten readers about health care in Cuba has no prima facie responsibility to provide a balanced, nuanced scholarly account of U.S. health care. But the way Fitz has written the book, which uses the U.S. as a persistent contrast, will likely raise the issue for many readers.

Fitz's intense focus on Cuban internationalism has also led to tradeoffs that will likely leave readers with questions. While the Cuban philosophy of *Medicina General Integral* that guides Cuba's model of community medicine is impressive, and could provide a roadmap for nations around the world—especially underdeveloped nations—the book leaves other questions unanswered. For instance, we don't get anything like a detailed picture of the pharmaceutical landscape in Cuba. In addition, though Fitz notes that the U.S. embargo has made it difficult to acquire certain imaging technologies and other equipment, it would be nice to know exactly what the state of Cuban medical technology is, regardless of the extent to which the emphasis on physical exams and patient care has compensated for these shortages.

Finally, while the Revolutionary promise to provide parity between Cuba's urban centers and rural regions is admirable, has it been achieved? (On that point I can report that Cubans do express frustration that it has not, and are eager to improve it.) And to be clear, lest I be lumped in as one of what Fitz calls an "Americans fishing for something to criticize" (222), I wanted *Cuban Health Care* to offer more details about how the system functions precisely because a less polemical presentation would be likely to persuade more readers—readers not already predisposed to think highly or even much of anything about Cuba—that Cuban health care offers them a model of community and preventive medicine. It may well be that Fitz's assumption was that his audience would mainly consist of American progressives like himself who already support sweeping changes to American health care, but who need a model to inform their thinking about what this change could look like. But those who are not already predisposed to such thinking will need a more balanced analysis.

When I first started studying Cuba, and subsequently visiting Cuba to learn about its health care system, it became clear to me that health care in Cuba—like health care in my country, the U.S.—was political. The Castros, Che Guevera, and other revolutionaries made the development of an equitable health care system a priority because doing so was required of them as champions of human rights, but the creation of a strong health care system was also an expression of their political values, just as every health care system is. It bodes well for Cuba that no matter what changes await, an embrace of equity and investments in prevention and public health are likely to remain cultural mainstays of Cuban politics and policymaking. Fitz does an admirable job showing that a commitment to equity and justice requires valuing the power of preventive health care. I just wish that the presentation didn't miss an opportunity to provide a more nuanced exploration of the Cuban health care system itself, from which we all could have learned a great deal.

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BOOK REVIEW

How to treat people: A nurse's notes

Molly Case

New York, NY: W. W. Norton & Company, Inc., 2019. pp. 277. ISBN: 9781324003465.

In *How to Treat People: A Nurse*'*s Notes*, British author Molly Case presents an unusual, yet intriguing blend of textbook nursing fundamentals and historical snippets with her personal and professional experiences in conveying the art and science of nursing. The book is divided into sections according to the ABCDE (Airway Breathing Circulation Disability Exposure) systematic approach to assessment of patients that is commonly used in the United Kingdom. Within these sections, the author offers a fascinating amalgamation of anatomy, physiology, pathophysiology, history, linguistics, and mythology as they correspond to different illnesses, clinical conditions, and the associated nursing care procedures. She explains the etymology of various medical terms and the reasoning behind common medical and nursing procedures. Although packed full of information, the book flows in short, easy-to-read chapters within the sections.

Though not designed as a classic textbook, it is rich with facts, trivia, and personal musings. In addition to clinical lessons, the reader is presented with the origins of medical terms and concepts from ancient peoples, and examples of how modern medical practice was influenced by historical events. The derivation of familiar names such as diabetes mellitus are explained from their Greek and Latin roots. Wound care techniques from ancient Egyptians and Greeks, cardiac and pulmonary physiology from Egyptian medical papyrus writings, the vital life force of the Mayan breath soul, the association of the heart with love by the Romans and other constructs provide contextual background to a particular disease or patient's infirmity. The inclusion of noteworthy influencing events from modern history, such as the discovery of sweat testing for cystic fibrosis as a result of observations during an extreme heatwave in New York in 1948, offers further interest and understanding of the ailment of focus.

Within each ABCDE section, the author introduces patients, their stories, and the nursing care she provides and enhances these topics with assorted factoids and curiosities. Case shares her personal story of chronic illness and suffering as a child, firsthand experiences as a surgical patient, family medical emergencies and other influencing factors on her nursing career. Childhood memories and reflections from this young nurse's student training and professional practice are sprinkled in with the present. The style is effective in conveying voluminous bits of knowledge around a central theme, yet is sometimes choppy with such diverse material packed into each section. The language is beautifully expressive describing a laugh as “rainwater on tin, cold north-east rain trickling and tinkling down the copper wings of an angel” and oft times poetic when describing medical situations “his shoulders heaved, his breath was ragged and clipped short, a trapped wing flapping against a cage.” The theme of the respective section is illuminated by the patients' experiences while the recounting of the author's own illness and that of her father is carried throughout the entire book.

The patient-focused narrative provides intimate insight into the emotional encounters inherent in the nursing profession. Nurse Case portrays the care she gives her patients with tender detail and relates their distress to her own suffering. She humanizes her patients, not merely relegating them to labels of their disease. Case addresses pain, anguish, and death with empathy for the individuals and families affected. Her portrayal of patients beyond their clinical condition includes their connection to family and the community. The social impact of illness and hospitalization is exemplified by the turmoil of the wife of a once vibrant young man who is no longer responsive, the anguish of the spouse who witnesses the rapid deterioration of her loved one, and the young woman with medical as well as emotional wounds. Case also relates the embarrassment and situational humor over the struggle to remove an intimately placed piercing and the joy of a healthy new life brought into the world. It is a poignant reminder of the fragility of life and the suddenness in which circumstances can change.

Case's memoir offers broad appeal to nurses of all backgrounds and practice areas. Presenting a twist in the usual medical-nursing genre, the beautiful prose can be appreciated by a diverse readership. Although she was trained and works in England, many nurses will identify with the author's predicaments and experiences. Fellow nurses and those interested in the medical or nursing professions will enjoy this book discovering the fascinating roots of common medical practices and terminology.

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BOOK REVIEW

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Shaken brain: The science, care, and treatment of concussion

Elisabeth Sandel

Harvard University Press, 2020. pp. 368. Hardcover. ISBN: 9780674987418.

Concussions are ubiquitous through history: Goliath the Giant being struck down with a pebble to the head, a modern pugilist causing enough brain trauma to win by knockout, or a child falling off a bicycle. Unfortunately, despite their prevalence, concussions have long been a difficult and often misunderstood topic.

Elisabeth Sandel's *Shaken Brain: The Science, Care, and Treatment of Concussion* offers education about concussions with “accessible, accurate, and up-to-date information.” Sandel explains, “Whether you have personally suffered a concussion or are a friend or family member of a concussion patient, a medical or care professional, or a coach or caseworker, this book will offer answers.” Sandel is well suited to this task due to her background and 30 years as a physician with double board-certification in Physical Medicine and Rehabilitation and Brain Injury Medicine. In the preface, Sandel explains that during her career she often found, “patients were left to manage without proactive medical care to provide accurate information about the complexity or anticipated duration of symptoms related to mTBI (Mild Traumatic Brain Injury).” *Shaken Brain* does well in informing everyone from a layperson to a medical professional about the many nuances related to concussions.

The book is divided into three sections. Section 1 starts with detailed explanations of the mechanism of injury in concussion. It is somewhat definition-heavy and shows the difficulty of Sandel's stated goal of writing for both the layperson and medical practitioner. One of the few flaws of this book is trying to offer answers to such a broad range of readers, therefore straddling the line between simplistic and technical.

Section 1 demonstrates the decades-long difficulty in pinpointing a definition for concussion. There is little concrete procedural advice on the care of concussions, perhaps because (as Sandel says) “the scientific understanding of concussion continues to evolve as research inevitably moves forward.” Thus, it may be best to provide the basic instructions of care and leave the ever-changing specifics for an easy to update website to which medical care professionals can refer. The long-term effects of concussion are discussed, and the information supplies a sound warning to those who choose activities that put them at risk for concussion. In the end, Section 1 provides answers about the mechanism, care, risks, and consequences of concussion in an informative, albeit definition-heavy, way.

Section 2 outlines a Catch-22 of concussions: humans need to be healthy, exercise, and recreate; but these activities often put one at higher risk for concussion. Once again Sandel seeks to inform the reader so they can make knowledgeable decisions in balancing lifestyle and risk of injury. Sandel points out some interesting factors that may keep people from being properly informed about concussions.

The first concern problems inherent in the culture of sports. Problems such as the drive to win, poorly intentioned coaches, and the scholastic scholarships that hang in the balance all lead to poor decisions. But the real danger is in Chapter 7 which shows the terrifying reality of how tens of billions of dollars are made on U.S. athletics alone. This leads to coverups from individual players just trying to make a living, to the very organizations that are tasked with caring for the athletes. Unfortunately, money sometimes controls our perceptions of danger, leading to the funding of biased research and hiding inquiries that put the money-making machine at risk.

Section three continues Sandel's approach of using a mixture of anecdotal cases with scientific evidence to illuminate areas of society in which concussions are often overlooked, such as children, the elderly, victims of intimate partner violence or child abuse, prisoners, and soldiers. Sandel points out how these groups are not as well researched as athletes. Concussions are not limited to the playing field, of course. They occur as far away as distant battlefields or as close as the workplace or home.

Sandel sets herself a challenging task of making a book both informative and useful to laypersons as well as medical experts. As mentioned, it can be definition-heavy when explaining words that are familiar to medical practitioners but unknown to lay readers. To remain engaging the book is liberal in its anecdotes. However, it has an impressive list of up-to-date references to expound and explain these stories which help the book to be accessible for both the layperson and medical professionals. A comprehensive index is also helpful in informing a reader since someone with specific questions can easily find sections on their concerns.

Ultimately, Sandel has written an informative and useful book. Readers will certainly find many answers and gain broad understanding about concussions.

Reviewed by Mason Bennett