Contents

Letter from the Editors

Dear Reader,

We are excited to share The Columbia University Journal of Global Health Fall 2023 Issue with you. As a journal we strive to uplift diverse perspectives that address the most pressing challenges to health equity faced by communities across the globe. This issue highlights the work of four academics, whose research explores themes of silence and confinement within healthcare systems. Ranging from the impacts of COVID-19 on incarcerated people to the overlooked struggles of obstetric fistulas among Ethiopian women, the articles critically examine the health environments of different marginalized groups. We hope you find their manuscripts to be insightful and thought-provoking.

We have continued to host events that promote health and wellbeing in our community, including a food and nutrition event that brought together the expertise of Dr. Jessica Bihuniak, Assistant Professor of Clinical Nutrition in the Department of Nutrition and Food Studies at New York University, and the cooking skills of Columbia Gormand to discuss affordable, nutritious meals for college students.

In our journal's aim of highlighting student voices, we have been increasing our efforts in staff writing and publication. Our staff members have shared their perspectives on public health through our "What is Global Health?" blog and podcast, discussing important topics ranging from community health workers to asbestos in homes. Our most recent podcast features a discussion of careers in scientific research with Dr. Rachel Narehood Austin, Diana T. and P. Roy Vagelos Professor of Chemistry at Barnard College. On our blog, we were able to publish our first bilingual staff article "Obesity in Latine Communities in the U.S: What is at play? / Obesidad en Comunidades Latinas en Estados Unidos: ¿Qué está en juego?". As we consider how to make our journal more accessible, we hope to continue to share staff perspectives across multiple subject areas and in multiple languages, furthering our journal's mission of diversity and inclusivity.

The past year has been an exciting one for our journal: we published ten new articles that accumulated almost 22,000 downloads and were accessed by over 10,000 site users from 143 countries.

We are honored to publish work that has reached such a wide, diverse community, and we hope to continue to expand this impact with the publication of our Fall 2023 Issue. We also recently welcomed two new faculty advisors, Dr. Julianna A. Bol, PhD and Dr. Ana Navas-Acien, MD, PhD, MPH, who will assist our journal in this growth while maintaining the academic rigor that we have always been proud of.

Our journal would not be possible without the dedication of our incredible team, which has grown in the past year. We are truly grateful for the support of our faculty advisor Esther Jackson, the resilience of our journal team, the insight of our peer reviewers, and the submissions from our authors. As always, thank you to our readers and listeners for engaging with our work and forming a vital part of *The Columbia University Journal of Global Health* community.

Sincerely,
Kairaluchi Oraedu & Ann Thanh Phan
Co-Editors-in-Chief,
The Columbia University Journal of Global Health

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Examining Factors of Asylum Seeking in Western Nations That Impact the Mental Health of Middle Eastern Refugees

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ABSTRACT Refugee aid is seldom a topic of American political conversations despite rising global refugee populations (American Immigration Council, 2020). Many Middle Eastern nations including Syria, Libya, Yemen, and Palestine are currently experiencing war and subsequently, hundreds of thousands of individuals from these nations have been forced to seek asylum elsewhere (International Institute for Strategic Studies, 2022). Factors associated with adjusting to asylum countries may affect mental health, an individual's state of psychological wellness (Centers for Disease Control and Prevention, 2023; United Nations High Commissioner for Refugees, 2022). Thus, this study aims to examine aspects of relocation to a Western asylum country that may impact the mental health of Middle Eastern refugees. Findings indicate that insufficient social support, discrimination, acculturative barriers, and lack of access to and usage of mental health services can cause symptoms of mental illness among Middle Eastern refugees living in Western asylum nations (El-Awad et al., 2021; Hashemi et al., 2019; Kisilu & Darras, 2018; Montgomery, 2011).

Political instability, conditions of war, and dire socioeconomic difficulties have driven millions of individuals out of Middle Eastern nations (UNHCR, n.d.). In 2023, there were almost six million Middle Eastern refugees between Syria and Iraq (UNHCR, n.d.). While statistics on mental health disorders among Middle Eastern refugees are lacking in literature, it has been found that 41% of Syrian refugees have some form of mental illness and over 50% of Syrian refugee children suffer from post-traumatic stress disorder (PTSD) (Ballard Brief, n.d.). Middle Eastern refugees refer to those who have fled countries in the Middle Eastern geographic region including Afghanistan, Bahrain, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, Turkiye, United Arab Emirates, and Yemen (World Population Review, n.d.). Refugees who have fled or been forced out of their native country seek asylum, or protection from persecution, in a host country (U.S. Citizenship and Immigration Services, 2015). Thus, an asylum country is one in which refugees can live without fear of persecution or deportation to their native country, while they apply for permanent residence or resettlement (U.S. Citizenship and Immigration Services, 2015). This study uses a traditional narrative review framework to understand how facets of relocation to a Western asylum country may impact the mental health of Middle Eastern refugees (Coughlan et al., 2007).

Lack of social support is associated with the extent to which relocation to an asylum country impacts the mental health of Middle Eastern refugees (Belau et al., 2021; El-Awad et al., 2021; Fazel et al., 2012). It is widely recognized that social support can be a powerful tool in preventing and alleviating mental disorders (Gottlieb, 1985; Qi et al., 2020; Schug et al., 2021). Research has found that Middle Eastern refugees who relocate to asylum countries alone, without familial company, have higher rates of mental illness (Belau et al., 2021; El-Awad et al., 2021; Fazel et al., 2012). Almost 50% of Middle Eastern refugees living in Western asylum countries reported

feelings of social isolation (Belau et al., 2021). In particular, refugees who were separated from their children in asylum countries were more likely to experience poor psychological states involving adverse mental health effects (Belau et al., 2021). Refugees who obtain social support from friends, family members, and host-country natives have a lessened risk of developing mental illnesses including depression and anxiety post-relocation (Fazel et al., 2012; Montgomery & Foldspang, 2007; Montgomery, 2011). Not only is social support a protective factor against refugee mental illness, but it can also lessen the impact of discrimination from host-country natives on refugee mental health. (El-Awad et al., 2021; Hashemi et al., 2019).

Irrespective of their level of social support, many Middle Eastern refugees experience discrimination and Islamophobia in the asylum country, which can have adverse consequences for their mental health (Hashemi et al., 2019; Lindencrona et al., 2007; Montgomery & Foldspang, 2007; Stuart & Ward, 2018). Middle Eastern immigrants who speak their native language in public places in the host country experience discrimination at greater frequency, which can contribute to the development of depression and other mental illnesses (Hashemi et al., 2019). Experiencing discrimination through verbal or physical threats has been found to increase the incidence of depression and anxiety among Middle Eastern refugees (Fritzson & Sand, 2020; Lindencrona et al., 2007; Montgomery & Foldspang, 2007). An estimated 31% of Middle Eastern refugees face depression and PTSD, while an estimated 40% struggle with anxiety (Nguyen et al., 2023). An additional factor that may exacerbate mental health issues among Middle Eastern refugees is experiencing Islamophobia, which remains prevalent in many Western nations (Hashemi et al., 2019; Melinda & Minardi, 2021). Using religious practices to cope with acculturative stress may either improve refugees' mental health, or it may further impair their psychological states because it hinders their acculturation, the degree to which they are able to assimilate their values and practices to the host culture (Hashemi et al., 2019; Stuart & Ward, 2018; VandenBos, n.d.). Experiencing discrimination and Islamophobia in the host country poses evident challenges to refugee mental health (Hashemi et al., 2019; Lindencrona et al., 2007; Montgomery & Foldspang, 2007).

After relocating to an asylum country, many factors beyond discrimination and Islamophobia may prevent acculturation and subsequently decrease the mental health status of Middle Eastern refugees (El-Awad et al., 2021; Lindencrona et al., 2007; Montgomery, 2011). Research suggests that refugees with low levels of acculturation have high rates of psychological disorders, while those who have socially, academically, and linguistically assimilated to the host country experience lower rates of these disorders (El-Awad et al., 2021; Montgomery, 2011). One aspect of acculturation that may impact refugee mental health is adapting to the gender norms of the asylum country (Deng & Marlowe, 2013; Kisilu & Darras, 2018). Acculturation levels may decrease and thus depression may increase among refugees, if gender roles in the host country differ significantly from those of the country of origin (Deng & Marlowe, 2013; Kisilu & Darras, 2018). Additional acculturative hindrances including lack of proficiency in the language of the host country, as well as financial strain, have been found to increase rates of depression and PTSD among Middle Eastern refugees (Cummings et al., 2011; Hashemi et al., 2019; Lindencrona et al., 2007). Another major barrier to acculturation, the denial of a permanent residence application, can exacerbate mental health disorders among Middle Eastern refugees (Montgomery & Foldspang, 2005). Evidently, challenges with adapting to a new country may influence the development of mental illnesses (Montgomery, 2011; Kisilu & Darras, 2018).

In addition to acculturation hurdles, lack of access to and cultural stigma surrounding mental health services can intensify mental illnesses among Middle Eastern refugees post-relocation (Kisilu & Darras, 2018; Sharif & Hassan, 2021; Tahir et al., 2022). Host countries typically do not provide mental health services for Middle Eastern refugees, and when these services are provided, they are difficult to access due to language and financial barriers (Kisilu & Darras, 2018; Sharif & Hassan, 2021). Even if mental health services were accessible to Middle Eastern refugees, these services may not be utilized due to cultural stigma surrounding mental health in Middle Eastern culture (Kisilu & Darras, 2018; Tahir et al., 2022). Usage of mental health aid is viewed as shameful and taboo in many Middle Eastern cultures, particularly for men. However, refugee women have also reported reluctance to seek mental health services due to their cultural beliefs (Kisilu & Darras, 2018; Sharif & Hassan, 2021; Tahir et al., 2022).

Overall, the literature indicates that Middle Eastern refugees living in asylum countries face adverse circumstances that can cause symptoms of depression, anxiety, and PTSD (Belau et al., 2021; Cummings et al., 2011; El-Awad et al., 2021; Hashemi et al., 2019; Kisilu & Darras, 2018; Lindencrona et al., 2007; Stuart & Ward, 2018). These

circumstances include insufficient social support, discrimination, acculturative barriers, and lack of access to and usage of mental health services (El-Awad et al., 2021; Hashemi et al., 2019; Kisilu & Darras, 2018; Montgomery, 2011). These findings suggest that host countries should consider the mental health struggles that may result

from immigrant relocation, and potentially enact programs to ease the acculturation process by supplying assistance with the permanent residence application process, providing language-learning services, and educating their population on cultural sensitivity towards refugees. A limitation in the literature includes a lack of research on interventions that assist with Middle Eastern refugee relocation. Additionally, research is limited due to difficulty operationalizing mental health variables and obtaining diagnoses among vulnerable populations. Future research could explore protective factors beyond social support against the development of psychological disorders among Middle Eastern refugees. In addition, it is important that future research is conducted to identify interventions that can destigmatize mental health services for Middle Eastern refugees and help them cope with the transition to a new country.

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REVIEW

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Healthcare Capacity Building in Northwest Syria: Challenges, Successes, and Lessons Learned

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ABSTRACT The conflict in Syria has caused significant loss of life and widespread displacement. Northwest Syria (NWS) has been heavily impacted, leading to challenges in providing healthcare services. Attacks on healthcare workers and facilities have worsened the situation. Healthcare students and professionals have been specifically targeted, disrupting their education and resulting in migration and shortage of skilled healthcare workers. To address these challenges, local and international organizations and institutions have supported long-term projects to improve healthcare facilities and provide trained healthcare workforce. Collaborations with multiple stakeholders have been established to ensure comprehensive and effective training opportunities, enabling healthcare workers to better serve the population's healthcare needs. A range of undergraduate, postgraduate, and research programs have been developed to enhance healthcare capacity building. These programs aim to strengthen the knowledge and skills of healthcare professionals in NWS. Efforts have been made to strengthen the health system and build the capacity of policy makers in utilizing evidence-based knowledge for informed policy decisions. Global and regional partnerships, along with adequate funding, have played a significant role in the successful enhancement of capacity building activities at all levels.

Building healthcare and health research capacity in underdeveloped and conflict-affected parts of NWS present numerous challenges. Underdeveloped infrastructure, inadequate teaching and service delivery tools, gender disparities, and the sustainability of funding creates obstacles to effective capacity building. The political context, coupled with security concerns further complicate efforts. The accreditation of education and brain drain of skilled healthcare professionals add to the difficulties in strengthening the healthcare system in NWS. Addressing these challenges requires comprehensive and collaborative approaches that prioritize stability, security, gender equity, sustainable funding, and improved coordination and resources for education and service delivery. The lessons learned from capacity building efforts in the Syrian conflict have broader implications for other regions facing similar challenges.

KEY WORDS capacity building, healthcare facilities, healthcare manpower, healthcare services, northwest Syria, Syrian conflict

BACKGROUND

The ongoing conflict in the Syrian Arab Republic, which initially started as a peaceful protest, has resulted in a devastating loss of millions of lives. This crisis has become one of the world's most significant and constantly evolving humanitarian emergencies, leading to a massive evacuation effort. Out of the total population of 23 million in Syria in 2010, a staggering number of Syrians have been displaced due to the conflict. According to the United Nations High Commissioner for Refugees-UNHCR, nearly half of the population has been forced to leave their homes, with approximately 3.5 million individuals seeking refuge in Turkey and another 1.6 million in the Middle East and North African region (Situation Syria Regional Refugee Response, 2023). In addition to the significant number of refugees a substantial population of internally displaced people resides in Northwest Syria (NWS) that comprises Idlib province and parts of Aleppo, covering an area of 6,000 square kilometres. This region is home to an estimated population of around 4.5 million people, as reported by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) in 2023 (North-west Syria, 2023). This figure highlights the complex humanitarian situation within NWS, which is already grappling with the consequences of armed conflict and being under the control of various armed groups. This situation compounds the challenges in delivering vital services and meeting the needs of the affected population.

In NWS, the ongoing conflict has had a devastating impact on civilian infrastructure, including healthcare training and services facilities. Moreover, the prolonged and complex nature of the warfare, involving multiple actors at both national and international levels, has further exacerbated the challenges faced by the healthcare system (Spiegel, 2017). This has led to a significant undermining of healthcare services, making it increasingly difficult to meet the healthcare needs of the population in NWS. The sparks of violence on healthcare services have garnered a lot of attention internationally (Ekzayez, 2020). This attention is mainly due to the fact that these violent attacks on healthcare services cause an interruption in the accessibility of healthcare services to millions of people who are in need. According to the World Health Organization (WHO), a total of 70% of global attacks on medical facilities, ambulances, services and healthcare workers have occurred in Syria (WHO, 2018). The target on health services undermines International Humanitarian Law and Geneva Convention, which are based on the principle of non-interference with medical services in times of armed conflict or civil strife as well as promote the freedom of doctors, paramedics, nurses and other healthcare providers to care for and care for the sick and wounded regardless of political affiliation (International Humanitarian Law, 2023; Customary IHL, 2023, Druce et. al., 2019). Between 2012 and 2016, almost 75% of Syrian health workers left the country because of the crisis. In Aleppo province (northern Syria), 95% of doctors have fled after a series of kidnappings, attacks, killings, and extortion trials (Medical Personnel, 2023). Additionally, 595 attacks were carried out against 350 different health facilities and at least 930 health workers were killed (Douedari et. al., 2020). Most were killed by shelling and bombing, followed by shooting, torture and executions. Among health workers, the most affected were physicians, who accounted for 32% of the deaths (Fouad et. al., 2017).

Many medical, dental, veterinary and pharmacy students were also targeted resulting in the interruption of healthcare professional undergraduate and postgraduate education in NWS with little chance to produce new health workers and maintain the healthcare workforce. During the conflict it is essential to ensure an adequate supply of health workers with the right educational training and skills that meet the needs of the health system. However, the healthcare system in NWS is understaffed, underfunded and has become increasingly fragmented and politicised by the on-going conflict. A shortage of faculty lecturers has impacted teaching and training. Consequently, students and young professionals in NWS have been subjected to insufficient training and supervision, necessitating work beyond the scope of their education and expertise (Bdaiwi et. al., 2020). It was estimated that 10% of displaced healthcare students and workers were not able to return to the education process due to security concerns or the destruction of education centres. Moreover, 70% of healthcare workers in NWS are working either without completing their professional education or without possessing medical certificates (SAMS, 2018).

In response to the challenging circumstances, both local and international organisations have promptly stepped in to ensure the continuity of healthcare training and services. They have extended support and established health institutes and academies with the aim of enhancing the skills of healthcare workers and producing new graduates to fill the gaps created by the migration of medical personnel due to the conflict.

Effective management and monitoring of healthcare services and training by a competent authority are crucial. The Ministry of Health in Damascus was unable to provide uniform central coordination, thus it was essential to establish alternate means of coordination in NWS. International organisations began to help in the development of regional governance institutions like Idlib health directorates to serve as the core centre of healthcare facilities

(giz, 2023). With the development of the health directorate, organised activities like overseeing the work of the health centres and taking part in the selection and allocation of employees and resources were established.

The Syrian Board of Medical Specialization (SBOMS) was established by professional doctors to evaluate new graduates, raise the quality of medical services and combat the spread of forged medical certificates as well as impersonation of doctors (SBOMS, 2015). Many organizations have started long-term projects to provide health centers with skilled professionals. These projects aim to address both primary and secondary care needs, including surgical facilities, maternity care, limb prosthesis, and physical therapy. Health facility management and healthcare referral networks were established, and coordinated activities were started under the umbrella of the health directorates and supporting organisations. These organisations include WHO (WHO, 2020), UNHCR (UNHCR, 2013), the Humanitarian Relief Foundation (IHH, 2011), Qatari Red Crescent (QRC) (QRCS, 2023) and Syrian medical professionals living in developing countries, including the Syrian Expatriate Medical Association (SEMA) (SEMA, 2020), the Syrian American Medical Society (SAMS) (SAMS, 2023) and the Syrian board of Medical Specialties (SBOMS) (SBOMS, 2015).

The global landscape is marked by various regions facing the devastating consequences of conflicts, resulting in immense human suffering, displacement, and instability. This paper examines the process of health capacity building in the context of the ongoing conflict in NWS. It explores the initiatives undertaken to enhance medical education, training, and research for undergraduate and postgraduate students. This paper also sheds light on the challenges encountered and the opportunities that arise in the process of health capacity building in NWS. This paper aims to serve as a valuable resource for stakeholders in identifying the needs, strengths, and weaknesses of healthcare capacity in NWS and other conflict-affected regions of the world.

HEALTH WORKFORCE CAPACITY BUILDING

Capacity-building refers to the process of developing and strengthening the skills, instincts, abilities, processes, and resources that individuals, organizations and communities need to survive, adapt, and thrive in a rapidly-changing world (Capacity-Building, 2023). Healthcare capacity building encompasses the process of fostering the growth of knowledge, skills, and leadership required for the successful advancement of population health promotion (Decorby-Watson et. al., 2018). To attain this objective, capacity building occurs at three key levels: individual, organizational, and community. Comprehensive capacity-building services typically involve the delivery of scientific and technical support through webinars, training workshops, and knowledge products, all of which are tailored to serve the needs of the target population.

The scarcity of the healthcare workforce poses significant challenges to the delivery of quality healthcare services. A recent review emphasizes human resources as a vital aspect in the effective function of healthcare systems while simultaneously highlighting the growing human resource crisis (Deprez et. al., 2023). Ensuring quality and sustainability of health workers is critical for achieving Universal Health Care. Accreditation of educational institutions and regulation of clinical practice are essential mechanisms to attain this goal because humanitarian crises also put regulatory mechanisms and resources under strain (WHO, 2023). Building a healthcare workforce in NWS that can meet the populace's healthcare needs is a critical component of the capacity-building strategy. International organisations are considerably working towards building health capacity (Institute on Governance, 2010). In the case of NWS, healthcare professionals must be prepared to handle the challenges of working in a conflict zone. Many training programs for healthcare professionals in NWS have been established by international health organizations (Fouad et. al., 2017). In order to meet the increased demand for healthcare workers, some organizations, such as SAMS, SEMA and Union of Medical Care and Relief Organizations (UOSSM) (SEMA, 2020; SAMS, 2023; UOSSM, 2012), have started to provide training courses for medical and paramedical professionals. These include graduate and post-graduate level training, skills-based training, and workshops. Furthermore, the Continuing Medical Education (CME) is an initiative from SEMA that covers a wide range of subjects through online lectures to upgrade healthcare staff capacity and keep them updated with the last protocols and procedures.

Many of these initiatives were made in response to the health and humanitarian needs of the people (Bdaiwi et. al., 2020). These training and education programs are designed for naive individuals and for those whose education, training, or practice were interrupted due to conflict. It offers learning opportunities that involve effective communication to enhance health literacy, including the acquisition of knowledge and the development of life skills that promote the well-being of the population (Finn et. al., 2021).

UNDERGRADUATE CAPACITY BUILDING

Undergraduate medical education and training provide skills and development that correspond to the needs of conflict-affected practitioners. SEMA has been giving training through its Academy of Health Sciences in Idlib (SEMA, 2020). SEMA initiatives aim to train and qualify students in various specialist skills through high-quality academic two-year programs, that include training for paramedics, nursing and midwifery, physiotherapy, orthotic and prosthetic, and laboratory and pharmacy technicians (ACQUIN, 2023). The education programs have been accredited, and the quality of education is consistently monitored by multiple organizations to ensure high standards and effective outcomes. The academy of health sciences includes specialized programs (nursing, physiotherapy, and emergency medicine for 127 students) that last 24 months. Their programs are accredited by ACQUIN (Accreditation Certification and Quality Assurance Institute – Germany) and are funded by the Qatari Red Crescent (QRC) and Qatar Fund For Development (QFFD) (QRCS, 2023). Additionally, collaborative agreements were signed for developing Gaziantep University's Health Institutions in Jarablus region of NWS and to develop a comprehensive ongoing medical education program for healthcare staff in all specialties in NWS. In 2018, through two-year-diploma programs, about 65 nurses, 43 paramedics, and 20 physiotherapists were trained (SEMA, 2020).

The SAMS has also established medical institutions in NWS, including two midwiferies and nursing schools in Idlib. In 2018, SAMS awarded scholarships in the fields of medicine, dentistry, and pharmacology to 28 Syrian students who started their medical studies in Syrian accredited universities but were interrupted because of the conflict (SAMS, 2023). Additionally, Free Aleppo University (FAU), and Idlib University are two other major public educational institutions contributing to healthcare capacity building in NWS. They provide training in medicine, dentistry, and pharmacy. Private educational facilities like Al-shamal University and Al-Hayat University of Medical Sciences provide training in anesthesia, physiotherapy, nursing, and midwifery (Enab, 2019).

POSTGRADUATE CAPACITY BUILDING

The aim of post-graduate health force training and education in NWS is to empower healthcare professionals with the necessary skills and knowledge to deliver affordable and quality healthcare services to the local population, ensuring the healthcare needs of the population are fully met. It also includes continuing education and training programs for health professionals to ensure that they are knowledgeable on the most recent advancements in healthcare delivery. Training programs also involve organizational and administrative skills, as well as communication, counselling, and advocacy abilities. In 2015, the Syrian Board of Medical Specialties was established in NWS to provide certification for the completion of specialty and subspecialty training. This involves reviewing applicants' qualifications and performance through standardized examinations (SBOMS, 2015). It is affiliated to the Ministry of Health of the Syrian Interim Government.

Language barriers in healthcare education can pose significant challenges, impeding effective communication and understanding between educators and learners. Overcoming these barriers requires innovative approaches. The Medical Education Platform (SBOMS, 2015) was launched with the goal of improving the knowledge of Arabic-speaking medical professionals in various medical aspects. The platform offers courses and lectures in various medical specialties, delivered by a team of experienced lecturers using up-to-date content developed for online training systems and telemedicine. The platform enables participants to expand their knowledge in a flexible, time and space-efficient learning environment while ensuring high-quality training outcomes. Currently, the scientific committee includes Vascular Surgery, Urology, Pediatrics, Pediatric Surgery, Otorhinolaryngology, Orthopedic Surgery, Ophthalmology, Oral and Maxillofacial Surgery, Obstetrics and Gynecology, Neurology, Nephrology, Internal Medicine, General Surgery, and Gastroenterology. The academy of health sciences supported by SEMA in Idlib province offers 24-month specialized programs in nursing, physiotherapy, and emergency medicine to 127 students.

In addition to clinical training programs, significant emphasis was placed on public health education. Recognizing the importance of this aspect, a special agreement was forged through collaborative efforts involving SEMA, Idlib Health Directorate, QRC and Ankara Yildirim Beyazit University (AYBU) (SEMA, 2020). As part of this agreement, 20 healthcare providers working in the Syrian humanitarian context of healthcare in Syria and Southeastern Türkiye are enrolled in a Master's in Global Health program at the university. This program offers specialized coursework and training to equip healthcare professionals with a deeper understanding of global health issues, cross-cultural healthcare practices, and strategies for addressing health disparities on local and global scale. This program enhances public health education by ensuring that healthcare professionals receive comprehensive training in areas such as disease prevention, health promotion, and community healthcare management. By providing public health education to healthcare workers, a holistic approach is fostered,

equipping healthcare professionals with the knowledge and skills necessary to address both individual and population health needs effectively. An online Essential Public Health and Epidemiology Training Program was also arranged by the agreement between SEMA and AYBU. Over 40 healthcare providers, particularly those working at the health administration level in NWS, have undergone specialized training in essential public health epidemiology and disaster management. This training equips them with the crucial knowledge and skills needed to effectively address public health challenges, understand disease patterns, analyse data, implement preventive measures, and efficiently respond to emergencies or disasters. Indeed, by investing in the public health training of healthcare providers, there is a strong hope to bolster the public health infrastructure in NWS. These training programs were funded by QRC (QRCS, 2023) and QFFD (QFFD, 2023). This investment aims to enhance the overall capacity of the healthcare system to effectively protect and promote the well-being of the population, especially in the face of various health threats.

HEALTH RESEARCH CAPACITY BUILDING

Conducting health research in conflict zones and other complex settings is difficult yet necessary. Improving healthcare research capacity in conflict-stricken settings holds significant importance in enabling a clearer understanding of the unique healthcare challenges presented in these contexts and helps inform evidence-based interventions and policies. By enhancing research capacity, one can generate knowledge specific to conflict settings, leading to improved healthcare outcomes, more effective response strategies, and ultimately, the promotion of health and well-being in these challenging environments. However, the capacity to conduct such research is often limited and rarely practiced, especially in conflict-affected countries and regions (Bowsher et. al., 2019).

Healthcare research in conflict settings is often limited due to various factors. These limitations primarily stem from restricted infrastructure, inadequate human resources in terms of both quantity and expertise, as well as general instability. These factors collectively impede local health research efforts, making it challenging to conduct comprehensive studies and gather robust data. Addressing these limitations and investing in research capacity-building becomes crucial to overcome these barriers and generate essential knowledge for improving healthcare in conflict settings.

In order to ensure the continuation of health research, multiple academic and humanitarian groups have initiated collaborative efforts to establish new networks and partnerships in NWS. These endeavours aim to foster research practices and policy engagement, facilitating the generation of valuable knowledge and the sustained advancement of healthcare in the region. The ongoing conflict is significantly impacting the population, causing profound consequences on various aspects of their lives, and calling for a robust system of evidence-based research on health care needs and medical practice. Health research indeed plays a vital role in shaping policy decisions. Through rigorous scientific investigations and the generation of evidence, health research provides policymakers with valuable insights into various aspects of healthcare, such as disease prevention, treatment effectiveness, health system performance, and public health interventions. The findings and recommendations derived from health research help guide policy development, implementation, and evaluation, ultimately leading to evidence-based policies that have a positive impact on public health outcomes. By relying on robust research, policymakers can make informed decisions that prioritize the health and well-being of communities. Health research capacity building partnerships in conflict-affected northwest Syria was essential for addressing the unique healthcare challenges faced in this region. These research partnerships bring together academic institutions, humanitarian organizations, local healthcare providers, and community stakeholders to collaboratively conduct research and generate evidence-based solutions. By pooling resources, expertise, and knowledge, these partnerships facilitate the development of context-specific research initiatives that focus on the health needs of the affected population. Through collaborative research efforts, health research partnerships aim to inform policy, improve healthcare delivery, and enhance the overall well-being of communities impacted by conflict in NWS (Kutluk et. al., 2019).

The growth of this partnership is founded on the experiences of the various organizations involved as well as the relationships and experiences of Syrian scientists, many of whom served in the NWS and are representatives of the community (Ekzayez et. al., 2022). Involving local partners in research is of paramount importance. Local partners can provide valuable insights, contribute to study design, facilitate access to research participants, and ensure that research findings are relevant and applicable to the specific needs of the community. Furthermore, involving local partners promotes capacity building, empowers local researchers, and fosters sustainable collaborations that can continue beyond the research project, leading to long-term benefits for the community and the overall advancement of healthcare in the region. Some of the academic and humanitarian organizations

include the Conflict and Health Research Group at King's College London (CHRG, 2020), The Syria Research Group (SyRG) co-hosted by the London School of Hygiene and Tropical Medicine (LSHTM) and Saw Swee Hock School of Public Health (SyRG, 2023), the Union of Medical and Relief Organizations (UOSSM, 2012), the Syrian American Medical Society (SAMS, 2023), and the Global health Security at Chatham House (GHS, 2023). Furthermore, the Syria Public Health Network created in 2015 assesses and improves the humanitarian and health response to the conflict in addition to providing a platform for discussion, analysis, and policy generation regarding effective health strategies and interventions in the context of the crisis (Syria Public Health Network, 2023). Other organizations such as MIDMAR are dedicated to promoting social empowerment among the population of NWS, enabling the affected populace to actively engage in healthcare and education (Incubation, 2023).

The Research for Health in Conflict in the Middle East and North Africa (R4HC MENA) project stands as a notable research partnership dedicated to building research capacity in NWS. This collaborative initiative focuses on exploring the intricate relationship between health and conflict within the MENA region. By bringing together researchers, policymakers, and practitioners, the project aims to conduct research that informs policies, enhances healthcare delivery, and strengthens health systems. Through multidisciplinary research, capacity building, and knowledge exchange, R4HC MENA contributes to evidence-based solutions and sustainable improvements reflected in the health outcomes of conflict-affected areas of NWS (Kutluk et. al., 2019). R4HC-MENA is funded by a Research Councils UK Global Challenges Research Fund Award. Health system strengthening is indeed of utmost importance in conflict-affected settings, as the bolstering of a robust health system not only improves immediate health outcomes but also builds resiliency in effectively responding to future challenges. The Research for Health Systems Strengthening in Syria (R4HSSS) project, focuses specifically on strengthening health systems in Syria. This project aims to generate evidence and provide practical solutions for enhancing the effectiveness, efficiency, and resilience of healthcare systems in the region. By collaborating with local researchers, policymakers, and healthcare providers, R4HSSS seeks to address the specific challenges faced in the Syrian context and contribute to sustainable improvements in healthcare delivery. This project emphasizes capacity building, knowledge sharing, and the implementation of evidence-based interventions to support the long-term development of a robust and responsive health system in Syria. This research was funded by the National Institute for Health Research (NIHR) through aid from the UK Government directed toward the support of global health research (R4HSSS, 2023). Capacity building by policymakers and program managers is crucial for successful translation of evidence-based research into effective health policy and programs. By strengthening the capacity of policymakers and program managers, they can acquire the skills and knowledge necessary to understand, interpret, and utilize research evidence in decision-making processes. Overall, the achievements of R4HC and R4HSSS highlight the importance of evidence-based research in achieving beneficial results regarding health policy and program implementation, ultimately benefiting the NWS populations impacted by conflict. By equipping policymakers and program managers with critical appraisal skills, abilities to understand research methodologies, and awareness of evidence-informed decision-making capabilities, they can now effectively incorporate research findings into policy development, program planning, and resource allocation.

Similarly, the Syria Research Group (SyRG) is a team of primarily Syrian health system researchers based at the London School of Hygiene & Tropical Medicine and the National University of Singapore Saw Swee Hock School of Public Health (SSHSPH), which has extensive experience working with field researchers in Syria, particularly on studies pertaining to health system governance and community participation (CHRG, 2020). Nevertheless, adequate research capacity is essential for conflict-affected countries to plan for affordable and logic-driven healthcare systems, sound economic policy, and effective aid utilization.

CHALLENGES

Building health and health research capacity in underdeveloped and conflict-affected parts of the NWS faces several challenges. Furthermore, health capacity building may not progress uniformly, as individual and professional objectives, along with organizational objectives and processes, may vary, potentially leading to conflicts and suboptimal outcomes. In addition, humanitarian organizations operate within the dynamic interplay of professional and political contexts, where their practices can be influenced by political interests and external forces. Consequently, this can lead to resistance towards capacity building interventions aimed at strengthening health systems (Aroni, 2012). The regions of NWS lack many services and infrastructure that would aid in the development of educational capacity building (Safak, 2023; Alfakhry et. al., 2023). The number of educational facilities are still small compared to the size of the population and students residing in the area. The lack of necessary infrastructure such as healthcare facilities, laboratories, educational and research institutions hamper the establishment of robust healthcare education and research systems. Due to the attacks on health facilities,

there is a shortage of healthcare facilities designed to train new healthcare students (OMER, 2020). The challenging geographical environment for present educational infrastructure also exacerbates the difficulties for capacity building. The area is constantly subjected to air attacks and military barriers that separate cities and villages. Sharing control among several armed groups is a significant issue for students as they move from one location to another (UNSC, 2020). Obtaining permission to enter Turkey for educational purposes often involves a complex paperwork process with the educational institution, funders, and authorities within the NWS. While the Presidency of Migration Management under the Ministry of Interior is facilitating the process for Syrian students, this bureaucratic procedure can occasionally result in delays or interruptions in the commencement of education.

Security constraints pose a significant challenge for students in the NWS. The volatile and unpredictable security situation in the region creates obstacles and risks that hinder the pursuit of education. Students face difficulties in accessing educational institutions, attending classes regularly, and ensuring their personal safety. These security constraints not only disrupt the learning process but also impact the overall well-being and educational outcomes of students in the NWS. Collaboration between capacity building stakeholders with local authorities is essential to ensure the protection and safety of students. Collaborative efforts can include regular security assessments, coordination in emergency situations, and information sharing to mitigate risks can create a secure and conducive environment for students to continue their healthcare education despite the challenges posed by conflict zones. In fact, some organizations are conducting comprehensive evaluation to develop proposals for large projects that include large and secure educational areas (SAMS, 2022).

The lack of medical trading and healthcare equipment also poses a significant challenge in the educational setting of NWS. Practical education and hands-on training are crucial for students to apply their knowledge and develop practical skills. However, the high cost and limited availability of medical devices, as well as the challenges of delivering them to educational institutions in conflict zones, hinder students' capacity building. Efforts to address these challenges should prioritize the provision of necessary medical equipment and laboratories, ensuring that students have access to the resources they need to enhance their practical education and training.

Lack of real need assessment, inadequate planning and execution of the capacity building process are also posing risk to capacity building (Pherali, 2020). Accurate and comprehensive needs assessment is crucial, encompassing various aspects related to the healthcare workforce and infrastructure such as doctors to population ratio, population, and graduates etc. Identifying the range of medical specialties available in the area and evaluating their distribution is also important since it helps identify gaps in specialized healthcare services and informs targeted capacity-building initiatives. Achieving a balance between the number of trainees and mentors is crucial for effective capacity building in healthcare education. By ensuring balanced distribution of trainees and mentors, capacity building efforts can be sustained over time. However, to achieve this balance, careful planning, resource allocation, and mentorship capacity assessments are essential. Coordination among various humanitarian organizations and capacity-building institutions is also crucial to meet both short-term and long-term human resource needs. Effective collaboration and cooperation can ensure efficient utilization of resources and avoid duplication of efforts.

Preventing brain drain in the healthcare sector is a significant challenge faced by NWS (Syrian, 2023). Doctors and other healthcare professionals pursuing training opportunities in the West and Turkey are reluctant to return to work in NWS. The push and pull factors that contribute to this phenomenon can be addressed through providing financial support, improving working conditions and bettering professional opportunities as well as security. The gender gap in health workforce capacity building efforts in NWS needs to be addressed, as women and girls face social and cultural barriers that limit their participation (Refworld, 2023). To promote gender equality and inclusivity, women empowerment and tailored capacity building programs that address the specific needs and challenges faced by women and girls are crucial. Humanitarian organizations and institutions supporting the capacity building activities in NWS can encourage the establishment of gender-responsive policies and practices within healthcare institutions, including equitable recruitment, retention, and promotion practices. The financial strain experienced by students who have to work during their studies to support their families and cover expenses can have a significant impact on their academic achievement and capacity building. Increase the availability of scholarships and financial aid programs that cover not only tuition fees but also living expenses. This will alleviate the financial burden on students and allow them to focus more on their studies.

Poor administrative system is a well-known challenge in conflict zones, as the control is distributed among several groups, and there is no central state (Union Agency for Asylum E. Syria, 2022). This results in the difficulty of unifying health decisions and curricula as well as distributing health workers and health resources in the NWS

in an equal and fair manner to serve the entire population. Accreditation of education is another issue, though some humanitarian agencies provide support for specialization programs in various medical fields, and a significant challenge lies in the absence of international accreditation for the certificates awarded. This lack of accreditation undermines the recognition and credibility of these specialized programs.

OPPORTUNITIES

Nevertheless, conflict in NWS was successful in bringing the issue of fragile healthcare capacity, and the international community has recognized the urgent need to address healthcare capacity building in this region. The involvement of international organizations presented unique opportunities and provided several benefits to conflict affected NWS healthcare workers and healthcare system. Initiatives such as training programs, infrastructure development, provision of medical supplies and equipment, and knowledge exchange platforms are all due to heightened attention of international organizations. Access to much-needed resources, funding, and technical assistance have helped NWS to overcome challenges posed by the conflict and the development of resilient healthcare systems.

Furthermore, the attention of international organizations draws global awareness to the healthcare needs and challenges in conflict-affected regions. This led to increased advocacy efforts, funding opportunities, and policy support at the international level, and helped in further strengthening healthcare capacity building initiatives.

While the conflict remains a significant obstacle, the attention and support of international organizations provide hope and a pathway towards developing sustainable healthcare systems and mitigating the impact of the conflict on the health of the affected population. At this point, it is crucial to seize this opportunity by fostering strong partnerships and collaboration among international organizations, academic institutions, local healthcare providers, governments, and communities. The lessons learned from capacity building efforts in the Syrian conflict can indeed be applied to other regions facing similar challenges. It has been demonstrated that by working together, it becomes possible to address the specific healthcare needs of the conflict-affected region, improve access to quality healthcare services, and enhance the overall well-being of the population.

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The Silent Suffering: Obstetric Fistula in Ethiopia

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ABSTRACT Obstetric fistula is a maternal complication that accounts for 6% of all maternal deaths worldwide (Muleta, 2006). This condition occurs most commonly in areas of sub-Saharan Africa and rural south Asia where access to medical care and maternal education is not readily available (Sartin, 2004). During prolonged or obstructed labor, a fistula can form connecting the rectum or urinary tract with the vagina. The condition is more common in young mothers, as they are often pressured by their community, culture, or partners to have children early (Andargie & Debu, 2017). This has severe and potentially devastating lifelong consequences. Women living with obstetric fistula experience chronic incontinence with associated odors, social and psychological isolation, and severe pain (Bashah et al., 2018). Over half of women with obstetric fistula may develop urinary tract infections (Dereje et al., 2017). Despite the condition being preventable and treatable with surgery, there is still a high prevalence in low-income countries (Browning & Syed, 2020). Although the incidences of obstetric fistula are difficult to document due to the lack of medical reporting, this analysis will focus on the effects of the disease in Ethiopia, one of the poorest countries in the world (The World Bank, n.d.). The devastating impact of obstetric fistula on maternal health, particularly in low-income countries such as Ethiopia, demands urgent attention and intervention.

INTRODUCTION AND BACKGROUND

Obstetric fistula is a severely debilitating condition in which there is an abnormal connection between the vagina and the rectum and/or urinary tract. Without access to appropriate, high-quality medical care and resources, women can experience prolonged labor and severe complications during childbirth. It is estimated that one in twenty babies descend into the birth canal with an abnormal presentation; in 3-4% of pregnancies there is a breech presentation (Mohammed & El-Chaâr, 2022). Malposition can result in fistula, for example if the bladder becomes trapped between the baby's head and the woman's pubic bone (Muleta, 2006). The prolonged pressure can result in tissue death and the formation of a fistula (Muleta, 2006). Obstetric fistula has an especially high incidence in young mothers and girls who give birth before the pelvis is fully developed (Cook et al., 2004). Many who develop obstetric fistula endure prolonged labor, with the mean duration of labor being 2.5 to 4 days; and in 90.1% of cases the baby is stillborn (S. Ahmed et al., 2016; Tebeu et al., 2012).

The first evidence of obstetric fistula was found while examining the remains of an Egyptian queen's mummy from 1550 B.C. In the 11th century, the Persian physician Avencia connected prolonged and obstructed labor with obstetric fistulas (Zacharin, 2000). The mummified remains of Queen Henhenit of Egypt (c. 2050 A.D) contain the earliest known human remains with a vesicovaginal fistula. The fistula, discovered upon close anatomical examination in 1935, revealed that due to the maternal shape of the pelvis the baby's head would not have passed through easily, resulting in a wound that potentially led to the woman's death (Zacharin, 1988).

In the early 1800s, physicians were attempting to close obstetric fistulas and change the lives of women who were forced to live with the condition. The first obstetric fistula treated in the United States was in 1838 by Dr. John Peter Mettauer in Virginia and was followed seven years later by a similar surgery performed by Dr. J. Marion Sims (Zacharin, 2000). It took Dr. Sims 30 different surgeries to discover how to close the fistula safely using wire sutures. He published his first article on fistula repair and is now known as the "father of American gynecology," opening a fistula hospital in New York, which is now the Waldorf Astoria Hotel (Muleta, 2006). Dr. Sims, while celebrated for his advancement in the gynecological field, is also known to have exploited enslaved women and poor immigrants to further his research (Sartin, 2004). This raises larger questions on the historic inequities Black individuals, especially Black women, have faced in the name of medical progress.

This background is important because it portrays the current crisis through the lens of its history. Obstetric fistula, a condition Dr. Sims spent 30 surgeries attempting to fix, is now virtually non-existent in high-income countries with available access to medical care. It was not until 1959 – nearly 100 years later – when Dr. Catherine Hamlin and Dr. Reginald Hamlin left Australia to found a midwifery training hospital in Ethiopia focusing exclusively on obstetric fistula. That hospital now sees 1,200 cases per year and has a 92% success rate of curing the condition (Muleta, 2006).

Surgery has had a profound effect on women living with obstetric fistula. However, areas with the highest incidence are least likely to have qualified medical professionals to treat the condition (Browning & Syed, 2020). This analysis will focus on Ethiopia, located in the Horn of Africa. With 115 million people, Ethiopia is the second most populated nation in Africa and has one of the fastest-growing economies in the region with 6.1 percent growth in 2019-2020 (The World Bank, n.d.). However, despite economic growth and urban development, obstetric fistula remains one of the most devastating conditions affecting women who live there.

EPIDEMIOLOGY AND SOCIAL DETERMINANTS

The World Health Organization (WHO) estimated that at least 50,000 to 100,000 cases of obstetric fistula occur every year and approximately 2,000,000 women live with obstetric fistula worldwide (World Health Organization, n.d.). These cases are most common in sub-Saharan Africa and southern Asia but have the highest prevalence in countries that have high maternal mortality (Figure 1) (Ridder, 2012). In a 2000 Global Burden of Disease report it was estimated that 2.15% of all "neglected obstructed labor births" and 0.08% of all births resulted in an obstetric fistula (Dolea & Abouzahr, 2000; Adler et al., 2013). The true percentage is likely much higher due to lack of reporting data.

Various social determinants can lead to a woman being at risk of obstetric fistula (Figure 2) (Andargie & Debu, 2017). A comprehensive study conducted in 2017 demonstrated the importance of social determinants of health in understanding obstetric fistula incidence. The study surveyed 4,000 women around Ethiopia and collected data to build a better picture of obstetric fistula prevalence (Andargie & Debu, 2017). Factors such as poverty, lack of access to quality healthcare due to place of residence, limited education, and early marriage contribute significantly to the vulnerability of women to obstetric fistula (Andargie & Debu, 2017). The study also highlighted the association between age at first birth and obstetric fistula, indicating that approximately 29.9% of Ethiopian women who have their first birth before the age of 15 develop obstetric fistula. This decreased to 19.4% between 15-19 and down to 13.8% for women with their first birth at the age of 25 (Andargie & Debu, 2017).

Geographic regions in Ethiopia were also shown to be a significant determinant of obstetric fistula incidence. The region of Amahara had the highest prevalence of obstetric fistula, with a 30.8% incidence rate. This was followed by Oromia and Gambella, which had a prevalence of 27.4% and 24.1%, respectively (Andargie & Debu, 2017). The lowest prevalence was found to be in the capital, Addis Ababa, with a prevalence of 6.3%. A major risk factor in the development of obstetric fistula were delays in care-seeking. It has been recommended that treatment should be provided for obstetric fistula within three months of delivery (Dennis et al., 2016; Lyimo & Mosha, 2019; Mohamed et al., 2018; Waaldijk, 2004). It was found that those with accessible hospitals and prenatal care were less likely to develop fistula, while women who opted for at-home delivery had higher risk (Andargie & Debu, 2017; Roka et al., 2013; Tebeu et al., 2012). Urban areas such as Addis Ababa benefit from healthcare infrastructure, while rural regions such as Amhara, Oromia, and Gambella may face challenges in care-seeking due to limited access to medical resources. With an estimated 80% of its population residing in rural areas, Ethiopia's population distribution may contribute to the prevalence of obstetric fistula in rural regions. Home delivery is likely more common in rural areas, and has been shown to be a risk factor for obstetric fistula (OECD & Policy Studies Institute, 2020b, 2020a; Bihon et al., 2022).

Education status and literacy may also play a role in the determinants of obstetric fistula development. Of those

who had no education, 19.4% developed obstetric fistula; this is compared with 16.2% and 17.9% who had primary and secondary or higher education respectively (Andargie & Debu, 2017). It is well documented that limited education translates to a lack of awareness about maternal health, family planning, and the significance of seeking timely medical care during pregnancy and childbirth (Falkingham, 2003; Karlsen et al., 2011; Onah et al., 2006; Raghupathy, 1996). One study conducted in Peru, a nation with eleven years of compulsory schooling for children, found with compulsory schooling the probability of severe maternal health complications decreased by as much as 29% (Weitzman, 2017).

Socioeconomic factors are also significantly correlated with risk for obstetric fistula. Women from lower income families were found to be at a significantly higher risk of developing obstetric fistula compared to those from higher socioeconomic status (Andargie & Debu, 2017). This disparity underscores the importance of addressing economic inequalities and improving access to healthcare services for vulnerable populations to reduce the burden of obstetric fistula. Targeted interventions are needed that not only address the medical aspects of obstetric fistula but also address the underlying social determinants to effectively prevent and manage this debilitating condition (Link & Phelan, 1995).

PERSONAL ACCOUNTS

Interviews conducted with women in the Amhara region of Ethiopia were recorded to document the social isolation and difficulty in living with obstetric fistula (Animut et al., 2019). One thirty five year old woman describes her experience: "I am passing urine continuously day and night. I can't get good sleep. My sleeping 'Agoza' [a local sleeping pallet made of animal skin] is always wet. Sometimes, I prefer to lie on the bare ground rather than on the 'Agoza'. I would prefer to live a healthy life for five years than die having lived with this problem for 20 years" (Animut et al., 2019).

Some speak of attempting to cope with the condition by constantly washing their clothes or self-isolating (Andargie & Debu, 2017). Due to the taboo nature of the condition, many women do not seek help. One woman comments on her experience saying, "my brother's daughters and sons ostracize me due to an offensive smell…If I [didn't get] married early, I wouldn't get this disease. Now I am living alone in a little hut" (Animut et al., 2019).

While interviewing these women, the authors noticed a recurring theme: many women do not understand the cause of obstetric fistula. Instead, they blame doctors whose hands "tore" at them or, in some cases, blame themselves (Animut et al., 2019). This mistrust of healthcare workers may lead to more extensive problems in the future. The misconceptions behind obstetric fistula must be remedied in these communities. Untreated obstetric fistula may result in severe health complications, in addition to ongoing suffering for affected individuals and a perpetuation of the cycle of misinformation and stigma (Muleta, 2006). Trust in the African healthcare system is particularly tenuous due to the history of colonialism and a lack of culturally sensitive healthcare practices (Lowes & Montero, 2021; Simon & Mosavel, 2008; Tilley, 2016). Widespread mistrust in the healthcare system may lead to general delays in care-seeking and suboptimal health outcomes, including vaccine hesitancy and decreased utilization of essential medical services. Addressing these issues is crucial for promoting community well-being and fostering a more positive relationship between communities and the healthcare system.

INTERVENTIONS: CURRENT ACTION AND DISCUSSION

One of the reasons obstetric fistula is so unfortunate is because the condition is preventable. In Europe and the United States, virtually all known cases of obstetric fistula were eliminated between the years 1935 and 1950 (Ahmed et al., 2016). This is due, in part, to readily accessible safe delivery care. However, in countries such as Ethiopia where many women live in rural communities hours away from medical care, this approach is not always possible. This is one of the greatest obstacles facing eradication of obstetric fistula in rural and low-income countries (Muleta, 2006). Medical infrastructure is expensive and often not feasible in rural areas which can be many hours away from hospitals.

Current action begins at the level of understanding the scope of obstetric fistula in Ethiopia. In Ethiopia, the health system is organized into regional and district levels known as woredas (*Fistula Foundation - Help Give a Woman a New Life*, n.d.). Due to the fragmented nature of the woredas, it can be difficult to consolidate information and build a clear picture of the problem in Ethiopia (*Fistula Foundation - Help Give a Woman a New Life*, n.d.). This lack of clear data hinders policymakers from understanding the scope of obstetric fistula and the need to act.

Prevention of obstetric fistula begins with appropriate education surrounding fistula for both women, their partners, and the community. This educational process and community involvement is important since it is very young women who most often develop obstetric fistula. Hence, emphasizing family planning in this educational initiative empowers women and their families to make informed decisions and support one another, even before pregnancy (Ridder, 2012). Men should be educated regarding reproductive health, the importance of pre and post-natal care, and the significance of skilled birth attendants. Sex education could also be incorporated into curriculums to increase awareness surrounding reproductive rights, safe childbirth practices, and the consequences of early pregnancy. This is especially important because in some regions of Ethiopia child marriages are especially common. In the Amhara region, it has been reported that the most common age of marriage is 12 years old and 80% of women are married before the age of 18 (Tekile et al., 2020). This education would also provide a basis for understanding pregnancy and delivery.

Stigma surrounding obstetric fistula may also be alleviated through educational outreach programs and community initiatives. Studies have shown that the psycho-social impact of obstetric fistula may be devastating, necessitating a solution that includes surgery and a holistic approach (Khisa & Nyamongo, 2012; Mselle et al., 2011). Women from rural areas who might have poor personal hygiene and a lower education status may receive less careful care from health professionals, and thus educational programming should also focus on healthcare workers (Muleta, 2006). As previously noted, negative healthcare outcomes may contribute to a negative healthcare attitude and underutilization of available health resources (Ridder, 2012).

Enhanced surveillance of labor and improved emergency obstetric services must also be utilized to prevent obstetric fistula. In cases of prolonged or arrested labor, or if there are complications in delivery, an emergency cesarean section can prevent obstetric fistula. This comes with access to hospitals and the development of gynecological infrastructure in more rural communities.

A study conducted in 2018 noted that in Uganda treatment for women with obstetric fistula cost an estimated 378 USD per person (Epiu et al., 2018). However, this treatment can be life-changing and has been statistically proven to lead to improved quality of life for those affected (Debela et al., 2021). Treatment centers with expertise in treating obstetric fistula should be established. These centers and dedicated clinics have proven to be a beneficial intervention in low-middle-income countries. Between 2014 and 2018, clinics throughout Mali treated 1,214 women for obstetric fistula and trained 520 healthcare workers. At a fistula clinic at Mungola Hospital in Uganda, 300 women are treated for obstetric fistula annually, with a surgical success rate of over 80% reported (Nalubwama et al., 2020; *Uganda National Obstetric Fistula Strategy*, 2016). These clinics, in addition to providing necessary services for women with obstetric fistula, often provide post-surgery care and recovery services. The clinics also allow for research to be conducted in the region, which assists in disseminating information and guiding further interventions.

In Ethiopia, there has been a dedicated effort to opening fistula centers and decreasing the prevalence of obstetric fistula. Located in Northern Ethiopia, the Mekelle Hamlin Fistula Center was recorded to have conducted 2000 surgeries per year from 2010 through 2013; of these operations, 89.3% were successful (Bihon et al., 2022; Kumsa Meikena et al., 2023). In Southern Ethiopia, the Yirgalem Hamlin fistula center had less success, with a rate of repair failure of 28.8%. The authors note that surgery failures were more likely in women who had very extended labor and larger fistulae, which highlights the need for further preventative measures in addition to treatment (Tadesse et al., 2022). Personalized treatment offered at fistula centers could also build a stronger relationship between health professionals and the community. With increased global awareness, organizations such as The Fistula Foundation have begun raising funds for these treatments. Unfortunately, some individuals take advantage of the funds raised and attempt to perform surgeries without the appropriate training (*Fistula Foundation - Help Give a Woman a New Life*, n.d.). In response to this, the International Federation of Gynecology and Obstetrics founded a global fistula training program to increase the number of skilled providers. This program has proven to be successful, decreasing the prevalence of fistula in Ethiopia in recent years (Gele et al., 2017).

Between 2005 and 2016, a statistical analysis mapped obstetric fistula in Ethiopia. In 2005, almost 100,000 women were known to have an obstetric fistula, while in 2016 only ~72,000 women suffered from the condition (Deribe et al., 2020). This demonstrates that cases have declined in recent decades and shows a substantial reduction in prevalence across Ethiopia (Figure 3) (Deribe et al., 2020). These data can support programs and resources targeted geographically to regions with the highest prevalence.

The decline in obstetric fistula cases in Ethiopia can be attributed to multiple factors. Since 2005, the Ethiopian Ministry of Health has deployed initiatives to prioritize maternal health and improving healthcare infrastructure

(*Federal Democratic Republic of Ethiopia Ministry of Health. (2010). Health Sector Development Program IV 2010/11-2014/15. Ministry of Health Addis Ababa.*). Efforts to increase access to cesarean sections, coupled with training programs for health professionals, likely also contributed to the decline in cases associated with prolonged obstructed labor (Wright et al., 2016). Healthcare extension workers are also being deployed to regions in need (Gedefaw et al., 2021). Continued efforts are needed to address remaining cases especially in rural regions, and further improve maternal health services.

The consequences of fistulas can be more severe than the condition itself. These consequences can persist even following, and include severe mental health issues (Debela et al., 2021; Dennis et al., 2016; Khisa & Nyamongo, 2012; Mselle et al., 2011). Further research is necessary on the mental well-being of women living with obstetric fistula, who have been alienated by their communities. Mental health services may be necessary following treatment and while living with the condition. Post-treatment care should include access to physical and emotional therapy tailored to the unique needs of fistula survivors. Such therapies can play a pivotal role in the recovery process, aiding in both the physical healing and the emotional resilience of these women. The reintegration of fistula survivors into their communities cannot be overstated. Social reintegration programs should be designed and implemented to provide women with the necessary tools and support to rebuild their lives. These programs not only restore a sense of belonging and dignity but also contribute to breaking the cycle of silence and stigma that surrounds obstetric fistula.

CONCLUSION

Obstetric fistula remains a prevalent and debilitating condition in Ethiopia, particularly in regions marked by poverty, limited healthcare access, and educational disparities. The persistence of this condition, despite the relatively inexpensive treatment, underscores the urgency for concerted action at local, national, and international levels. Obstetric fistula is not only a medical issue but is deeply rooted in social inequities. The specific stories and accounts of women affected with the condition and living in isolation show that those with obstetric fistula must live with both physical and psychological trauma. The nature of this condition demonstrates that comprehensive and robust intervention is needed, with increased investments in healthcare, accessible maternal health services, and educational initiatives. It is necessary to challenge the cultural norms and social pressures that contribute to early pregnancies, in addition to combating the stigma and social isolation surrounding the condition.

It is also important to empower women through education and facilitate access to family planning, thereby fostering safe pregnancies and deliveries. Simultaneously, investments in healthcare infrastructure, particularly in remote rural areas, are imperative to ensure prompt access to emergency obstetric services is equally necessitated. Obstetric fistula is a global human rights issue, as it exemplifies the systemic challenges faced by women in resource-limited settings, where the right to safe motherhood, comprehensive healthcare, and dignity are violated. The eradication of obstetric fistula requires a holistic approach, addressing not only the medical aspects but also dismantling the societal structures that perpetuate inequality.

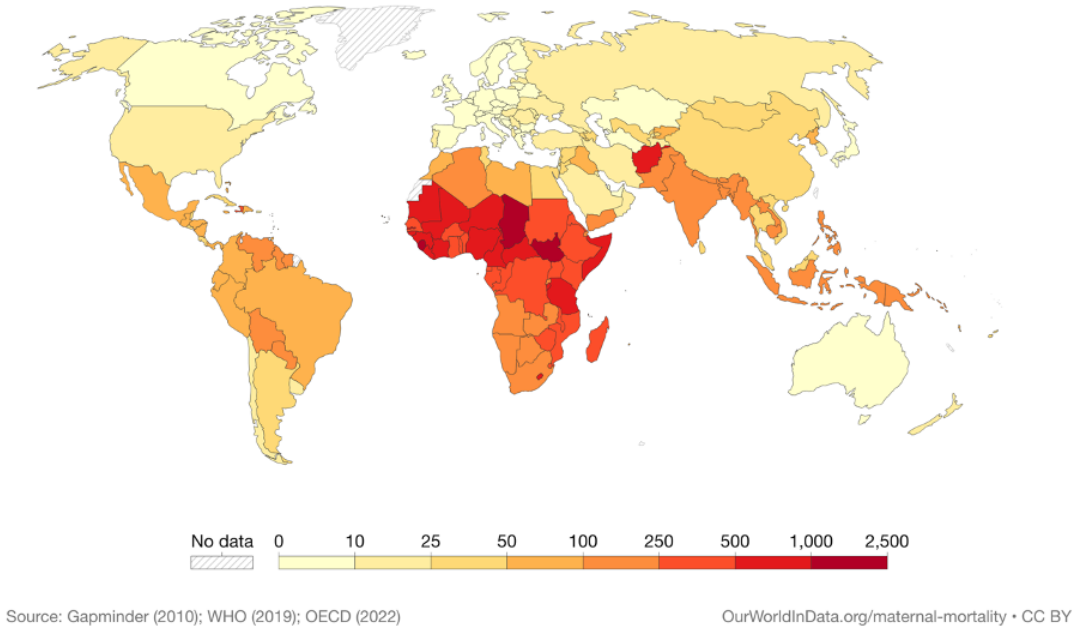

Figure 1. Global disparities in maternal mortality rates 2020 (World Health Organization, n.d.).

Global maternal mortality rates between nations show a profound disparity. Maternal mortality ratios are expressed as a rate per 100,000 live births and signifies the count of women who lose their lives due to pregnancy-related factors during pregnancy or within 42 days after the conclusion of pregnancy. Most high-income countries have extremely low maternal mortality ratios, such the average rate in the European Union at only eight maternal deaths per 100,000 live births. Conversely, the contrast is striking in Sierra Leone, where a woman's risk of maternal death during pregnancy is 300 to 400 times higher. The estimated rate in Ethiopia corresponds to 401 deaths per 100,000 (Roser & Ritchie, 2013).

Variables	Categories	Counts (%)	Being Experienced OF		d.f	Chi-Square	P-Value
			No	Yes			
Age at first Marriage	Below 15 years	1022(32.1)	78.5%	21.5%	3	18.542	0.000*
	15 – 19 years	1626(51.2)	84.4%	16.6%			
	20 – 24 years	439(13.8)	81.1%	18.9%			
	25 years and above	91(2.9)	74.3%	25.7%			
Age at first Birth	Below 15 years	254(8.0)	70.1%	29.9%	3	10.767	0.013*
	15 – 19 years	1820(57.3)	80.6%	19.4%			
	20 – 24 years	886(27.9)	84.5%	15.5%			
	25 years and above	218(6.8)	86.2%	13.8%			
Educational Status	No education	2391(75.2)	80.6%	19.4%	2	253.41	0.000*
	Primary	524(16.5)	83.8%	16.2%			
	Secondary and Higher	263(8.3)	82.1%	17.9%			
Place of Residence	Urban	491(15.4)	94.6%	5.4%	1	176.77	0.000*
	Rural	2687(84.6)	78.8%	21.2%			
Marital Status	Married	2998(94.3)	81.1%	18.9%	2	2.493	0.288
	Widowed	74(2.3)	79.7%	20.3%			
	Divorced	106(3.4)	86.8%	13.2%			
Wealth Index	Poor	1412(44.4)	86.8%	13.2%	2	74.301	0.000*
	Middle	562(17.7)	83.6%	16.4%			
	Rich	1204(37.9)	73.7%	26.3%			
Employment Status	Currently working	2165(68.1)	84.0%	16.0%	1	33.092	0.000*
	No currently working	1013(31.9)	75.3%	24.7%			

Figure 2. Social determinants of health and obstetric fistula incidence rates in Ethiopia (Andargie & Debu, 2017)**.**

Table 1 unveils critical determinants impacting obstetric fistula. A substantial proportion (31.9%) were unemployed and had a heightened obstetric fistula prevalence (24.7%). Most women (51.2%) entered marriage during their adolescence (15-19 years), while 32.1% married before age 15. Obstetric fistula was notably high among women marrying at 25 plus (25.7%) and those marrying before 15 (21.5%). Age at first childbirth was significant, with the highest fistula prevalence among teenage mothers (29.9%), particularly those under 15. Educational status played a significant role; most (75.2%) had no formal education, and they exhibited the highest fistula prevalence (19.4%). Among factors examined, including age at first marriage, age at first birth, education, wealth, and employment, all significantly impacted obstetric fistula incidence at $p<0.05$ (Andargie & Debu, 2017).

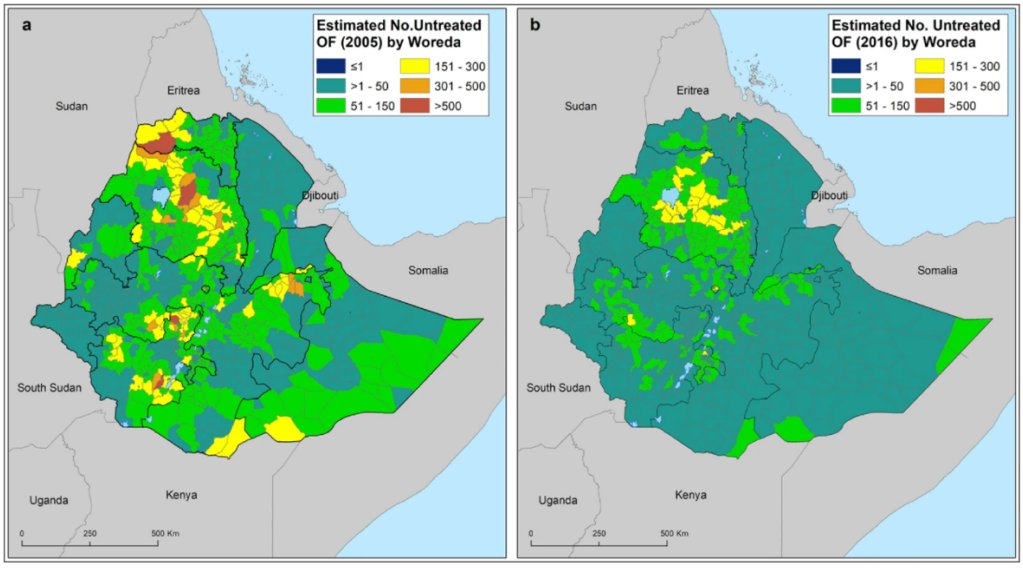

Figure 3. Obstetric fistula incidence in Ethiopia in 2005 compared to 2016 (Deribe et al., 2020).

Estimated prevalence of vaginal fistula among childbearing women aged 15 to 49, as delineated by district, in the years 2005 (a) and 2016 (b). A significant shift is seen between 2005 and 2016 when the number of districts containing more than 200 cases decreased from 54 districts to only six. Most of these persisting districts with untreated cases were primarily concentrated in the Amhara, Tigray, Southern Nations, Nationalities, and Peoples (SNNP), and eastern Oromia Regions. This evolving landscape underscores the progress made in addressing this health issue while underscoring the areas that still require heightened attention and intervention (Deribe et al., 2020)

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The COVID-19 Pandemic and the Health of Incarcerated People

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ABSTRACT COVID-19 has upended the daily operations of the U.S. correctional system. Correctional COVID-19 policies have altered how incarcerated people navigate legal proceedings, receive visitors, procure healthcare services, and maintain mental well-being and physical health. Although some of these changes have been positive (e.g., increased access to tablets, de-incarceration policies), other strategies have exposed societal inequities that fail to meet the needs of people who are incarcerated. Lockdown orders have had unintended consequences for incarcerated people, particularly among those with mental health disorders. This commentary examines the impact of U.S. correctional system policies on the well-being of incarcerated people.

KEY WORDS COVID-19, U.S. correctional system, lockdowns

INTRODUCTION

Three years have passed since SARS-CoV-2 made headlines and COVID-19 was declared a pandemic. In the United States, long gone are the days of social distancing and interfacing with our social and familial contacts through video conferencing. As the nation's public consciousness shifts away from COVID-19, there is one segment of the population for whom this threat has made lasting effects: incarcerated people. In the United States, correctional facilities detain individuals who, by law, are innocent until proven guilty and are awaiting their trial date to be sentenced or released. Prisons, on the other hand, detain individuals with felony convictions longer than a year (National Institute of Justice, n.d.). Correctional facilities represented a disproportionately large number of COVID-19 cases early in the pandemic. There have been over 30,780 cases per 100,000 inmates infected with COVID-19 in the US prison population (Marquez et al., 2021). This figure represented an incidence rate over three times as high as the general population (9,350 cases per 100,000) (Marquez et al., 2021).

COVID-19 Related Policies for Incarcerated Populations

COVID-19 protocols for incarcerated individuals recommended enacting preventative strategies, such as quarantine orders and lockdowns, which minimized the spread of SARS-CoV-2 (Centers for Disease Control and Prevention, 2022)(Heard, 2021). The most stringent guideline for preventing SARS-CoV-2 transmission in corrections facilities was a 10-day quarantine period for individuals with symptoms regardless of vaccination and booster status (Centers for Disease Control and Prevention, 2020). In contrast, community guidelines recommend a 5-day isolation period for individuals who test positive or demonstrate signs of illness and may return to work or school without further testing depending on symptoms. These far more stringent quarantine periods aimed to minimize the spread of the virus for incarcerated people. However, this further increased the time which inmates spent alone and largely confined to their cells. Other policies and procedures for mitigating

the spread of COVID-19 in corrections facilities, such as mass quarantine, have been left to the discretion of each facility (New Jersey Department of Health, 2022).

Strategies that prevent the spread of COVID-19 within this setting have been difficult to enact due to controversies. For example, in the United States, the use of face masks has become a politicized issue (Milosh et al., 2021). These divisions made policies on the mandatory use of face masks in this setting difficult to enforce and maintain. Correctional settings sought other strategies to prevent and control COVID-19 outbreaks. For instance, emergency releases were frequently implemented to limit COVID-19 transmission (Garcia et al., 2021). At the onset of the pandemic, even in politically conservative states, prison sentences were commuted, policing practices were modified, and eligibility for parole was expanded (James et al., 2022). However, this policy's overall scope varies from state to state.

Variations in Incarceration Rates due to COVID-19 Policies

Despite a decrease of 15% in the United States prison population from 2020-2021, many states are now close to pre-pandemic levels of incarceration or have exceeded them (Widra, 2022). For example, on December 15th, 2021; California's prisons held 113% of their capacity (Widra, 2022). The data now shows that prison populations have not been due to compassionate releases, but rather to temporary policies preventing new inmates from being detained (Sharma et al., 2020).

In the fall of 2021, as the Delta variant of SARS-CoV-2 became the most prevalent strain, jail facilities were already back to 87% of their pre-pandemic levels (Sawyer & Wagner, 2022). Despite the continued threat of COVID-19, the size of jail populations is problematic. Incarcerated people have been shown to have higher rates of medical comorbidities (Centers For Disease Control & Prevention, 2019) and remain at higher risk for SARS-CoV-2 related complications. Unfortunately, the policies governing which individuals are eligible for release without needing bail are state-dependent (Jorgensen & Smith, 2021). In many jails in the United States, poor individuals who cannot afford to post the average bail of $10,000 for a felony charge are forced to await their court date behind bars (Prison Policy Initiative, 2016). This income disparity disproportionately impacts people of color who are less likely to afford bail (Binswanger et al., 2010). This places racial and ethnic minority individuals at heightened risk of contracting COVID-19 while still being legally innocent. Some states mitigated the risk to highly vulnerable populations during the early months of the pandemic with compassionate release programs (United States Sentencing Commission, 2022).

Without widespread criminal justice reform, defendants and court judges were left to work with a compassionate release program that was never intended to release a significant number of individuals (Prison Policy Initiative, 2020a). Public policy shortcomings were further highlighted when the highly contagious Omicron variant led the Federal Bureau of Prisons [BOP] to announce more than 10,000 active COVID-19 cases in federal prisons in the beginning of 2022 (Klonsky & Johnson, 2022). As correctional facilities returned to their pre-pandemic levels, containing this highly transmissible variant became more challenging. Lockdowns and unit-wide quarantines became the preferred policy for limiting the spread of the virus (Prison Policy Initiative, 2020b).

On Lockdown: The Cost of Current Mitigation Strategies on Inmate Mental Health

Lockdowns are defined as suspending recreational activities where incarcerated persons are restricted in their cells or housing areas for 22 to 24 hours a day (Izadi, 2017). Lockdown measures can be applied to restore order or, in the case of the pandemic, to reduce the spread of COVID-19 (Blakinger, 2020). Strict legal guidelines for their duration and frequency do not exist. Instead, the statute on the length of lockdowns is: *"a lockdown should last no longer than necessary"* with essential privileges such as medical care, access to food, and water maintained except in cases of an emergency that, for security purposes, requires denial of access for less than 72 hours (American Bar Association, 2011). If not managed appropriately, lockdowns may resemble punitive measures such as solitary confinement or administrative segregation. In solitary confinement, incarcerated people are placed in an isolated unit for up to 23 hours a day (citation). Solitary confinement has been linked to increased rates of inmates dying by suicide and persistent trauma long after an individual is released (Luigi et al., 2020). During COVID-19, the number of people held in solitary confinement in the United States was estimated to be around 300,000 (a 500% increase over pre-pandemic levels) (Solitary Watch, 2020).

Although these strategies have been instrumental in controlling COVID-19 outbreaks, there has been little public attention on the frequency of lockdowns and their impact on visitations, religious services, educational programming, and the mental and physical well-being of incarcerated persons (Kinner et al., 2020). Consequently, incarcerated people subjected to frequent lockdowns are now experiencing heightened stress and anxiety

(Johnson et al., 2021). This further compounds the higher prevalence rates of mental health disorders within correctional facilities. Their prevalence rates vary by race/ethnicity. In the United States, one study estimated that across prison facilities nationwide, 62.2% of White people, 46% of Latinos, and 55% of African-American individuals have been diagnosed with a mental health disorder (James & Glaze, 2006). The severity of mental health disorders has worsened for many during incarceration due to exposure to violence (Yi et al., 2016). COVID-19 restrictions on activities such as family visitations, recreational access, education, and educational training may amplify these adverse effects.

Walking on a Tightrope: Difficult Ethical Dilemmas Facing Correctional Administrators

The long-term impact that COVID-19 will have on incarceration remains unclear (Wertheimer & Velázquez, 2022). It is essential to balance the risk of COVID-19 transmission, the impact of mitigation strategies on inmate mental health and physical well-being, and fluctuating community transmission rates. Comartin et al. (2022) showed that the rates of incarcerated people with severe mental health disorders increased in one jail as prison admissions decreased, and COVID-19 restrictions were imposed, since in-person visitation and medical services were all limited except for those deemed 'essential'.

In states where bail reform exists, individuals with highly complex medical and psychiatric conditions can remain in jail for hours or days. Bail reform seeks to release inmates from low socioeconomic status shortly after booking for misdemeanors or minor offenses. Many individuals were previously held for a span of months or a year due to their inability to pay for their conditional release before trial. This reform shortens the window in which many inmates can receive what has, unfortunately, become the only accessible healthcare provider for many disenfranchised groups– the correctional system.

Navigating the U.S. Correctional System and Public Policy Recommendations Post-COVID-19

The COVID-19 pandemic has exposed the challenges of imposing COVID-19 restrictions on incarcerated adults with mental health disorders; particularly the negative aspects of using lockdowns. Physical distancing protocols caused a shift emphasizing telehealth solutions to take hold. Unfortunately, not all facilities were equipped with the proper technology to and had to scale back or terminate many mental-health services due to physical distancing protocols (Johnson et al., 2021).

Depopulating is one strategy to reduce the spread of COVID-19 in correctional settings (Schuck et al., 2020). However, funding and coordination are needed to bolster reentry programs offering mental health and behavioral services, medications, and housing (Franco-Paredes et al., 2020). One way to ensure the continuity of medical and mental health care services available for people returning to the community from a correctional setting is to ensure that they are automatically enrolled in Medicare and Medicaid services before release (Albertson et al., 2020). Public policies regarding Medicare/Medicaid and incarceration's impact on eligibility and status vary primarily by state. As of 2019, eight states (i.e., Idaho, Illinois, Kansas, Missouri, Nevada, North Carolina, Oklahoma, Utah, and Wisconsin) terminated Medicaid eligibility for inmates in jails. Seven states (i.e., Alabama, Idaho, Kansas, Missouri, Nevada, Oklahoma, Utah, and Wisconsin) terminated Medicaid eligibility for inmates in prisons (Kaiser Family Foundation, 2019). The practice of suspending Medicaid enrollment for later reactivation has been linked to reduced jail/prison recidivism and saves taxpayer dollars (The Pew Charitable Trusts, 2020). Suspending Medicaid enrollment rather than terminating coverage and forcing individuals to reapply to the program as a new patient is far easier from a paperwork and resource perspective. To address the disparities in coverage made worse by the COVID-19 pandemic, the Centers for Medicare and Medicaid Services [CMS] developed a section 1115 demonstration in 20XX. Section 1115 allowed inmates in states that were previously excluded from applying for Medicare/Medicaid benefits to apply and be covered during incarceration (Centers for Medicare & Medicaid Services, n.d.). Political willpower is needed at the state and federal levels to make this a permanent policy.

Although the increased risk for COVID-19-related outbreaks cannot be ignored, the Federal Prisons Bureau and Corrections Departments by State must prioritize adaptation strategies for controlling COVID-19 transmission. The authors propose that preparedness plans include investing in widespread access to digital mental health services such as telehealth appointments to manage medications and receive therapy, as well as enhancing COVID-19 vaccinations and booster rates. Facilities should also provide access to technology like tablets, electronic communication, video conferencing.' Access to this would allow for therapeutic counseling from trusted mental health services while minimizing the likelihood of COVID-19 transmission during times of

heightened risk (Hagan, 2023).

There is a need for both comprehensive COVID-19 testing (rapid-antigen, PCR) throughout correctional facilities (Tavoschi et al., 2020) and an increase in COVID-19 treatment, such as the FDA-approved drug Paxlovid. Paxlovid is known to reduce the risk of hospitalization by up to 89% in high-risk adult patients and is currently under-prescribed within correctional settings (Florko, 2022). These strategies can be used alongside public health and wastewater surveillance data that serves as an early warning of increased community-level spread (Centers for Disease Control and Prevention, 2021). Environmental health and safety measures are necessary to effectively track COVID-19 infection cases, and implement additional safeguards that protect incarcerated persons by adjusting medical and mental health treatment delivery as transmission rates fluctuate (i.e., shift to telehealth during outbreaks). Administrators within the correctional system must also plan for ways to transition mental health programming and treatment on a scale, quality, and quantity comparable to a digital platform should a COVID-19 outbreak occur. Altogether, these strategies prioritize the well-being of incarcerated people and provide the space for adaptation should a COVID-19 outbreak occur.

CONCLUSIONS

The pandemic has shone a glaring light on the unique vulnerabilities of incarcerated populations, underscoring the urgent need for systemic reforms in public health policy and correctional management. Lockdowns and stringent quarantine measures, while necessary for controlling virus spread, have had deleterious effects on the mental health of inmates, exacerbating pre-existing conditions and creating new challenges. The pandemic has also highlighted the broader issues of healthcare access and quality within the correctional system. Jails and prisons must incorporate forward-thinking strategies to prepare for future COVID-19 outbreaks. This involves investing in digital health infrastructure, such as telehealth services, which can provide continuous mental health support while minimizing infection risks.

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