Making masks: The women behind Ghana’s nose covering mandate during the COVID-19 outbreak

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Abstract
In 2020, Ghanaians adopted face masks, or “nose masks,” in public places to combat the spread of a novel coronavirus, SARS-CoV-2. Seamstresses and tailors quickly pivoted to manufacture nose masks by April, given the longstanding cottage sewing industry. While the country saw an influx of disposable face masks by the end of the year, cloth mask makers made a significant impact on public health at the start of the pandemic. This article considers how people were able to quickly popularize nose masks in 2020, noting the key role women seamstresses played alongside public leaders, the Ghana Standards Authority, and the police who used punitive punishments and coercive tactics to encourage sustained use as the pandemic continued. It marks one of the first studies on the history and cultural use of nose masks in an African country, comparing their use and adoption to other national mask responses, including those in the United States, Japan, and the Czech Republic.

Keywords
COVID-19, Ghana, face masks, medical textiles, Africa, nonpharmaceutical interventions, informal economy

On 15 June 2020, Ghana’s president, Nana Addo Dankwa Akufo-Addo, mandated the wearing of face coverings to combat the spread of the novel coronavirus, SARS-CoV-2 (Mbewa, 2020). He extended a rule that had been in place in the capital city Accra and its environs since April. Akufo-Addo’s push to make what he called “nose coverings” mandatory became an important step in the country’s effort to
contain the virus. Previously, in March 2020, the country’s leadership had stepped up efforts to test and trace more than 30,000 recent arrivals (and their contacts) on international flights to ensure that the virus did not spread unabated. Addo hoped the mask mandate would ensure that Ghanaians knew how significant a threat the pandemic was to their health. He was aware that the country might not have adequate access to personal protective equipment (PPE) and pushed for local manufacture of fabric masks (2020f).

This article considers how the rapid adoption of nose masks in Ghana can be read as a significant moment of historical change and technological innovation driven in part by women (Winsor, 2020). It places an African country within the growing literature on the history and politics of medical mask usage that has burgeoned in the wake of the Covid-19 crisis (Makovicky, 2020; Kenworthy et al., 2021; Rab et al., 2020; Cowper-Smith et al., 2021). This story is significant because it shows how Ghanaians implemented an affordable, low-tech solution to a pandemic that had direct health benefits (Perra, 2021). After one year, Ghana confirmed only 335 deaths from Covid-19 (2020o). In contrast, wealthier countries like the United States that were quick to jettison local mask mandates, and relied on high-tech pharmaceutical interventions were less successful at containing the pandemic within the first year.

Although Ghana did not have a longstanding tradition of people wearing hand-made fabric masks, the ongoing use of textiles and sewing in West Africa provided fertile grounds for the national mask mandate to be taken up quickly and efficiently. 1 Seamstresses and tailors shifted quickly to manufacturing masks and gave them to hawkers or hung them outside stalls. Soon, it was common to see masks for sale on street corners and people wearing them to enter shops and other businesses. One example was Deborah, a street seller who moved between cars in traffic in the Ashaiman area of the capital city Accra to sell shoes imported from China. Around April 2020, she stopped selling footwear and began peddling masks from car to car. By November, she found that people were no longer purchasing masks from her. But she explained it was difficult to return to selling footwear since the imports from China were not coming into the country in order for her to buy and resell (Deborah, 2020).

Where did street sellers like Deborah obtain the masks they put out for sale? In terms of handmade ones, fabric masks were almost immediately available for sale in Ghana (see Figures 1, 2, and 3). This was due to the everyday production of hand-sewn cotton garments in the country, with most people patronizing a personal tailor or seamstress for clothing to wear to religious services, family events, festivals, and work. Many of these sewers found the masks simple to stitch up in large bulk quantities within days of the first mask mandates. Another street seller, Doris Agbamatsi, who stood in slow-moving traffic along an unpaved portion of the road, explained a seamstress made the masks for her to vend (Agbamatsi, 2020).

People in Ghana effectively coupled recent awareness of serious disease outbreaks with a robust local sewing industry to quickly develop an African nose mask culture. Ghanaians were familiar with recent campaigns to use barrier methods and healthcare textiles to combat disease. Many would have used impregnated bed nets to stop the spread of malaria, or condoms to prevent the spread of HIV. They had continued to use temperature checks at the airport, begun during the 2014 Ebola outbreak in West Africa, and people
were primed to avoid a new unknown disease that might be equally catastrophic. Fear of contracting Covid-19 merged with a new fashion aesthetic of nose masks in the wake of the seventh human coronavirus, SARS-CoV-2. People began to tie their wardrobes to mask colors worn to work, and eventually weddings, funerals, political, and religious events, once government eased restrictions on public gatherings midway through 2020.

Figure 1. Lady sells face shields, surgical masks, and locally made face masks by the roadside (photo by Eyram Amaglo).
The following account weaves together street and virtual conversations with the history and culture of medical textiles to document this historic moment when Ghanaians began to use nose masks in 2020. With the partnership of a researcher based in the US who orchestrated conversations with lead designers of established fashion houses over Zoom and WhatsApp, and the street sleuthing of a photographer and filmmaker based in Accra, it was possible to capture the mood in Ghana as a new ethos of nose masks arose between April and November 2020. The closing section considers the Ghanaian experience in the context of other countries with national mask mandates including, the Czech Republic to show how early success led to complacency and a surge in cases by the beginning of 2021. Throughout, the story of Ghana’s fabric mask boom stitches together theories on medical innovation with the social lives of material objects.

“Shock of the Old”: Change and continuity in a medical textile

Surgical face masks, also known as “respirators,” are part of a class of medical and healthcare textiles used to combat the spread of infections (Zhong, 2012: 136–139). Nose coverings have a complex global history that maps onto differing understandings of modernity and contagion spanning centuries. They are also linked, I would argue, to histories
of scarves and veils used to provide modesty within religious and cultural guidelines and protect the face from sun and dust. They represent not only “boundary objects” between individuals, but also define historical and geographic boundaries between time periods and places where they are used and not used (Makovicky, 2020). While surgical masks are not new technologies, their widespread public adoption in 2020 in Ghana was a moment of rupture and significant change.

Like Singer sewing machines, modern surgical face masks are an example of what historian David Edgerton calls “very long-lived” technologies, “not only being kept in use, but continuing in production for a long time (Edgerton, 2007: 59).” Rectangular pieces of fabric tied over the mouth and nose during surgery date to the late 19th and early 20th century. They arose in Europe at a point when advances in glassware and microscopes allowed people to view bacteria and parasites, shifting ideas about how diseases could be spread. Surgical masks are credited to individuals like Jan Mikulicz-Radecki who published the first account of a single-layer gauze surgical mask and combined an improved mask with gloves for surgery in Germany (Newsom, 2003). Fabric overlays, called “bandeau à bouche” in French (literally “mouth bandage”) could also trap noxious gases, which were a prevailing worry with the rise of gas warfare during World War I (Herve, 2004). Mask drives, where countries sourced black net and handed it to tailors to quickly stitch up masks for men on the frontlines occupied the media in 1914.
Masks gained widespread acceptance and use during the 1918–1919 global Influenza pandemic which overlapped with World War I, when female students, in particular, put classes on hold to make masks for soldiers and civilians (University of California, 1920: 25).

In African countries, as well as Europe and the Americas, masks remained in hospitals and clinical settings and did not gain acceptance for everyday use in public settings during the 20th century. Although people around the world made masks during the 1918–1919 Influenza pandemic, the culture of mask making did not extend into the 20th century outside East Asia. Further, around the 1940s, surgical masks became less widely used even in hospitals, partly, due to the invention of antibiotics. Until the 1970s, hospitals worldwide used three- and four-ply fabric masks which were washable and reusable (Strasser and Schlich, 2020). These fabric masks were made at an industrial scale by companies, not families. The first disposable masks made from ground glass were scratchy and uncomfortable for those used to fabric masks. Disposable surgical masks now incorporate polypropylene fibers which are softer and easy to breathe through, while still filtering small nanoparticles capable of causing infection (Zhong, 2012: 138). Perhaps, a shift to disposable masks made it less likely for people in some countries to feel that they could even make a hospital-grade mask themselves.

In contrast, in East Asian countries, nose and mouth coverings have sustained histories of public use from the 19th century. In Western media, reports of the first documented cases of Covid-19 in China in December 2019 and January 2020 frequently emphasized images of people wearing masks in Wuhan, the center of the first outbreak. Initial xenophobic reporting of the novel coronavirus in the United States was replete with images of people in China wearing masks. Ironically, masks in Asian settings came through European influences and tie together popular understandings of modernity and progress to respect for Western science (Hyun and Sumida, 2020).

In Japan, masks may have first gained acceptance as early as the 1870s through the promotion of British inventor Dr Jeffreys’s respirator in Japanese newspapers (Sumida, 2020b). Masks use in East Asia maps onto a trend of “hygienic modernity” that Japanese colonists, in particular, emphasized in their public health and sanitation programs in China and Korea from the early 20th century (Rogaski, 2014). In China, masks also gained popularity when Scottish plague doctors in the early 20th century promoted their use (Zhang, 2021). Important improvements on mask protocols and designs to stop spread of disease through droplets came through the work of Cambridge-trained Malaysian scientist Wu Lien-the during the Chinese plague outbreak in 1910, but he did not invent surgical masks (Lynteris, 2018; Lee et al., 2014; Wong, 2021). Masks for military use helped to popularize a sleek modern look of soldiers, which everyday people came to emulate with masks made at home for personal use. So, whereas people in places like the United States or the United Kingdom might associate masks with East Asia, their provenance was European countries. The difference is that places like the United Kingdom stopped wide use of masking during the twentieth century, whereas places like Japan, Vietnam, and China had continuous cultures of use.

Throughout the 20th and early 21st centuries, individuals in East Asian countries continued to use handmade fabric masks to combat seasonal influenza, as well as allergens like Cedar pollen allergy (Sumida, 2020a; Horii, 2014). People opted to wear “courtesy
masks” to prevent their germs from infecting others in a public setting. In places like Japan, women, especially mothers and grandmothers in domestic spaces, continued to make masks for family members to wear during flu season. For women who wore them in domestic spaces while preparing food, regardless of health benefits, they also took on a gendered valence. As Mitsutoshi Horii notes “mask-wearing emerges in the state of disempowerment as an act of empowerment (Horii, 2014).” Fabric masks materialize as one of many medical technologies in global circulation that can provide “unexpected kinds of empowerment” for those that appropriate them (Harden and Moyer, 2014).

Notably, specific outbreaks of upper respiratory infections fostered the public use of handmade and hospital-grade surgical masks as a form of “risk ritual” (Burgess and Horii, 2012). These outbreaks included the start of the Asian flu pandemic (H2N2) in 1957 and Hong Kong flu (H3N2) in 1968, as well as the advent of the fourth and fifth human coronaviruses SARS-CoV-1 in 2002 in China and MERS-CoV in Saudi Arabia in 2012, which led to 185 cases in South Korea, the largest MERS outbreak outside of the Middle East Given familiarity with the widespread use of masks to combat these major upper respiratory infections, leaders in East Asian countries were able to swiftly ask citizens to wear masks, even as production revved up for better distribution of surgical and medical-grade N95 and KN95 ones (Park, 2020). Once disposable masks became more available by November 2020, fashion commentators in Japan lamented the swing away from fabric ones. They expressed a certain nostalgia for the earliest months of the pandemic when people coordinated their outfits with unique handmade masks and documented these creative looks in street photography (2020m).

Alongside surgical masks, veiling practices with scarves have also served to form barriers to infection in parts of South Asia and the Middle East. Notably, in 1994 there was an outbreak of pneumonia in India and while some people purchased surgical face masks, others opted to drape scarves over the nose and mouth as added protection (Moore and Anderson, 1994; Lowe et al., 1995). During the MERS-CoV outbreak from 2012 to 2014, researchers correlated lower infection rates in women in Saudi Arabia to the possible use of hijab, the head veil draped from a fabric scarf worn for modesty (Chen et al., 2017).

This analysis of fabric mask adoption in Africa brings together research on material objects and scientific technology to show points of both departure and continuity in the social lives of Ghanaian masks. Research in the social studies of science considers the significance of pivot points in science, especially the adoption of new scientific norms, and the dimensions of scientific revolutions. Social studies of science ask why in some instances, there are swift and significant changes in thinking on a particular topic, while at other times, a new idea leads to contestation and gradual adoption of new norms (Kuhn, 2012). Works on changes in medical ideology and understanding of textiles are also helpful to interpret the adoption of a medical textile (Worboys, 2007; Tomes, 1990; Thagard, 1996; Moxey and Studd, 2000).

First, sometimes a new idea is difficult for people to accept, given the sway of previous theories. In considering the outbreak of cholera in 19th century America, a new type of bacterial infection that arose in the Himalayan region and spread around the world with
colonialism, historical scholarship shows that despite indications in 1854 that cholera was a water-borne disease, communities were slow to shift their understanding of disease causality from a punishment from the gods to an unseen animalcule (Rosenberg, 2009). Similarly, there can be gradual adoption of new textile classifications after a cultural rupture. William Reddy argues that in the case of shifts in how French people identified and understood textiles before and after the French Revolution, there was much continuity in thought for decades and major shifts were long in the making; “revolutions in thought are not accomplished quickly (Reddy, 1986: 278).”

Second, historians of technology remind us that sometimes the most significant and wide-reaching new products can also have a very slow rollout across time, hiding their ultimate revolutionary powers to transform, and obscuring “the shock of the old” (Edgerton, 2007). Surgical masks, especially handmade fabric ones, are an old technology, relatively low-tech and inexpensive, dating to c. 1900. Perhaps the mundane affordability of the mask made it less appealing to countries like the United States at the onset where in March 2020 health officials at the Centers for Disease Control, in a notable break with East Asian, African, and Eastern European nations, initially advised against wearing masks to combat the spread of Covid-19, and many government officials actively thwarted mask mandates throughout 2020 (2020c). In contrast, old, low-tech nonpharmaceutical options like masks were easily grafted onto social norms in a country like Ghana. Handmade fabric masks became an additional low-tech solution in the ongoing pantheon from bednets to bush pumps in African contexts, where leaders were used to making rapid and pragmatic choices and had less faith in their capacity to independently create viable therapeutics like vaccines (Redfield, 2016; Law, 2002; De Laet and Mol, 2000).

Ghanaian government responds to Covid-19: Mask mandates

Ghanaian elected officials prompted the rapid adoption of nose coverings as part of their efforts to contain Covid-19. Initially, the government of Ghana’s response to the global outbreak of a novel coronavirus in early 2020 was immediate and impactful. By 21 March, 2020, the president’s office closed all borders into the country, whether through ocean voyages, land crossings, or air travel. Additionally, the government required anyone entering Ghana to undergo testing and a mandatory two-week quarantine if they arrived from places with more than 200 known Covid-19 cases (Boakye-Danquah, 2020). In the initial stages, Ghana’s president, Akufo-Addo promoted a “can do” attitude and felt that the country’s path out of the pandemic would require local ingenuity. He could immediately see that there would be global scarcity around available PPE and any future pharmaceutical interventions. He pressed business leaders to explore “made in Ghana” solutions that could be manufactured locally. Specifically, he leaned on the clothing and garment sectors to make nose masks, surgical gowns, and caps for the expected surge (2020f). Some who heeded this call included Fred McBangonluri, the Ghanaian inventor who set to develop and manufacture a portable ventilator in a nation of 20 million with barely 100 intensive care unit beds (Siaw-Frimpong et al., 2021; 2020l).
The first sub-Saharan African country to attain independence from colonial rule in 1957, Ghana has a history of embracing science and technology through international partnerships. Ghana’s first president, Kwame Nkrumah, pursued Soviet-style mass science education and industrialization after British colonial authorities undermined education and emphasized trades like bricklaying. Ghana installed a massive hydro-electric dam and even put in agreements to import a nuclear reactor from the Soviet Union, although the project faltered after Nkrumah’s overthrow in 1966 (Osseo-Asare, 2019).

Ghana has relatively high levels of literacy and numeracy, mobile phone adoption, and health care infrastructure compared to other African countries, especially those in the West African sub-region that have faced more civil conflict and war. The country has, in recent years, pursued both high-tech and low-tech solutions to health care problems including a key campaign to increase hand washing at schools using portable sinks. It is also home to laboratories capable of running Covid-19 testing, including the Noguchi Memorial Institute for Medical Research, in which the Japanese government heavily invested to support the response to the virus.

Despite wide embrace of technology, Ghana imports many key healthcare products including syringes, vaccines, surgical masks, and hospital gowns. Given concerns over worldwide shortages of PPE, the Food and Drugs Authority and the Ghana Standards Authority partnered to create open access standards for respiratory products, including mask design and construction (2020i). These standards were uploaded and freely shared on the Ghana Standards Authority website. The standards suggested a three-layer cotton mask with the inner layer being bleached white. The standards suggested sizing from the ear around the chin to the opposite ear of between 29.5 to 33.5 cm. Interestingly, the standards taken up in Ghana for product labeling suggested that masks should not be worn for more than two hours at a time (2020h). While the standards did not mention if a mask should be pleated or sewn from pieces of fabric seamed down the middle, from interviews with dressmakers in Accra and Tema, the seamed design appeared to be more popular. It is unclear how this seamed design entered Ghana. It is sometimes known as an Olson-style after an open-source mask pattern shared in the United States by Unity-Point Health of Indiana (Fischer et al., 2020).

In two of the largest urban areas, Accra Metropolitan and Kumasi Metropolitan, the government required a partial lockdown of all schools, businesses, and houses of worship from 30 March to 19 April. During that time, the government contracted companies to make items they anticipated would be required for what was feared would be a massive onslaught of cases across African countries (2020b). These were the first two areas to face a mandatory mask mandate by April. During the lockdown, on Tuesday 14 April, the mayor of the capital city Accra, Mohammed Adjei Sowah, first promoted the use of masks, which he and others dubbed “nose coverings” in an effort to remind Ghanaians unfamiliar with them to pull the barrier layers completely over the mouth and nose. Sowah’s office used the hashtag #WearYourMask in social media and put in place plans to distribute at least 10,000 free made-in-Ghana masks to people residing in the Accra area. Photographs of prominent people like the mayor posing with nose masks helped to amplify and broaden the appeal of the campaign (see Figure 4). Sowah selected one made from green fabric printed with the
insignia of the Accra Metropolitan area, providing an air of officialdom and the seal of local government (2020e).

Thus, Ghana quickly adopted World Health Organization guidelines for social distancing, handwashing, and mask-wearing in public by April, particularly in the two largest cities of Accra and Kumasi. Venues like the Accra Shopping Mall required masks for entry and prominently displayed symptoms and information of coronavirus. Supermarket chains like Shoprite required temperature checks for staff and customers, as well as masks and social distancing. These measures were adopted at the street level in Accra, with merchants wearing masks by spring to sell bread to cars, or sit on a sidewalk and sell used clothing. Even small shops set up hand washing stations, often with just a basin fitted below a plastic container with a spigot in a context with limited pipe-born water.

Why did Ghanaians across the country then adopt nose coverings so quickly? At least three factors were definitely in play to push through this new dress code. First, the government applied coercion. Namely, on 15 June, 2020, President Akuffo-Addo put in place a national law, Executive Instrument 164, that could penalize those who did not wear nose and mouth coverings in public. Faced with fines between $200 and $1000 and a minimum of 4 years and a maximum of 10 years imprisonment, Ghanaians were alarmed and looked for masks to wear outside their homes (2020d). Second, as described in the next section, the country had a long tradition of local sewing with portable machines and knowledgeable designers dotting every neighborhood. Many had such small profit margins that they could quickly pivot to making nose coverings to satisfy much of the demand. Third, Ghanaians had recent memories of measures to combat terrible disease outbreaks, including cholera and Ebola. They also were commonly faced with other endemic diseases like malaria that required constant vigilance and awareness to survive, especially for families with children under five years old.

Additionally, the Ministry of Health and Ministry of Transportation provided guidelines for mask-wearing and hand sanitation, especially on public transport (Dzisi and Dei, 2020). By June, even the Minister for Health, Kwaku Agyeman Manu, tested positive for Covid-19. He recovered in the hospital and emphasized the need for constant awareness and vigilance (Amadu, 2020). In June, police arrested forty people for failure to wear nose coverings to show that the police would enforce these rules. The sweep involved twenty-five police officers and was a public performance called “Operation wear your mask (2020a).” Other countries in West Africa took a similar approach, suggesting that again access to seamstresses and experience with low-cost healthcare interventions like condoms and bednets provided a ripe terrain onto which to plant mask mandates (2020k).

By June, even people outside the major cities of Kumasi and Accra were increasingly aware of the Covid-19 outbreak and the impact of the national mask mandate. In the Volta Region, by the middle of the month, health workers identified 263 cases of Covid-19, and at least four people had died. The bulk of the cases were in the regional capital of Ho, which was approaching 100 cases. The mask mandate and related fines spurred local leaders to seek access to free masks. They were especially concerned about how street hawkers who survived on very little income and slim margins would find the money to purchase masks when they were among those most at risk (2020j).
National leadership remained key to modeling mask fashion as a new form of patriotism. The second lady of Ghana, Samira Bawumia, wife of the vice president Mahamudu Bawumia, was especially respected for her humanitarian activities coupled with bespoke high-fashion looks. Samira, who is Muslim incidentally, took up the nose coverings campaign, frequently appearing in well-coordinated outfits with matching masks and head coverings. She changed her Twitter profile photo to feature one of these looks (see Figure 4). By September 2020, she appeared more frequently in imported surgical masks, often in chic black, perhaps latching onto the very serious nature of the crisis and wanting better coverage than a fabric mask alone. At the inauguration of the president for a second term in January 2021, Samira wore a seamed mask custom made to coordinate with her dress of handwoven green, purple, and light pink kente cloth. Alongside her stood the president’s wife, first lady Rebecca Akufo-Addo, who wore a white surgical mask with a lace gown in the same shade of light pink.

Symbolically, women remained a cornerstone to the plan to have every family in nose masks. As early as 6 April, the Medical Women’s Association of Ghana began to circulate a graphic on social media for a #MaskIt campaign that showed a family—a man, woman, and two children of opposite genders in nose masks. This captured the sense that a form of love was to make sure your family was in masks. “Let’s Beat Corona. Families that care mask it. Is your masked?” The drawing of the masked mother and father had their arms around their children wearing colorful fabric masks, suggesting it was possible to use fabric to stop the spread of the virus (see Figure 5). This was reminiscent of previous campaigns to encourage small family size through the use of contraception that placed the health and success of the nation on the bodies of women seen as responsible for managing their birth rates. Masks joined pills and condoms as a new public health measure to shore up the Ghanaian family.

**Implementation: Ghana’s sewing businesses make masks**

The implementation of mask mandates in many countries, including Ghana, depended often on the participation of women who sew. The swift adoption of the old technology of surgical masks required a similarly long tradition of people sewing clothes for themselves and others (Osseo-Asare 2021). In the case of Ghana, fabric mask manufacture was immediately semi-professionalized through small companies and informal businesses, as opposed to hobbyists in places like Japan and the Czech Republic.

Ghana is a major importer of sewing machines and related parts. Women have generally received sewing machines as wedding presents. Common trade paths for both men and women include tailoring and sewing, with small businesses offering apprenticeship positions for nominal fees in exchange for low-cost labor (Biney-Aidoo et al., 2013). These small sewing operations are often set up on sidewalks and pathways outside of homes inside of small wooden kiosks and shipping containers. Many require minimal electricity and some still even use vintage-style black pedal and crank Singer sewing machines. More established shops are often on the grounds of the homes of wealthier designers in a constellation of small buildings. Here you might find industrial level machines including multi-thread sergers used to neaten inside seams and sew knit fabrics.
Fabric is also readily available. Peddlers walk through neighborhoods balancing stacks of folded yards of fabric on their heads, sometimes holding a crank sewing machine to do small minor repairs. Small food kiosks selling provisions like tinned milk, tomatoes, and onions to neighbors frequently also feature a few bundles of fabric. Towns and suburbs have central markets where there are sections with stalls selling fabric, thread, buttons, zippers, and other sewing accouterments. Much of the fabric is imported, including the high-end Dutch wax print brand, Vlisco, which also holds a stake in the Ghana wax print company, GTP (Ghana Textile Printing). Increasingly, knockoff fabric prints made in China and India have made wax print designs extremely affordable to some extent. While people wear imported second hand-clothing that is a byproduct of the fast fashion industry catering to wealthier countries, there is arguably a robust “fast fashion” realm of locally produced garments often made for single occasions of relatively inexpensive fabric.

A culture of ceremonies and the availability of low-cost fabrics has provided ample business for those in the sewing and textile distribution trades. However, this all came to a halt when the SARS-CoV-2 virus came to Ghana in early 2020. Awurabena Okrah, who runs Winglow Fashion Academy in Accra, was on the eve of celebrating her company’s 35th anniversary when the coronavirus crisis started. She was among the companies drafted to sew emergency PPE for the nation during the initial lockdown period. Compared to previous crises in the country, including the many coup d’états she had witnessed, Okrah noted that this particular crisis was less stressful because food was available. “Honestly, the other crises were more stressful I’ll say, because there was no food. This time because we were warned we shopped. And then we locked in, and it was comfortable. You just close your gates. It was like being on a holiday to be honest with you. As long as you were in, and you weren’t stepping outside you weren’t in danger (Okrah, 2020).” The defined time period of the lockdown gave many a sense that the country could work together to contain the pandemic once and for all.

Through her contacts, Okrah was sub-contracted to sew masks and gowns for hospitals as the country prepared for what it had initially believed would be an onslaught of cases. “We were involved during the lockdown in the production of PPE. And so because we also were active, I got a few of my staff to come down and lock them in with us. Give them some place to stay and cook their meals. And they worked. We all worked, sometimes closing at 12 midnight just producing those PPEs because of the volumes that were involved (Okrah, 2020).” Her small company produced about 1000 pieces of PPE (gowns, nose masks or head caps) each day during the lockdown. Four main companies precut the items, and then subcontractors like herself would stitch them. Once she completed the initial set of government orders, “Then we could design our own because then other companies also requested orders. So we showed them the different designs that we have to choose and then you can do sort of interesting [designs].” By May 2020, Okrah doubted that she would make nose masks for long. She noted that, “It is tiring. We don’t enjoy wearing [nose masks]. So I don’t want to invest in it. I don’t know what we will do with it after it’s all gone (Okrah, 2020).”

Linda Hammond also joined in the rush to create PPE for the nation at her company, Jem AfrikCreations, in Accra. Like Okrah, Hammond was a well-established designer...
running a stable fashion house with the capacity to deliver for the government contract. Hammond had recently registered her company in the United States, and the emerging pandemic thwarted efforts to expand abroad fully, further compounding challenges of running a Ghana-based fashion house (Sarpong et al., 2011; Fianu and Zentey, 2000). She found herself in Accra at the start of the pandemic and instead jumped into making nose masks and other PPE during the lockdown. Hammond had grown up in Accra, where she spent her afternoons hanging out with tailors and seamstresses, working as their errand girl and learning techniques along the way. In particular, when she was around ten years old, she moved to the Adabraka neighborhood downtown that hosted a thriving street scene of cottage sewing. Hammond was intrigued, although many of the people she observed had limited secondary and tertiary education, which complicated their budgeting and operations. In contrast, Hammond was able to attend college. It was when she was a student at the University of Science and Technology in Kumasi in the early 1980s that she first had access to a sewing machine. She helped take care of twin children for one of her lecturers who lent her the machine. Hammond began sewing clothes for friends in college and staged a fashion show by the time she graduated. This love of fashion design blossomed from a home business into an international company that shipped batik shirts and dresses to places like South Africa and the United States (Hammond, 2020).

Fashion designers without government connections and capital to work as subcontractors were also able to join in the informal production of nose coverings. Like Okrah and Hammond, seamstresses in smaller shops also started making masks around the time of the initial lockdown (Anku-Tsede and Arthur, 2021). Theresa Osei Acheampong recalled how things shifted overnight, leading her to begin sewing nose masks (see Figure 6).

Before Covid-19, business was good. We get to sew for people. Every week we are busy because of patronage. [Covid-19] really affected us, business became very slow. No church services, no naming ceremonies, everything came to a halt so it affected us. We come to work and the whole week, nobody comes to sew. We will come and sit here the whole day doing nothing then go back home... We diverted into producing nose mask, that was when we started sewing nose mask. We still make them (Acheampong, 2020).

Flexible, small sewing operations that were price sensitive were able to pivot and take the risk of making new products in the face of the pandemic. Another seamstress, Afia Kyerewaa had just opened a small sewing shop in March 2020. She had spent three and a half years as a sewing apprentice and then had worked for an additional ten years. Unfortunately, just as she was establishing a new shop:

Covid-19 happened. So, I couldn’t start operations as planned. This business, we sew for people for churches, when someone is getting married, they bring fabrics and we sew for them but because of the virus, everything came to a standstill so I could not start operating it (Kyerewaa, 2020).

Instead, she quickly began sewing masks during the three months that business lagged before she could properly launch her new shop (see Figure 7). She explained that
instead of making apparel, “We were sewing nose mask. We made orders for people who went to sell them. We went to town to sell some ourselves too and that was what we were doing to manage our situations.” By September, she was able to refocus her business on sewing clothes; “But when someone places an order [for nose masks], then we make them. But we are not busy making nose masks like at the beginning of the pandemic.” Other women involved in informal PPE production included Mawusi, a seamstress based in Tema who pivoted from dresses to masks (see Figure 8).

By September 2020, conversations with people selling masks in traffic suggested that there was a downturn in mask orders. A seamstress named Bea explained how she was still an apprentice but took on orders herself in the early months. She said that when the lockdown came on, people brought mask orders, and she spent much of the week or two sewing masks which she then sold. Initially, she continued to take mask orders, but after several months people went back to attending church services and other public events, and her orders reverted to primarily clothing (Bea, 2020). Doris, who stood along the road to attract customers from their cars, used to sell plastic wares like cups and bowls. With the advent of coronavirus, she transitioned to selling imported plastic face shields and locally produced masks that a seamstress made for her. But by September, she noted, “Initially, people were buying, patronage was very good but now it has reduced because people are saying the virus is gone so they are not buying as in the beginning of the virus (Agbamatsi, 2020).”

It was not only women who made and sold masks. For instance, Tina, a trader in Lapaz near the bus stop, explained how she used to travel to Togo to get apparel to sell. However, when the borders closed, she purchased fabric locally and gave it to a friend who was a tailor (a man) to sew into masks. Similarly, a trader named Prince expressed how he made most of his money at a kiosk selling mobile money and phone recharge cards but had started putting out masks when the pandemic started as essentially a side hustle. People living with very close margins found that there was a short boom when many people purchased masks, and if they were nimble and flexible, they could make some money off the situation. Nevertheless, not everyone was as successful on jumping on the nose mask wave. For instance, the tailor, Bismark, explained that he was reluctant at first to pivot into PPE, “because making of nose mask is a lazy process” that did not showcase the skills he had developed over many years:

Covid has affected my business very much. Especially with the lockdown, people were not going out so nobody was patronizing my business. The little money I had saved was what I was surviving on, I spent it all. Later when people were sewing nose mask, I sewed too but later the nose mask flooded the system and the price also reduced so I stopped. Those who started producing the nose masks at the beginning of the pandemic made a lot of money before I came to the realization to join in the production (Owusu, 2020).

Further, some opted to just sell imported surgical masks, like Belinda, a receptionist at a Chinese-owned hotel in Accra. She also found that by September, interest in her supply of masks was waning (Belinda, 2020). The combination of local craft sewing and informal traders allowed for the rapid implementation of Ghana’s mask mandate until the market was quickly saturated.
Model mask nations face later surges

The mask mandate combined with early testing and closing the borders seemed to have a dramatic impact on Ghana’s Covid cases. During the first year of the SARS-CoV-2 pandemic, very few Ghanaians lost their lives to Covid-19 despite initial concerns. Between March and December, the country documented only 335 fatalities from the novel coronavirus. After the initial lockdown period and once the president lifted restrictions on gatherings at churches and houses of worship by 1 August, people interviewed in Accra commented that coronavirus had come and gone. At that point, only 161 people were reported to have died from Covid-19 in the country (Huaxia, 2020). Borders reopened 1 September 2020, and instead of a two-week mandatory quarantine in a hotel near the airport, arriving air passengers needed a clear Covid-19 test 72 h before a flight and a $150 Covid-19 screen on arrival to Ghana before being released. By December 2020, many Ghanaians had the mistaken impression that the pandemic was over. Final campaigns and hometown voting for the national presidential and regional elections brought many people crisscrossing the country in early December (see Figure 9). And then wealthier Ghanaians living abroad in places like the United Kingdom and the United States, where many Covid-19 restrictions remained in place, opted to travel to Ghana to spend their winter holidays.

By early 2021, the Ghanaian experience seemed to be following trends that were also happening in countries held out earlier on as models for rapid Covid-19 response and fast local manufacture and adoption of masks, which then had subsequent outbreaks. As in Ghana, the Czech Republic promoted mask-wearing on par with East Asian countries like Taiwan, Singapore, South Korea, and Japan. For example, by 18 March 2020, women in the Czech Republic launched a portal to share information on mask making.
Their rapid crowdsourcing of techniques also impacted other countries where people were hunting for mask ideas as the world braced for the emerging global pandemic. While Ghanaians peddled masks on every street corner, in the Czech Republic, mask makers did guerilla distribution, hanging free masks on trees to encourage everyone to take one and wear it. Websites integrated geotags to find locations where people needed masks and better allocate to those in need. At least 600,000 handmade masks went out through one such service alone (2020g). Like Ghana, the Czech Republic also used coercive tactics to encourage use, including an $800 fine for not wearing masks (2020n).

The Czech Republic became a model of early response to the pandemic and the envy of other countries, like the United States, which did not instate a national mask mandate and was in the midst of rising cases by July 2020 (Kashkett, 2020). However, by fall 2020, the Czech Republic found that COVID-19 cases were rising. Indeed, at one

![Figure 5. Medical Women’s Association of Ghana #MaskIt Campaign, April 2020 (Source: Medical Women’s Association of Ghana, used with permission).](image-url)
point in late October 2020, there were more cases per million in the country than anywhere else in the world. Several factors contributed to this, namely what commonly came to be known as “pandemic fatigue” and a false sense of security. People stopped wearing masks.

Figure 6. Theresa Osei Acheampong (seated) with an apprentice at her sewing shop with masks on the table (Photo by Eyram Amaglo).
Unfortunately, it seemed Ghana would not be spared either after a year of relative success containing the virus. From the first weeks of January 2021, it was clear that Ghana was in a second wave of coronavirus as new variants began to spread worldwide. So, government leadership decided to crack down on the use of face masks. In a very public sweep, within four days in Tema, the sister city to the capital, Accra, 105 people were arrested for not wearing masks. Ninety-six of those arrested were men, and from their photographs where they sat lined up in rows with heads bowed, many of them appeared to be younger street hawkers (Glover, 2021).

Further, schools were set to reopen after a long period of shutdown, making it imperative that children have access to masks. Some parents felt it was the government’s role to provide these masks, after various promises along these lines from local and national leaders remained only partially fulfilled. Even children with masks did not readily take to wearing the new accessory for longer periods outside the home. Gertrude Tepreku, a teacher in Tema, explained how hard it was for her 7-year-old child after only three days of school in the new year. “She is comfortable being in school but with the nose mask, she is not comfortable using it throughout the day because she was complaining. They had to wear it throughout, except they are eating or drinking water that they remove it. This is something that we are not used to, and as children when we gave birth to them, they are not used to it. It just came into the system all of a sudden, so we have to force it.

Figure 7. Everyone in masks: Afia Kyerewa’s new sewing shop. Note: industrial Brother brand machine (left) and three Singer hand-crank machines (right). Photo by Eyram Amaglo.
on them to use it, which they are doing (Tepreku, 2021).” Tepreku had reservations about sending her child to school at all, but as a teacher herself who had not received pay during the ten months that schools were closed, she was also eager to obtain funds for her family again.

Figure 8. Seamstress Mawusi displays masks she designed and made at her shop in Tema, Ghana, September 2020 (photo by Eyram Amaglo).
In the first few weeks of the new year, the number of Covid-19 fatalities in the country doubled quickly. All eyes then turned to a possible vaccine response, with Ghana receiving the first shipment of the Covax free vaccine relief sent to an African country on 24 February ahead of the second nation to receive it, Rwanda. However, the roll out of vaccination in African countries remained slow, with less than 2% of people vaccinated by mid-2021. In the absence of a decline in cases, the mask mandate remained, and women who had thought Covid-19 would only be a temporary condition continued to make and sell masks.

Conclusions

Nose coverings in Ghana represented a rapid adoption of a low-cost technology. While fabric surgical masks had a long history stretching from the late nineteenth century, handmade masks were not widely used for containing upper-respiratory infections outside of East Asian countries. Given previous experiences with barrier control of infections, including condoms and bednets, nose coverings could be easily grafted onto Ghanaian public health policies. Nose coverings can be read as a continuation of low-cost solutions to healthcare crises in West Africa. Simultaneously, they can be a point of rupture and significant change since Ghanaians did not wear textile face masks prior to 2020.
The national mask mandate in Ghana set into law on 15 June 2020 required the active participation of local sewing shops across the country. Given early scarcity of commercial blue surgical masks, Ghanaians supplemented their supply of masks with cloth nose coverings cut and sewn in small informal neighborhood shops. The owners of these shops had slim margins that depended on sewing clothing for large family gatherings like weddings, funerals, as well as class reunions and religious services. With bans on large gatherings, many seamstresses and tailors pivoted to make fabric masks. Although those interviewed saw this as a temporary activity, the longevity of the covid pandemic meant that demand continued into early 2021, albeit at lower volumes than the initial weeks of the pandemic.

This article seeks to delineate an African case study within the growing literature on mask mandates and regional mask wars and disputes over face coverings during the Covid-19 pandemic. Here, the focus is on the interface between government mandates for nonpharmaceutical interventions and the role of women seamstresses and street peddlers in the informal economy. This study suggests avenues for further research. These include examination of the relative fit and filtration of Ghana-made masks and the ways that African nations are adopting and using pharmaceutical interventions including Covid vaccines. Again, experience with large scale vaccine campaigns in rural areas suggests that African countries may actually be fast to roll out these important therapeutics in the arsenal against the novel coronavirus once supplies increase. Countries like Ghana, as well as other regional neighbors like Senegal and Nigeria certainly adopted masks and popularized their use in the early days of Covid in an unexpected but fortuitous trend to fight a new disease.

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Notes

2. Oral history interviews have been collected from a variety of individuals engaged in the health sector using WhatsApp, zoom, phone calls from Austin, and on-site with a research partner in Accra. These include conversations with veteran fashion designers tasked with producing personal protective equipment (PPE) for government during a nation-wide lockdown, small shop owners producing face coverings, and street peddlers selling masks. The goal of this project is to trace the rise and fall of different health interventions and the experiences of business leaders on the frontlines of providing prophylactics. The research partner has collected additional photographs of street life, collated transcripts, and provided some video. The research uses a semi-structured interview format, with primary questions including: How did you become involved in your work? What have been some of the changes over the years? What impact has Covid-19 had on your work? May we use your real name and picture in reporting your story?

3. Indeed, the first instructions that I found, downloaded, tried, and posted to Instagram by March 21 were via a Pinterest image I saw around this time linked to a Czech language website with several mask tutorials https://www.caramilla.cz/site-rouska-usterseny/

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