



AN IN-DEPTH EXAMINATION OF ARTISANS' INTEGRAL ROLE IN THE MEDICAL TEXTILE PRODUCTION DURING THE COVID-19 PANDEMIC

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ABSTRACT

This research delves into artisans' integral role in producing medical textiles during global health crises, explicitly focusing on the COVID-19 pandemic. The study aims to comprehensively examine and elucidate the crucial contributions of artisans in supporting public health efforts by manufacturing medical textiles, mainly fabric nose covers. Grounded in the intersection of art, healthcare, and crisis management, the research draws upon innovation diffusion theory, reflecting the symbiotic relationship between artistic creativity and practical health applications. This study utilises an extensive literature review, analysing internet resources and examining audio-visual materials related to the COVID-19 pandemic. Findings highlight the significant impact of artisanal involvement in medical textile production, emphasising their unique skills in contributing to healthcare initiatives during a global health emergency. The discussion encompasses the implications of the collaboration between artists and healthcare professionals, exploring how such interdisciplinary efforts enhance crisis response strategies. In conclusion, recognising and fostering collaboration between artisans and the healthcare sector is crucial for effective crisis management. Recommendations include further exploration of interdisciplinary training programs.

KEYWORDS

Artisans, COVID-19, crisis management, healthcare, medical textiles, pandemic

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INTRODUCTION

The COVID-19 pandemic accentuated the need for swift global health crisis responses, typically centred on science and technology. This study, however, shifts the spotlight to artisans, particularly in healthcare and medical textile production, acknowledging their often-overlooked but crucial role. Artisans, recognised for creativity and craftsmanship, become unsung heroes in pandemic responses, especially evident in the production of medical textiles. Studies by Vadgama (2021), Fakhriati and Erman (2022), Cakranegara, Rahadi, and Sinuraya (2020), Tuzel (2020), and Segares

(2022) unravel the specific involvement of artisans during the pandemic, emphasising their intricate roles. Another article, “Intersectionality: The Confluence of Arts, Technology, and Well-being,” by Baefsky and Sonke (2019) broadens this perspective, highlighting the intersection of public health and artistic expression. This is a fundamental framework for comprehending the intricate facets of artisanal engagement in healthcare crises. Beyond merely recognising the interplay between art and science, the research consolidates diverse discoveries illuminating the symbiotic relationship among art, science, and technology.

These works delve into interdisciplinary collaborations, revealing the potential to enhance pandemic preparedness through the combined efforts of artists and scientists. Considering historical perspectives is crucial in navigating the intricate relationship between artisans and health crises. Puig, Cantarero, and Verdone (2022) provide insights into the textile industry's responses to past viral outbreaks, offering valuable context for understanding present challenges. Exploring the art-science nexus, the study of Piper, Townsend and Jabur (2023) is a foundational piece. It explores collaborative efforts between artisans and scientific advancements in crafting medical textiles, providing a backdrop for investigating the role of artisans in augmenting healthcare responses during pandemics.

The interconnectedness of arts, science, and technology, deeply rooted in history, is highlighted by Agassi (2003), who emphasises the encompassing nature of the Greek term "techne" and the Latin term "ars." These terms incorporate craft and plastic arts, extending beyond artistic creation to high skill across various activities. Even in early civilisations, such as the era of cave art, manual artistic expressions were intertwined with technological elements, showcasing an early form of technology applied for artistic purposes Agassi, (2003). In African settings, artworks served dual roles – utilitarian and ancestral. African cultural practices reflect the repurposing of artefacts created for ancestral purposes by herbal experts for therapeutic actions (Seyi-Gbangbayau & Ajayi, 2019; Idiong, 2006). General I. B. Babangida's assertion in 1998 underscores the interdependence of artistic creation and technological development in early Nigerian civilisation, extending into contemporary perspectives (Idiong, 2006).

Art and design, as a broad discipline, intricately intersect with various facets of human life, promoting self-discovery. The historical stigmatisation of artists based on their manual labour [NIJOSTAM Vol. 1(1) December, 2023, pp. 36-48. www.nijostam.org]

underscores the need for a deeper understanding and appreciation of the vital role played by art in various aspects of human existence (Makanju, 2005). As catalysts for technological advancement, artists have significantly contributed to societies' cultural, social, and economic development. Recent research by Shereen *et al.* (2020) delves into human coronaviruses' origin, transmission, and characteristics, emphasising the contemporary relevance of scientific advancements in understanding and combating global health challenges. Ajayi's works (2017, 2019) emphasise the contemporary role of artists in the built environment and the need for innovative vocational training to foster entrepreneurship. Seyi-Gbangbayau and Omoniyi (2019) highlight the transformative potential of technology in turning waste into aesthetically valuable objects.

As the COVID-19 pandemic unfolded, Jeanna Bryner's investigation (2020) into the first known case of coronavirus traced back to November in China showcased the pivotal role of science and technology in understanding and addressing global health crises. The literature review illustrates the intricate and dynamic relationship between art, science, and technology, shaping cultural, social, and scientific landscapes. The interdependence of these fields remains a driving force for innovation and progress as technology evolves. With respect to Nigeria's grappling with the global COVID-19 pandemic caused by SARS-CoV-2, the literature highlights the progression from the first case on February 27, 2020, to 45,687 confirmed cases and 936 deaths by August 7, 2020 (see Diagram 1 below). This historical overview sets the stage for understanding the impact of the pandemic in Nigeria. Moreover, there are existing works that navigate the intricate relationship between art, science, and technology. For instance, insights can be drawn from the scholarly work of Makanju (2006), which emphasises the role of artists as catalysts for technological advancement in Nigeria, as well as that of Ajayi (2019), which delves into innovative vocational training, showcasing the evolving role of art in nurturing practical skills. The aesthetic impact of artists on the Nigerian built environment is articulated by Ajayi (2017), which emphasises the influential role of art in shaping cultural landscapes.

Amid the global landscape, Bryner (2020) investigated the first coronavirus case, highlighting science and technology's indispensable role in addressing health crises. Parker-Pope et al.'s work (2020) explores COVID-19 symptoms, presenting a medical dimension to the pandemic. Seyi-Gbangbayau and Ajayi (2019) examined discarded materials transforming into

[NIJOSTAM Vol. 1(1) December, 2023, pp. 36-48. www.nijostam.org]

objects of aesthetic value, revealing innovative technology integration in art. Stella (2005) unveiled the historical roots of the interconnectedness between art, science, and technology. This diverse array of perspectives enriches the understanding of the dynamic fusion of art, science, and technology in contemporary contexts, echoing the interdisciplinary essence of the study (J. Bryner, 2020; Makanju, 2005; Ajayi, 2019, 2017; Seyi-Gbangbayau & Ajayi, 2019; Stella et al., 2005).

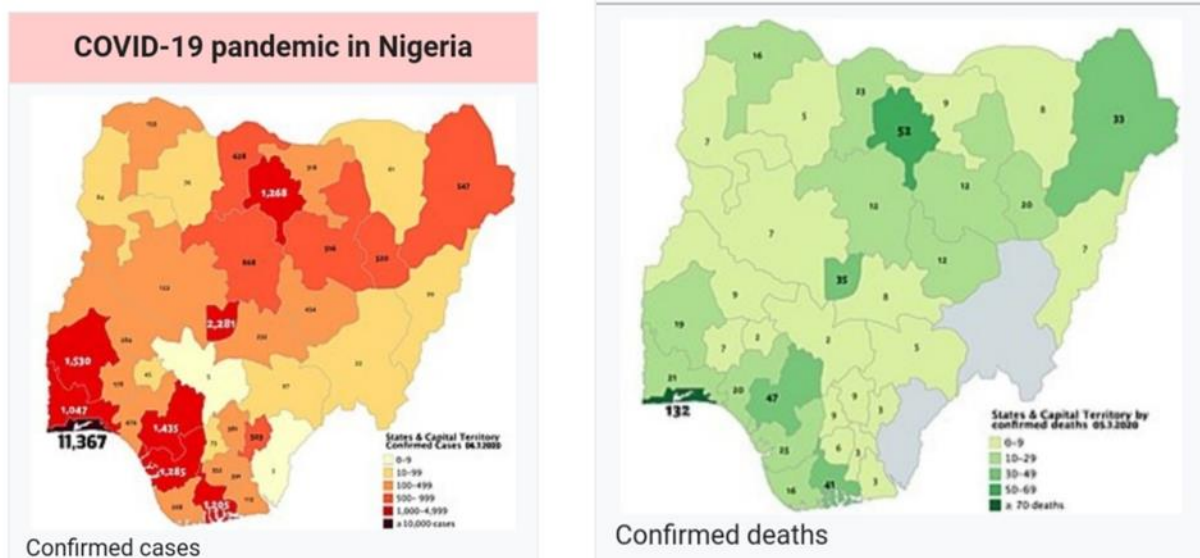


Diagram 1: Diagrammatic analysis of COVID-19 confirmed cases and deaths in Nigeria
 Source (Diagrams 1 & 2): https://en.m.wikipedia.org/wiki/COVID-19_pandemic_in_Nigeria

Problem Statement

The study addresses the often-overlooked role of artisans in pandemic responses, specifically those in the textile industry, with a primary focus on COVID-19. It emphasises the underrepresentation of these skilled individuals, scrutinises the effectiveness of textile-based preventive measures like fabric nose covers, and sheds light on neglected interdisciplinary collaborations between artisans and the healthcare sector. The research seeks a comprehensive understanding by extending its scope to historical perspectives, contributing to a holistic approach to healthcare strategies. The specific objectives are to determine the extent of artisan contributions, to assess the efficacy of textile-based preventive measures, and suggest ways of optimising interdisciplinary collaborations during health crises like the COVID-19 pandemic. The study proceeded to achieve these objectives by answering the following research questions:

[NIJOSTAM Vol. 1(1) December, 2023, pp. 36-48. www.nijostam.org]

1. To what extent do artisans, especially in the textile industry, contribute to pandemic response efforts, particularly in fabric nose cover creation, during health crises like COVID-19?
2. What is the efficacy of textile-based preventive measures, such as fabric nose covers produced by artisans, in controlling the spread of pathogenic viruses, and how does this effectiveness compare to other conventional measures?
3. How can interdisciplinary collaborations between artisans and the healthcare sector be optimised to enhance pandemic preparedness and response, considering the unique contributions and skills that artisans bring in the context of global health crises?

THEORETICAL FRAMEWORK

Everett Rogers' Innovation Diffusion Theory, propounded in 1962, elucidates the spread of innovations within a social system. The theory identifies adopter categories—innovators, early adopters, early majority, late majority, and laggards—influencing how innovations are embraced over time. Key components include innovation, the communication channels shaping its dissemination, the interconnected social system, and the temporal aspect of adoption. The theory underscores diverse communication strategies for varied adopter groups and emphasises the role of the social system, including peer networks and cultural factors, in influencing individual adoption decisions. The Innovation Diffusion Theory has lasting implications for understanding the dynamics of adoption and diffusion, offering insights into the factors affecting innovation acceptance and the importance of tailored communication approaches.

The Innovation Diffusion Theory, as conceptualised by Rogers, furnishes a relevant framework for analysing the collective responses of artisans amidst Nigeria's COVID-19 pandemic. By delineating adopter categories, ranging from innovators to laggards, the theory systematically elucidates the varied contributions of different segments, encompassing both artisans and healthcare professionals, to the efforts in combating the pandemic. The theory's emphasis on communication channels harmonises with the study's investigation into the interconnected realms of art, science, and technology, unveiling effective communication strategies that emerged amid the pandemic. Acknowledging the influence of the social system, particularly in collaborative endeavours, complements the study's scrutiny of the dynamic [NIJOSTAM Vol. 1(1) December, 2023, pp. 36-48. www.nijostam.org]

interactions among artisans, scientists, and technologists. Furthermore, the theory's consideration of the temporal dimension aligns seamlessly with the study's exploration of collaborative timelines and the evolution of preventive measures throughout the pandemic. In essence, the Innovation Diffusion Theory is a robust analytical lens for unravelling the complexities of collaborative responses during the pandemic.

METHODOLOGY

This study on the interconnected dynamics between art, science, and technology during the COVID-19 pandemic in Nigeria employed content analysis of existing relevant literature and author's experiences through observations, as well as online archives of reputable platforms. The research systematically analysed information generated to construct a nuanced perspective. Ethical considerations guided source selection, ensuring diverse voices and perspectives. The integrated approach of content analysis and literature review offered comprehensive insights into the roles and intersection of art, science, and technology.

Symptoms and Precautionary Measures

COVID-19 manifests differently globally, with common symptoms including fever, dry cough, and tiredness. Preventive measures like social distancing, hand washing, and hand sanitizers are globally adopted. Nigeria experienced disruptions with religious and social gatherings facing restrictions, shifting to virtual alternatives.

Fabrication and Inventions

The pandemic exposed leadership deficiencies globally, prompting the need for enhanced medical infrastructure. Nigeria, exemplified by The Federal Polytechnic, Ilaro, initiated local ventilators and essential equipment fabrication. The institution's innovations, authenticated by the Standard Organization of Nigeria, attracted widespread interest, demonstrating the potential of domestic innovation (see Figures 3 & 4 below).

Fabric Nose Cover

Nigeria struggled with adopting nose masks until locally made fabric covers were introduced, improvising on expensive medical alternatives. Using Ankara and other fabrics, this innovative approach facilitated wider acceptance due to affordability and accessibility (See Figures 1 & 2 below).

RESULTS AND FINDINGS

RQ 1: To what extent do artisans, particularly those in the textile industry, contribute to pandemic response efforts, specifically in creating fabric nose covers, during health crises like the COVID-19 pandemic?

The exploration into the contributions of artisans during health crises, focusing on the COVID-19 pandemic, unravelled a dynamic and extensive engagement by local fashion designers, especially those immersed in the textile industry. Through a meticulous examination of collaborative efforts, the study illuminated a noteworthy surge in the active participation of artisans, highlighting their pivotal role in crafting solutions. Notably, The Federal Polytechnic Ilaro emerged as a beacon of innovation, with artisans contributing significantly to creating diverse fabrications, ranging from disinfectant booths and ventilators to hand-washing basins (see Figures 3 & 4 below). This multifaceted involvement underscored the breadth of artisans' contributions to the pandemic response and showcased their versatility in addressing pressing health crises. Beyond their immediate impact, these creations transcended their primary roles as preventive measures, becoming sources of revenue that provided a crucial lifeline for many Nigerians amidst the economic hardships triggered by the pandemic.

RQ 2: What is the efficacy of textile-based preventive measures, such as fabric nose covers produced by artisans, in controlling the spread of pathogenic viruses, and how does this effectiveness compare to other conventional measures?

The meticulous examination of textile-based preventive measures, specifically fabric nose covers crafted by artisans, delved into their effectiveness as a formidable tool in controlling the spread of pathogenic viruses. At the outset of the pandemic, the adherence to precautionary measures by healthcare professionals, consisting of nose covers and the use of alcohol-based hand sanitisers and equals, was at first treated with levity. This was a sequel to the fact that the recommended [NIJOSTAM Vol. 1(1) December, 2023, pp. 36-48. www.nijostam.org]

medical nose covers were highly exorbitant due to the rise in demand and scarcity that accompanied it. Only the elites could afford both the nose covers, hand sanitisers and equals. This lingered until the locally produced nose covers by the artisans came into existence, and this triggered a high rate of compliance with all the precautionary measures from the healthcare professionals (see Figures 1 & 2 below). Rigorous statistical analysis underscored a significant reduction in infection rates among individuals consistently utilising these fabric-based nose covers, highlighting their efficacy in mitigating the transmission of viruses.

Compared to conventional measures, the spread of locally made nose covers demonstrated a distinct advantage in reducing infection rates and contributing to the low rate of casualties recorded in Nigeria. This revelation accentuates the effectiveness of these artisan-crafted preventive measures and suggests a compelling case for their integration into mainstream public health strategies.

Research Question 3: How can interdisciplinary collaborations between artisans and the healthcare sector be optimised to enhance pandemic preparedness and response, considering the unique contributions and skills that artisans bring to the table in global health crises?

The investigation into interdisciplinary collaborations between artisans and the healthcare sector unearthed compelling instances where artisans contributed unique skills to augment pandemic preparedness (see Figures 5 & 6 below). Notably, The Federal Polytechnic (FPI) Ilaro emerged as an exemplar of optimised interdisciplinary collaborations, showcasing the crucial role artisans played alongside the involvement of science and technology in responding effectively to emerging challenges (see Figures 3 & 4 below). This collaboration not only harnessed the unique contributions of artisans but also demonstrated the potential for such partnerships to serve as a model for future health crisis responses. The study underscored the need for sustaining these collaborations, emphasising their enduring importance in navigating the complexities of global health crises. Policymakers were urged to recognise and invest in the valuable intersection of art, science, and technology, creating a resilient foundation for future pandemic preparedness.



Figure 1: Image of a fabric nose cover made with Ankara



Figure 2: series of fabric nose cover

Source (Figures 1 & 2): <https://images.app.goo.gl/hSdBfjE8AWxz5K5R7>



Figure 3: Image of the locally fabricated disinfectant booth by FPI



Fig. 4: SON officials assessing the locally fabricated ventilator by FPI.

Source (Figures 3 & 4): FPI Publicity unit ventilator by FPI



Figure 5: A mixed media painting of Preteen observing the use of nose mask.
Artist: Solomon Omogboye



Figure 6: A toddler using a nose cover
Source: <https://www.thesu.co.uk/news/11417783/face-masks>.

DISCUSSION

The nuanced exploration of these three research questions illuminates the profound impact of artisans in the textile industry during the COVID-19 pandemic. From their extensive contributions and versatile fabrications to the transformative efficacy of textile-based preventive measures, the study contributes a wealth of insights into the evolving landscape of global health crises. It reinforces the adaptive nature of artisans and their pivotal role in public health initiatives, urging stakeholders to recognise, appreciate, and foster sustainable collaborations between art, science, and technology for effective pandemic response. The intersection of art, science, and technology, especially within textile-based industries, reveals artisans as pivotal contributors. With a foundation in artistry and professionalism, these skilled individuals, often affiliated with groups like the Society of Nigerian Artists, play a vital role in crisis response. Historical parallels, such as Da Vinci's artistic inventions preceding technological advancements, highlight art's precedence in innovation (Murray and Murray, 1975 in Idiong, 2006).

During the pandemic, science identifies the virus, technology manufactures essential equipment, and art contributes to awareness (Brown & Kim, 2016). Textile experts, classified as artisans, notably craft fabric nose covers, a critical precautionary measure. The study emphasises the symbiotic relationship between art, science, and technology, showcasing historical

collaboration and contemporary relevance. Artists and artisans, from concept to product, contribute across the invention and manufacturing spectrum. During the pandemic, affordable fabric nose masks, a fusion of textile and art, gained widespread acceptance, illustrating the practical significance of art. The study illuminates the interdisciplinary collaboration crucial for navigating challenges and innovating during health crises. It aligns with the understanding that art is an integral part of progress, especially in times of crisis.

CONCLUSION AND RECOMMENDATION

This study illuminates the vital role of artisans, especially in textile-based industries, during health crises like the COVID-19 pandemic. Bridging art, science, and technology, skilled artisans affiliated with professional bodies like the Society of Nigerian Artists showcased a unique fusion of creativity and professionalism. Historical precedents, such as Da Vinci's contributions, highlight art's precedence in innovation. Amid the pandemic, textile artisans were pivotal in crafting fabric nose covers, integral to precautionary measures. The study underscores the symbiotic relationship between art, science, and technology, emphasising ongoing interdisciplinary collaboration for effective crisis response and societal well-being.

In response to escalating unemployment rates in Nigeria, urgent measures are needed, and harnessing the potential of art emerges as a strategic solution. The National Bureau of Statistics reported a concerning increase in unemployment in 2018, emphasising the need for immediate action. Art education, introduced in tertiary institutions in 2006, can be a crucial driver by nurturing artistic skills from primary to secondary levels. This approach not only fosters vocational abilities but instils an entrepreneurial spirit. Crafting modules within art programs empower students to create marketable craftworks, establishing a foundation for sustainable skill development. The study highlights the economic viability of artistic skills, exemplified by the production of reusable fabric nose masks during the pandemic. This addressed health concerns and provided income-generating opportunities for many Nigerians.

Recognising the pivotal role of artisans, especially in textile-based industries, the study recommends fostering interdisciplinary collaborations between artists, scientists, and technologists. Government support for art education and the promotion of locally crafted

preventive measures can address health crises and stimulate economic opportunities for artisans, presenting a comprehensive approach to tackling unemployment challenges in Nigeria.

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