UNIJERPS
Unizik Journal of Educational Research and Policy Studies VOL.17 (1); ***January-June, 2024*** https://unijerps.org
2023 Impact Factor: **6.834;** 2022 ***Impact Factor***: 5.156; ***2021 Impact Factor: 5.641;***
2020 Impact Factor: 5.355. *Indexing and Impact Factor URL:* http://sjifactor.com/passport.php?id=21363

EXPLORING INNOVATIVE DIGITAL RESOURCES AND MODELS FOR BRIDGING MENTAL HEALTHCARE GAP IN NIGERIA

Ugwu, Ndubuisi Friday (PhD),
Department of Health Education,
Federal University Oye-Ekiti
ndubuisi.ugwu@fuoye.edu.ng

Toyin Segun Onayinka (PhD),
Department of Mass Communication,
Federal University Oye-Ekiti
toyin.onayinka@fuoye.edu.ng

Kamorundeen Taiwo Sanni (PhD)
Department of Guidance and Counseling,
Federal University Oye-Ekiti
kamorundeen.sanni@fuoye.edu.ng

ABSTRACT

The nation of Nigeria is currently grappling with a range of socioeconomic and security challenges, which have contributed to the worsening of mental health issues among its population. However, there are insufficient mental healthcare professionals, services, and infrastructure to meet population needs. Available resources are difficult to access due to high costs, distance, and stigma. Guided by the diffusion of innovations theory, this paper advocates leveraging the growing digital technologies and models successfully utilized in developed countries to fill Nigeria's mental healthcare gaps. Specific digital solutions proposed include adopting: (i) models successfully used in USA, Australia UK, Norway, Canada and other parts of Europe; (ii) innovative digital platforms like chatbots and mobile apps for telepsychiatry; (iii) access expansion and literacy promotion through digital strategies to bridge the rural-urban divide; and (iv) establishment of Policy framework for telepsychiatry practice, privacy and licensing. The paper suggested implementation plan, funding mechanism, as well as monitoring and evaluation to ensure success of the digital solution. In conclusion, Nigeria must quickly adopt innovative digital technologies and models to close its considerable gaps in mental health services and infrastructure. With a theory-guided, evidence-based approach tailored to the nation's unique needs, technology has great potential to transform Nigeria's overwhelmed mental healthcare landscape.

Keyword: Telepsychiatry, Mental health, Digital technologies, Socioeconomic difficulties, Nigeria

Background

Mental health represents a state of well-being that indicates an individual's ability to endure stress, manage negative feelings, and effectively navigate the challenges of life. According to (Malette, 2023) mentql health includes all forms of well-being, such as, socio-economic, psychological, emotional, psychological and happiness that determine how we handle activities as human beings. Various societies and nations institute different methods of enhancing their citizens well-being. For instance, the society practice a proactive system of determining steps that could be taken to reveal those requiring assistance in their mental health journey and recommend how they could be assisted (Reinert et al., 2021). In emergency situations, people react differently to factors influencing and pertaining to mental health (Oreffice & Quintana-Domeque, 2021) hence, different scenarios often play out when it comes to mental during good and bad times.

Nigeria has witnessed multiple challenges in different areas of national life. This has been attributed to a sharp increase in mental health problems among citizens in recent years (Wada,Rajwani, Anyam, Karikari, Njikizana, Srour & Khalid,2021; Ugwu, 2021). There has been persistent insecurity in many regions including the ongoing terrorist insurgency, militancy in the Niger Delta, farmer-herder clashes and kidnapping for ransom have taken a significant psychological toll on the population (Zubairu, 2020). Sixty-three per cent of Nigerians experience stress, worry or anxiety daily due to the prevailing security concerns according to a 2020 survey (Oyetunji, Ogunmola, Oyelakin, Olorunsogbon & Ajayi, 2023). Poverty rates have also increased, with over 40% of the population living below the national poverty line, unable to afford basic necessities like food, housing and healthcare (Wight, Kaushal, Waldfogel& Garfinkel, 2014). This financial hardship has been exacerbated by high inflation rates over 14%, driving the cost of living much higher than wages for many low-income Nigerians (Olawoyin et al., 2023).

The hardship affects every angle of Nigerian society. Food and water crises further threaten well-being, with nearly 3 million children in the Northeast currently suffering from severe malnutrition due to the decade-long conflict (Niger, 2022). Recurring incidents of cholera and other waterborne diseases spread through unsafe drinking water consumed by millions only add to citizens' socio-emotional burdens (Tulchinsky, 2018). These situations are compounded by persistently high unemployment rates, especially among the youth, which leaves over 40 million without livelihoods, hope for the future or means of self-actualization (Niger, 2022). Besides, the unstable currency market and forex scarcity additionally made it difficult for Nigerians to meet basic physiological needs and travel abroad for education or healthcare, damaging self-esteem (Gong et al., 2022; Niger, 2022; Ofuebe, Ugwu & Ugwu, 2022). This bleak economic outlook combined with other challenges has led to increased rates of depression from 10-15% pre-pandemic to over 25% as at 2022 (Gong et al., 2022).

There is an urgent need to enhance community resilience and improve access to mental healthcare services in Nigeria to

enable the population to effectively cope with these mental stressors.. Regrettably, there seems to be a significant gap in availability and access to adequate mental healthcare services in Nigeria (Soroye, Oleribe, & Taylor-Robinson, 2021; Niger, 2022). Statistics show there are less than 200 registered psychiatrists catering to a population of over 200 million people, representing a severe shortage of less than 1 psychiatrist per 1 million citizens (Soroye, Oleribe, & Taylor-Robinson, 2021). This, in addition to out-of-pocket costs, cumulatively leaves many Nigerians without proper access to diagnostic consultation and treatment, especially in remote and rural areas (Wada et al., 2021). Even in major cities, the cost of visiting private specialist facilities remains prohibitively expensive for most patients (Ipinnimo et al., 2023). Furthermore, the vast cultural and linguistic diversity across Nigeria's geopolitical zones presents obstacles for equitable service provision (Akindele, Olatundun & Akano, 2022). As a result, 60-80% of people suffering mental illnesses receive care primarily from traditional healers, religious figures or not at all (Burns & Tomita, 2015).

If the foregoing is left unaddressed, mental health issues may escalate in Nigeria. This decries for an urgent need to explore innovative models for bridging Nigeria's mental healthcare gap. However, digital technology can play a crucial role in bridging this divide. Its effectiveness has been demonstrated in addressing various health issues, such as (i) telemedicine applied in improving access to healthcare in rural areas, (ii) health apps used in promoting healthy behaviours, and (iii) remote monitoring enhancing chronic disease management. Hence, embracing digital solutions can help mitigate the consequences of the workforce shortage and improve mental health outcomes. Nigeria has a huge opportunity to leverage the rapid growth of digital technologies in the country to address its mental healthcare challenges. This is because there is over 90 million internet and smart phone users in Nigeria (Nwaogu, Chan, Naslund, Hon, Belonwu, & Yang, 2021; Nwani, Ugwu, Ochiaka, Adams, Ezeani, Onyekwere & Agbo, 2022; Oyedele et al., 2023)). This can help to expand access to mental health services that are currently unavailable to many citizens, especially in remote areas. Therefore, this paper advocates for the adoption of innovative digital technology in mental healthcare, leveraging platforms, and tools to extend the reach of services, increase accessibility, and provide support to individuals in need.

This paper is guided by Diffusion Innovation Theory to help explain steps in adopting new technologies. The theory originally developed by Rogers, Singhal and Quinlan (2019), seeks to explain how, why and at what rate new ideas and technology spread through cultures over time. Some key aspects of the theory include:

i. Innovation, Communication Channels, Time - The process by which an innovation is communicated through certain channels over time among members of a social system (Valente, & Rogers, 1995).
ii. Categories of Adoption - Innovators, Early Adopters, Early Majority, Late Majority, Laggards based on innovativeness and willingness to try new things(Dearing, & Cox, 2018).

iii. Perceived Attributes: Relative advantage, compatibility, complexity, trialability, observability impact adoption rates (Scott, Plotnikoff, Karunamuni, Bize, & Rodgers, 2008).

This theory helps to unpack how digital mental health innovations may diffuse in Nigeria. Factors like relative advantage over traditional care, compatibility with local needs/culture, ease of use, and observability of benefits could impact which groups are earliest to adopt virtual solutions (Wan, Ismail, & Mokhtar, 2016). Understanding these dynamics can optimize promotion strategies to accelerate wider adoption for maximum health impact (Purcarea, 2019). Overall, the theory provides a useful framework for explaining implementation and uptake of the interventions proposed in the study.

Literature Review

This literature review examines the key themes relevant to the present study on mental health in Nigeria. It examines the current mental health landscape, focusing on the status of mental health services and infrastructure. The review also addresses barriers to accessing mental health care, including cost, distance, and social stigma. Additionally, it explores the shortage of skilled manpower in the mental health sector. The review highlights global innovations in digital mental healthcare, such as online therapy platforms, chatbots, and mobile apps, and discusses the importance of policy frameworks and implementation strategies to adapt digital solutions. Therefore, this segment provides a comprehensive insight of these themes.

Nigeria's Current Mental Health Landscape

1. Status of mental health services and infrastructure.

Nigeria currently faces a severe shortage of mental health infrastructure and services. Government expenditure on mental healthcare is also very negligible at 1-2% of the national health budget (Rajkumar, 2022). There are only a handful of federal neuropsychiatric hospitals located primarily in urban areas (Gureje & Lasebikan, 2016), with 30 state hospitals lacking resources (Anyebe, Olisah, Garba& Amedu, 2019). Primary care facilities in both rural and urban areas lack adequate resources to properly diagnose or treat mental illnesses (Jack-Ide& Uys, 2013). Most Nigerians do not have access to even basic community-based mental health services (Chaining, 2019) or psychosocial support (Abramov& Peixoto, 2022). The lack of in-patient units, out-patient clinics, counseling centers and rehabilitation programs present major gaps in the system (Welcome, 2011).

Similarly, there is also shortage of professionals for mental healthcare. Although there are different reports but all point to gross deficiency in the availability of mental health workers. For instance, report has shown that for every 200,000 Nigerians, there is only one psychiatrists which translates to a ratio of 0.5 psychiatrists per 100,000 people as against the United Nation's recommended minimum of 1 per 10,000 (Uche, 2016; Abdulmalik, Kola & Gureje, 2016). Similarly, there are only 0.05 clinical psychologists per 100,000 citizens (Nwaopara, 2016). A recent study has also shown that there are less than 300 psychiatrists practicing in the country to

serve a population of over 200 million people (Anjorin& Hassan Wada, 2022).

The lack of qualified practitioners is attributed to low education output (Dodani, & LaPorte, 2015) as well as high rates of emigration among trained mental health workers seeking better conditions abroad (Owusu, Medakkar, Akinnawo, Stewart-Pyne, & Ashu, 2017). This acute scarcity of skilled staff means that most basic healthcare facilities lack capacity to properly diagnose, treat or provide long-term care for patients (Aluko, Rhoda, & Modeste, 2019).This can also result in delays in receiving diagnosis, treatment, and ongoing care, ultimately worsening mental health conditions (Egbo et al, 2023).

2. Barriers (cost, distance to facilities, and social stigma).

The limited mental health services and infrastructures that do exist in Nigeria are rendered inaccessible due to various barriers. One of such barriers is out-of-pocket costs for consultation, documentation and medication which impose high financial burden on citizens (Abah, 2023). The average Nigerian would struggle to afford both travel expenses and fees if a specialized mental health facility was far from their community (Agboola, Esan, Afolabi, Soyinka, Oluwaranti & Adetayo, 2018). Distance poses a further challenge as neuro-psychiatric hospitals are primarily located in a few major cities, leaving vast rural swathes underserved (Gureje, 2013).Another important barrier is social stigma pertaining to mental illnesses which also discourages individuals from openly seeking help due to fear of shame and isolation (Stulz, Pichler, Kawohl, & Hepp, 2018). All of these barriers can combine to further marginalize the mentally ill.

Global Innovation in Digital mental Healthcare

There have been global innovations in management of mental health cases. This segment examines examples of successful programs in advanced countries, as well as models like online platforms.

1. Examples of successful programs.

Several high-income countries have implemented telepsychiatry programs with positive outcomes. In the US, the Department of Veterans Affairs operates telemental health clinics that expand access to psychiatrists for veterans nationwide, achieving comparable clinical outcomes to in-person care (National Academies Press, 2018). These clinics have served over 1.25 million veterans since 2007, addressing treatment shortages in rural areas (National Academies Press, 2018b). Veterans receiving care through telepsychiatry show high levels of satisfaction, reporting ease of use and reduced travel times and costs (Silvestrini, Indresano, Zeliadt, & Chen, 2021).

Another country that has successfully implemented telepsychiatry programs is Australia. Australia rolled out a national telepsychiatry service for rural areas in 2017, called eMHPrac (Harrison, MacFarlane, Murray & Wallace, 2006). This program allows general practioners and other allied mental health professionals to consult specialists through live video calls. Over 25,000 consultations have been conducted, with patients noting reduction in long wait times and travel burdens to receive care (Harrison, MacFarlane, Murray, & Wallace,

2006). Over 90% reported being highly satisfied with the quality and convenience of telepsychiatry versus traveling many hours for in-person appointments (Nguyen,Waller, Pandya, & Portnoy, 2020).

Other developed regions successfully integrating telepsychiatry include the UK, Norway, Canada and parts of Europe. The UK offers digital Cognitive Behavioral Therapy (CBT) programs through its National Health Service, treating mild-to-moderate conditions like anxiety (Gratzer, & Khalid-Khan, 2016). More than 450,000 people have accessed this self-guided internet-based CBT, at a fraction of the cost of face-to-face therapy (Esfandiari et al., 2021). Over 60% experienced symptom improvements comparable to clinic-based CBT, with high rates continuing at 6 and 12-month follow up (Newman, Basterfield, Erickson, Caulley, Przeworski, & Llera, 2022). Norway has developed "tele-CBT" which links patients with therapists through secure online platforms for guided virtual sessions (Lamb, Pachana, & Dissanayaka, 2018). Preliminary data from Canadian telepsychiatry pilots indicates benefits of increased service access for underserved groups as well (Chakrabarti, 2015).

2. **Models like online therapy platforms, chatbots, and mobile apps.**

Beyond telemedicine, innovative digital platforms can deliver mental healthcare remotely. Leading the trend are online therapy websites providing live video counseling sessions and message-based support. BetterHelp, an online therapy provider, serves over 2 million clients annually through affordable subscription plans starting at $60 per week (BetterHelp Editorial Team, 2023). Users complete profiles to be matched with licensed therapists, then communicate through text, phone, or video depending on needs and insurance (Lindberg, 2023). Studies show it yields improvements comparable to traditional therapy for issues like depression and anxiety (Widnall, Price,Trompetter, & Dunn, 2019).

Artificial Intelligence (AI) chatbots are also being employed for mild issues through conversational agents. Canada-based Woebot helps 18-25 year olds manage stress and anxiety through Facebook Messenger by simulating a caring therapist (Maslach, & Gomes, 2016). Over 300,000 conversations have occurred, with preliminary evidence suggesting benefits for mild conditions (Haque, & Rubya, 2023). Woebot teaches cognitive behavioral techniques and its creators have peer-reviewed research underway (Fitzpatrick, Darcy, & Vierhile, 2017). Meanwhile, evidence-based mobile apps deliver cognitive techniques, strategies for coping with conditions like depression, PTSD and substance use disorders through engaging content and activity tracking. Apps like What's Up and MindShift use psycho-education, mood tracking, relaxation exercises and have assisted over 10 million users (O'Sullivan, & O'Sullivan, 2023). Research on programs like these shows potential for self-help improvement of mood when combined with clinician guidance (Qureshi, & Al-Bedah, 2013; Fleming, Bavin, Lucassen, Stasiak, Hopkins, & Merry, 2018).

Expanding Access and Promoting Literacy

Promoting literacy and expanding access in the realm of mental healthcare is of paramount importance. By increasing awareness and understanding of mental health issues, we can reduce stigma and encourage help-seeking behaviours. Additionally, improving access to mental healthcare services ensures that individuals in need can receive timely support and treatment. These efforts are crucial for enhancing overall mental well-being and fostering a more inclusive and supportive society. Below are ways of expanding access and promoting literacy concerning mental healthcare.

1. **Digital strategies to connect rural and underserved communities.**

Rural and remote communities in Nigeria often lack access to basic healthcare and this may include physical mental healthcare facilities due to long distances and poor infrastructure. However, over 70% of Nigerians now own a mobile phone which can be leveraged to connect these underserved populations to services (Makinde,Sule, Ayankogbe, & Boone, 2018). Digital strategies like telepsychiatry apps allow real-time video counseling from psychiatrists in urban areas to patients in remote villages. Mobile hotspots can live stream mental health awareness sessions to rural gathering points (Makinde, Sule, Ayankogbe, & Boone, 2018). Online directories enable communities to identify and contact nearby volunteer counselors through chat forums (Onayinka, 2011; Makinde, Sule, Ayankogbe, & Boone, 2018; Nwani et al., 2022). The government is working to expand 4G connectivity to boost access in rural areas, enabling more virtual care options (Energy, 2023).

2. **Online platforms to raise mental health awareness and self-care.**

Mental health literacy in Nigeria remains low due to stigma and lack of education. However, online platforms provide scalable ways to teach citizens about common illnesses, available support systems, and self-care strategies. Websites host freely accessible psych education content, screening tests, and e-books (Aluh, Anyachebelu, Anosike, & Anizoba, 2018). Mobile apps provide meditations, journaling activities, and advice for managing stress, anxiety or depression through daily notifications (Valinskas, Nakrys, Aleknavicius, & Jonusas, 2023). Massive open online courses allow interaction with mental health experts through question-and-answer sessions. Social media campaigns with vetted mental wellness tips reach wider populations effectively through infographics and video tutorials (Latha, Meena, Pravitha, Dasgupta, & Chaturvedi, 2020). This raises awareness of positive coping mechanisms and encourages help-seeking when needed.

3. **Utilizing social media and other digital networking.**

Social media platforms are invaluable for connecting isolating Nigerians, especially amid pandemic restrictions. Facebook support groups allow anonymous discussions on mental health challenges with thousands of members nationwide (Farr, 2019). WhatsApp chat groups enable peer counseling and crowdsourced advice between individuals with similar experiences (Fan et al., 2022). YouTube videos of licensed counselors provide

counseling on issues like grief, relationship issues and addiction (Eckert et al., 2022; Onayinka et al., 2018).Teletherapy apps match users to licensed therapists for live video sessions. Blogsites host profiles of mental health advocates openly discussing their journeys to overcome stigma (Getch, 2023). Digital networking facilitates empowering sharing of wisdom, breaking down social barriers around mental illnesses through storytelling and collective empathy building online communities.

Policy Framework and Implementation

The policy framework and implementation of mental healthcare would play a vital role in ensuring effective and accessible services. A well-designed policy framework provides guidelines and regulations for mental health services, while successful implementation involves translating these policies into practical actions, resources, and support systems to improve mental healthcare delivery.

1. **Regulations for telehealth practice, privacy and licensing:**

Establishing a strong policy framework is necessary to govern digital mental health services. Nigeria should enact regulations for telehealth practice standards and licensing of online practitioners, informed by models from countries like Canada, UK and Austria (Onyemelukwe, 2023; Trusted, 2023). Laws are required to address issues like informed consent, security of online sessions, protocols for emergency situations, and management of controlled substances via telemedicine (Garber et al., 2023). Comprehensive privacy and data protection acts must also comply with international standards to build public trust in these technologies, protecting sensitive mental health information (National Academies Press, 2014).The National Health Act and NITDA can provide guidance on licensing categories for telehealth specialties, malpractice coverage and resolving inter-state jurisdiction issues that may arise (Fields, 2020).

2. **Strategic plan and funding mechanisms**

Development of a comprehensive strategic plan is needed to coordinate efforts and maximize mental health resources. Initial funding can come from public-private partnerships involving mobile carriers, technology firms, healthcare providers and philanthropic organizations (Woodson, 2016; Jasti, Livesey, Oppenheimer & Boyce, 2019). Pilot programs should be rolled out in selected tertiary hospitals with an established telemedicine infrastructure to assess effectiveness and challenges (Bali, 2019). As capacity increases, services can systematically expand to secondary facilities and integrate with primary care centers (Akinwumi, OlaOlorun, Adesina, Durodola, Amole, Singer, & Levine, 2022). Community-based organizations and local governments should be engaged in awareness campaigns for pilot phases (Nest, 2012). Conditional cash transfer programs may incentivize adoption and offset costs for underserved groups (Fernald, Gertler, & Neufeld, 2018).

3. **Monitoring, evaluation and research on impacts**

Rigorous monitoring frameworks are important to ensuring programs achieve goals and address issues in a timely manner. Standard indicators measuring accessibility,

utilization rates, treatment adherence and clinical outcomes can be collected (Kardas, et al., 2020). Patient surveys assessing experiences, perception changes and quality-of-care insights provide valuable qualitative data (Al-Abri & Al-Balushi, 2014). Comparative studies exploring digital therapy effectiveness, cost-savings potential and long-term health impacts would aid continuous improvement and expansion decisions (Stoumpos, Kitsios, & Talias, 2023). Collaborations with academic institutions can help design robust mixed-methods evaluations integrating quantitative metrics and qualitative perspectives (Shekhar, Prince, Finelli, Demonbrun & Waters,2018). As the largest use case in sub-Saharan Africa, Nigeria's efforts should also inform global mHealth evidence for addressing mental healthcare gaps.

Adapting Digital Solutions for Nigeria

Nigeria could establish nationwide telepsychiatry services through virtual platforms to expand mental health access. Video/phone consultations using networks like WhatsApp or Skype can connect qualified psychiatrists in cities to patients in remote areas, with 90% indicating video as their preferred modality in Thai trials (Chen et al., 2022). Integrating these services into primary healthcare centers using basic technologies increases availabilities from limited specialists (Shahabi, Kiekens, Etemadi, Mojgani, Teymourlouei & Lankarani, 2022). Nigeria's major hospitals can pilot telepsychology clinics to evaluate residents/referrals and prescribe therapy remotely (Ukaoha, & Egbokhare, 2012). Leveraging Nigeria's growing online doctor booking, patients could have secure e-appointments (Babatunde et al., 2021). Similar models in India increased rural psychiatric treatment eightfold (Ebenezer, & Drake, 2018). With 67% of Nigerians owning phones, such solutions could bridge gaps cost-effectively if paired with reliable electricity/networks.

Furthermore, mental healthcare gap can be addressed through tailoring the mobile application to have local contents. Mobile applications designed with localized content addressing depression, anxiety and other priority conditions could boost self-management and availability of symptom screening tools. If developed through research on cultural illness frameworks, these applications would include psychoeducation, breathing exercises, journaling and connection to help-lines tailored to the Nigerian experience (Kroot, Blom, Patel, Davis, Moore & Mulvihill, 2023). This method was successfully used by Brazil which reduced depression rates 29% through similar public health program of localized e-therapies delivering cognitive-behavioral techniques (Bezerra & Barbosa, 2023). Nigeria invested in 'Wellbeing Apps for Africa' yet local content remains lacking; cooperation between tech firms, clinicians and end-users on customizing tools could maximize benefits (Jousset, et al., 2023).

Another way of adapting digital solution in addressing this gap is through collaboration. Leveraging collaborative networks between tech startups, mental health professional bodies, advocacy groups and consumers may fast-track creating sensitive e-resources (Dragonfly Mental Health, 2023). For instance, helping traditional healers integrate cultural knowledge systems into digital psych education tools respects local

worldviews enhancing buy-in (Krah,de Kruijf, Ragno, 2018). Telecommunications providers like MTN and GlobalCom enabling free access to mental health websites on certain days increases awareness and normalize help-seeking (Fakiya, 2021). Joint public-private taskforces standardized development and testing of culturally-grounded programs shown to double outcomes versus foreign models alone (Okamoto, Helm, Pel, McClain,Hill, & Hayashida, 2014). Developing digital storytelling and talk forums moderated by peers provides safe community for Nigerians to share experiences, reducing stigmatization (Naslund, & Deng, 2021).

Conclusion

This paper outlined a guide for Nigeria to leverage rapidly expanding digital technologies and strengthen mental healthcare delivery nationwide. By adopting diverse e-mental health solutions like telepsychiatry, virtual tools, online literacy platforms and nationwide tele-networks, gaps in access to care can be reduced and underserved communities connected to quality services. With the proper regulatory framework, strategic implementation, dedicated funding, and multi-sector partnerships, an integrated digital system holds immense potential to transform the current mental health landscape. While challenges undoubtedly exist in transitioning to technology-based models, the opportunity costs of inaction are too great as psycho-social issues rise. With continued support and innovative phased development, the next generation may see virtual modalities as standard first-line care options. Most importantly, prioritizing citizen mental wellness is crucial for building a happier, resilient and more productive Nigerian society able to withstand adversities. Now is the time for coordinated action to realize this vision.

REFERENCES

Abah, V. O. (2023). Poor health care access in Nigeria: a function of fundamental misconceptions and misconstruction of the health system. In *IntechOpen eBooks*. https://doi.org/10.5772/intechopen.108530

Abdulmalik, J., Kola, L., & Gureje, O. (2016). Mental health system governance in Nigeria: challenges, opportunities and strategies for improvement. *Global mental health (Cambridge, England)*, *3*, e9. https://doi.org/10.1017/gmh.2016.2

Abramov, D. M., & Peixoto, P. D. T. D. C. (2022). Does contemporary Western culture play a role in mental disorders?. *Frontiers in Psychiatry*, *13*, 978860.

Agboola, A. A., Esan, O. T., Afolabi, O. T., Soyinka, T. A., Oluwaranti, A. O., & Adetayo, A. (2018). Economic burden of the therapeutic management of mental illnesses and its effect on household purchasing power. *PloS one*, *13*(9), e0202396. https://doi.org/10.1371/journal.pone.0202396

Akindele, J., Olatundun, O.,& Akano, R. (2022). Linguistic Diversity, Nigerian Indigenous Languages and the Choice of the English Language for Nigeria's National Sustainability. 6. 72-83.

Akinwumi, A. I., OlaOlorun, A. D., Adesina, S. A., Durodola, A. O., Amole, I. O., Singer, S. R., & Levine, H. (2022). Strong primary care services, an important feature of primary health care: What can Nigeria learn from Israel? *Frontiers in Public Health*, *10*. https://doi.org/10.3389/fpubh.2022.1006095

Al-Abri, R., & Al-Balushi, A. (2014). Patient satisfaction survey as a tool towards quality improvement. *Oman medical journal*, *29*(1), 3–7. https://doi.org/10.5001/omj.2014.02

Aluh, D. O., Anyachebelu, O. C., Anosike, C., & Anizoba, E. L. (2018). Mental health literacy: what do Nigerian adolescents know about depression?. *International journal of mental health systems*, *12*, 8. https://doi.org/10.1186/s13033-018-0186-2

Aluko, J. O., Rhoda, A., & Modeste, R. R. M. (2019). Manpower capacity and reasons for staff shortage in primary health care maternity centres in Nigeria: a mixed-methods study. *BMC Health Services Research*, *19*(1). https://doi.org/10.1186/s12913-018-3819-x

Anjorin, O., & Hassan Wada, Y. (2022). Impact of traditional healers in the provision of mental health services in Nigeria. *Annals of medicine and surgery (2012)*, *82*, 104755. https://doi.org/10.1016/j.amsu.2022.104755

Anyebe, E. E., Olisah, V. O., Garba, S. N., & Amedu, M. (2019). Current status of mental health services at the primary healthcare level in Northern Nigeria. *Administration and Policy in Mental Health and Mental Health Services Research*, *46*, 620-628.

Babatunde, A., Abdulkareem, A. A., Akinwande, F. O., Adebayo, A. O., Omenogor, E. T., Adebisi, Y. A., & Ilesanmi, E. B. (2021). Leveraging

mobile health technology towards Achieving Universal Health Coverage in Nigeria. *Public Health in Practice, 2*, 100120. https://doi.org/10.1016/j.puhip.2021.100120

Bali, S. (2019). Barriers to development of telemedicine in developing countries. In *IntechOpen eBooks*. https://doi.org/10.5772/intechopen.81723

BetterHelp Editorial Team. (2023). How much does BetterHelp online therapy cost? Retrieved from https://www.betterhelp.com/advice/general/how-much-does-betterhelp-cost/

Bezerra, H. S., & Barbosa, I. R. (2023). Poor access to health services for depression treatment in Brazil. *Revista de saude publica*, *57*, 49. https://doi.org/10.11606/s1518-8787.2023057004654

Burns, J. K., & Tomita, A. (2015). Traditional and religious healers in the pathway to care for people with mental disorders in Africa: a systematic review and meta-analysis. *Social psychiatry and psychiatric epidemiology*, *50*(6), 867–877. https://doi.org/10.1007/s00127-014-0989-7

Chaining, B. (2019). Nigeria: People with mental health conditions chained, abused. *Human Rights Watch*.

Chakrabarti, S. (2015). Usefulness of telepsychiatry: A critical evaluation of videoconferencing-based approaches. *World journal of psychiatry*, *5*(3), 286–304. https://doi.org/10.5498/wjp.v5.i3.286

Chen, P. V., Helm, A., Caloudas, S. G., Ecker, A., Day, G., Hogan, J., & Lindsay, J. (2022). Evidence of Phone vs Video-Conferencing for Mental Health Treatments: A Review of the Literature. *Current psychiatry reports*, *24*(10), 529–539. https://doi.org/10.1007/s11920-022-01359-8

Dearing, J. W., & Cox, J. G. (2018). Diffusion of innovations theory, principles, and practice. *Health Affairs*, *37*(2), 183–190. https://doi.org/10.1377/hlthaff.2017.1104

Dodani, S., & LaPorte, R. E. (2015). Brain drain from developing countries: how can brain drain be converted into wisdom gain?. *Journal of the Royal Society of Medicine*, *98*(11), 487–491. https://doi.org/10.1177/0141076805098011107

Dragonfly Mental Health. (2023). Home - Dragonfly Mental Health. Retrieved from https://dragonflymentalhealth.org/?gad_source=1&gclid=Cj0KCQiAsburBhCIARIsAExmsu74D09_CtLBbfZzXZEI9GzQf738ipSgxDMocy36W2-ubdbQwJHNCxUaAuBLEALw_wcB

Ebenezer, J. A., & Drake, R. E. (2018). Community mental health in rural India: the Shifa project in Padhar Hospital, Madhya Pradesh. *BJPsych international*, *15*(2), 38–40. https://doi.org/10.1192/bji.2017.8

Eckert, M., Efe, Z., Guenthner, L., Baldofski, S., Kuehne, K., Wundrack, R., Thomas, J., Saee, S., Kohls, E., & Rummel-Kluge, C. (2022). Acceptability and feasibility of a messenger-based psychological chat counselling service for children and young adults ("krisenchat"): A cross-sectional study. *Internet interventions*, *27*, 100508. https://doi.org/10.1016/j.invent.2022.100508

Egbo, K. A., Ugwu, N. F., Onyekwere, O. K., Adams, A. B., Makinde, V. I., Familoni, J.K. Awoniyi, O. M., Falebita, T. F., Oloyede, A. O., & Onyekachi, B. N. (2023). *Journal of Home Economics Research (Book of Abstract)*, 97-98.

Esfandiari, N., Mazaheri, M. A., Akbari-Zardkhaneh, S., Sadeghi-Firoozabadi, V., & Cheraghi, M. (2021). Internet-Delivered Versus Face-to-Face Cognitive Behavior Therapy for Anxiety Disorders: Systematic Review and Meta-Analysis. *International journal of preventive medicine*, *12*, 153. https://doi.org/10.4103/ijpvm.ijpvm_208_21

Fakiya, V. (2021, June 12). Global Wellness Day: Protecting mental health with technology. *Techpoint Africa*. Retrieved from https://techpoint.africa

Farr, C. (2019). Facebook will allow patients in support groups to post questions anonymously. *CNBC*. Retrieved from https://www.cnbc.com

Fernald, L. C., Gertler, P. J., & Neufeld, L. M. (2018). Role of cash in conditional cash transfer programmes for child health, growth, and development: an analysis of Mexico's Oportunidades. *Lancet (London, England)*, *371*(9615), 828–837. https://doi.org/10.1016/S0140-6736(08)60382-7

Fields, B. G. (2020). Regulatory, Legal, and Ethical Considerations of Telemedicine. *Sleep medicine clinics*, *15*(3), 409–416. https://doi.org/10.1016/j.jsmc.2020.06.004

Fitzpatrick, K. K., Darcy, A., & Vierhile, M. (2017). Delivering Cognitive Behavior Therapy to Young Adults With Symptoms of Depression and Anxiety Using a Fully Automated Conversational Agent (Woebot): A Randomized Controlled Trial. *JMIR mental health*, *4*(2), e19. https://doi.org/10.2196/mental.7785

Fleming, T., Bavin, L., Lucassen, M., Stasiak, K., Hopkins, S., & Merry, S. (2018). Beyond the Trial: Systematic Review of Real-World Uptake and Engagement With Digital Self-Help Interventions for Depression, Low Mood, or Anxiety. *Journal of*

medical Internet research, *20*(6), e199. https://doi.org/10.2196/jmir.9275

Garber, K., Chike-Harris, K., Vetter, M. J., Kobeissi, M., Heidesch, T., Arends, R., Teall, A. M., & Rutledge, C. (2023). Telehealth Policy and the Advanced Practice Nurse. *The journal for nurse practitioners : JNP*, *19*(7), 104655. https://doi.org/10.1016/j.nurpra.2023.104655

Getch, M. (2023). Teletherapy: revolutionizing access to mental health care. Retrieved from https://caltrc.org/news/teletherapy-revolutionizing-access-to-mental-health-care/

Gong, Y., Liu, X., Zheng, Y., Mei, H., Que, J., Yuan, K., Yan, W., Shi, L., Meng, S., Bao, Y., & Lu, L. (2022). COVID-19 Induced Economic Slowdown and Mental Health Issues. *Frontiers in psychology*, *13*, 777350. https://doi.org/10.3389/fpsyg.2022.777350

Gratzer, D., & Khalid-Khan, F. (2016). Internet-delivered cognitive behavioural therapy in the treatment of psychiatric illness. *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne*, *188*(4), 263–272. https://doi.org/10.1503/cmaj.150007

Gureje O. (2013). Psychiatry in Nigeria. *International psychiatry : bulletin of the Board of International Affairs of the Royal College of Psychiatrists*, *1*(2), 10–12.

Gureje, O., & Lasebikan, V. O. (2016). Use of mental health services in a developing country: results from the Nigerian survey of mental health and well-being. *Social psychiatry and psychiatric epidemiology*, *41*, 44-49.

Haque, M. D. R., & Rubya, S. (2023). An Overview of Chatbot-Based Mobile Mental Health Apps: Insights From App Description and User Reviews. *JMIR mHealth and uHealth*, *11*, e44838. https://doi.org/10.2196/44838

Harrison, R., MacFarlane, A., Murray, E.,& Wallace, P. (2006). Patients' perceptions of joint teleconsultations: A qualitative evaluation. *Health expectations : an international journal of public participation in health care and health policy*. *9*. 81-90. 10.1111/j.1369-7625.2006.00368.x.

Ipinnimo, T. M., Elegbede, O. E., Durowade, K. A., Adewoye, K. R., Ibirongbe, D. O., Ajayi, P. O., ... & Ibikunle, A. I. (2023). Cost of illness of non-communicable diseases in private and public health facilities in Nigeria: a qualitative and quantitative approach. *The Pan African Medical Journal*, *44*. 10.11604/pamj.2023.44.6.35494.

Jack-Ide, I. O., & Uys, L. (2013). Barriers to mental health services utilization in the Niger Delta region of Nigeria:

service users' perspectives. *The Pan African medical journal*, *14*, 159. https://doi.org/10.11604/pamj.2013.14.159.1970

James, B. O., Okonoda, K. M., Ebiti, N. W., Arias, A. J., & Koch, J. R. (2022). Telehealth for Substance Use Disorders Treatment in Nigeria: Implementation Strategies Post-COVID-19. *Open Journal of Psychiatry*, *12*(04), 321–335. https://doi.org/10.4236/ojpsych.2022.124024

Jasti, B. R., Livesey, J. C., Oppenheimer, P. R., & Boyce, E. G. (2019). Development, Implementation and Assessment of a Comprehensive Strategic Plan in a School of Pharmacy. *American journal of pharmaceutical education*, *83*(6), 6899. https://doi.org/10.5688/ajpe6899

Jousset, O., Kimeu, M., Müller, T., Sforza, G., Sun, Y. S., Ustun, A., & Wilson, M. (2023). How digital tools could boost efficiency in African health systems. Retrieved from https://www.mckinsey.com/industries/healthcare/our-insights/how-digital-tools-could-boost-efficiency-in-african-health-systems

Kardas, P., Aguilar-Palacio, I., Almada, M., Cahir, C., Costa, E., Giardini, A., Malo, S., Massot Mesquida, M., Menditto, E., Midão, L., Parra-Calderón, C. L., Pepiol Salom, E., & Vrijens, B. (2020). The Need to Develop Standard Measures of Patient Adherence for Big Data: Viewpoint. *Journal of medical Internet research*, *22*(8), e18150. https://doi.org/10.2196/18150

Krah, E., de Kruijf, J., & Ragno, L. (2018). Integrating Traditional Healers into the Health Care System: Challenges and Opportunities in Rural Northern Ghana. *Journal of community health*, *43*(1), 157–163. https://doi.org/10.1007/s10900-017-0398-4

Kroot, A., Blom, L. C., Patel, K. F., Davis, C., Moore, M., & Mulvihill, T. M. (2023). Basketball experience: Exploring Nigerian basketball coaches' perspectives of grassroots sport-for-development programming as a tool to enhance well-being. *International Journal of Sports Science & Coaching*. https://doi.org/10.1177/17479541231213552

Lamb, T., Pachana, N., & Dissanayaka, N. (2018). Update of Recent Literature on Remotely Delivered Psychotherapy Interventions for Anxiety and Depression. *Telemedicine and e-Health. 25.* 10.1089/tmj.2018.0079.

Latha, K., Meena, K. S., Pravitha, M. R., Dasgupta, M., & Chaturvedi, S. K. (2020). Effective use of social media platforms for promotion of mental health awareness. *Journal of education and health promotion*, *9*, 124. https://doi.org/10.4103/jehp.jehp_90_20

Leong, Q. Y., Sridhar, S., Blasiak, A., Tadeo, X., Yeo, G., Remus, A., & Ho, D. (2022). Characteristics of Mobile Health Platforms for Depression and Anxiety: Content Analysis Through a Systematic Review of the Literature and Systematic Search of Two App Stores. *Journal of medical Internet research*, *24*(2), e27388. https://doi.org/10.2196/27388

Lindberg, S. (2023). TalkSpace Reviews (August 2023) | Tested by users & experts. Retrieved from https://www.everydayhealth.com/emotional-health/talkspace-review/

Makinde, O., Sule, A., Ayankogbe, O., & Boone, D. (2018). Distribution of health facilities in Nigeria: Implications and options for Universal Health Coverage. *The International Journal of Health Planning and Management. 33*. 10.1002/hpm.2603.

Malette, N. (2023). Understanding Mental Health. In *It's All Good (Unless It's Not)*. https://doi.org/10.59962/9780774839020-004

Maslach, C., & Gomes, M. E. (2016). Overcoming burnout. *Working for peace: A handbook of practical psychology and other tools*, *2*, 43-49.

Naslund, J. A., & Deng, D. (2021). Addressing Mental Health Stigma in Low-Income and Middle-Income Countries: A New Frontier for Digital Mental Health. *Ethics, medicine, and public health*, *19*, 100719. https://doi.org/10.1016/j.jemep.2021.100719

National Academies Press (US). (2018). Health technology for mental health care. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK499492/

National Academies Press (US). (2018b). Timely access to mental health care. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK499495/

National Academies Press. (2014). Confidentiality and privacy of personal data. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK236546/

Nest, W. E. (2012). Learning from experience: Community-based adaptation to climate change in Nigeria. *Ibadan, Nigeria: Building Nigeria's response to climate change*.

Newman, M. G., Basterfield, C., Erickson, T. M., Caulley, E., Przeworski, A., & Llera, S. J. (2022). Psychotherapeutic treatments for generalized anxiety disorder: cognitive and behavioral therapies, enhancement strategies, and emerging efforts. *Expert review of neurotherapeutics*, *22*(9), 751–770. https://doi.org/10.1080/14737175.2022.2125800

Nguyen, M., Waller, M., Pandya, A., & Portnoy, J. (2020). A Review of Patient and Provider Satisfaction

with Telemedicine. *Current allergy and asthma reports*, *20*(11), 72. https://doi.org/10.1007/s11882-020-00969-7

Niger. (2022). Hunger rising among children in drought-hit Niger as violence drives influx of refugees. Retrieved from https://reliefweb.int/report/niger/hunger-rising-among-children-drought-hit-niger-violence-drives-influx-refugees

Nwani, E. C., Ugwu, N. F.,Ochiaka, R. C., Adams, A. B., Ezeani, U. D., Onyekwere, O. K., &Agbo, C. C. (2022). Digital Literacy of School Health Influencers in Enugu State, Nigeria. *Trends Educational Studies Journal*, *14*(1), 72-89.

Nwaogu, J. M., Chan, A. P. C., Naslund, J. A., Hon, C. K. H., Belonwu, C., & Yang, J. (2021). Exploring the Barriers to and Motivators for Using Digital Mental Health Interventions Among Construction Personnel in Nigeria: Qualitative Study. *JMIR formative research*, *5*(11), e18969. https://doi.org/10.2196/18969

Nwaopara, U. A. (2016). Doctor to patient ratio and infrastructure gap in a psychiatric hospital in oil rich Eket, Nigeria. *Journal of Psychiatry*, *19*(02). https://doi.org/10.4172/2378-5756.1000356

O'Sullivan, I., & O'Sullivan, I. (2023). 9 Best Mental Health Apps to Improve your Well-Being with a Tap. Retrieved from https://tech.co/news/best-mental-health-apps

Ofuebe, J. I., Ugwu, N. F., & Ugwu, U. C. (2022). Prostate cancer knowledge, attitude and screening behaviours in a sample of Nigerian men: A descriptive survey. *Journal of Cardiovascular Disease Research*, *10*(01), 758-766.

Okamoto, S. K., Helm, S., Pel, S., McClain, L. L., Hill, A. P., & Hayashida, J. K. (2014). Developing empirically based, culturally grounded drug prevention interventions for indigenous youth populations. *The journal of behavioral health services & research*, *41*(1), 8–19. https://doi.org/10.1007/s11414-012-9304-0

Olawoyin, O., Izuaka, M., Ugwu, C., Imukudo, S., Babangida, M., Maishanu, A. A., . . . Akinlotan, O. (2023). Nigerians face hardship as govt policies lead to sky-high cost of living. Retrieved from https://www.premiumtimesng.com/business/business-news/611236-nigerians-face-hardship-as-govt-policies-lead-to-sky-high-cost-of-living.html

Onayinka, T. S. (2011). Information and Communication Technologies (ICTs) Poverty in Rural Areas : Implications for Development in Nigeria. *Journal of Communication*, *2*(2), 67–72.

Onayinka, T. S., A. K. Tsebee, & A. Alao. (2018). Situating Nigeria Newspapers online Readers' Comments within Haberma's Public Sphere. *Babcock Journal of Mass Communication*, *3*(1), 125–134.

Onyemelukwe, C. (2023). In review: the healthcare framework in Nigeria. Retrieved from https://www.lexology.com/library/detail.aspx?g=f7abcd92-4099-4e27-ac2d-72247820c7ee

Oreffice, S., & Quintana-Domeque, C. (2021). Gender inequality in COVID-19 times: Evidence from UK prolific participants. *Journal of Demographic Economics*, *87*(2). https://doi.org/10.1017/dem.2021.2

Owusu, Y., Medakkar, P., Akinnawo, E. M., Stewart-Pyne, A., & Ashu, E. E. (2017). Emigration of skilled healthcare workers from developing countries: can team-based healthcare practice fill the gaps in maternal, newborn and child healthcare delivery?. *International journal of MCH and AIDS*, *6*(2), 121–129. https://doi.org/10.21106/ijma.204

Oyedele, O. J., Onayinka, T. S., Oluwasola, O., & Asogwa, C. E. (2023). When Media Campaigns Fail: Explaining the Factors of Civil Disobedience to COVID-19 Protocols in Nigeria. *Journal of Health Management*, *25*(3). https://doi.org/10.1177/09720634231195214

Oyetunji, T. P., Ogunmola, O. A., Oyelakin, T. T., Olorunsogbon, O. F., & Ajayi, F. O. (2023). COVID-19-related risk perception, anxiety and protective behaviours among Nigerian adults: a cross-sectional study. *Zeitschrift fur Gesundheitswissenschaften = Journal of public health*, *31*(3), 479–487. https://doi.org/10.1007/s10389-021-01502-4

Purcarea, V. L. (2019). The impact of marketing strategies in healthcare systems. *Journal of medicine and life*, *12*(2), 93–96. https://doi.org/10.25122/jml-2019-1003

Qureshi, N. A., & Al-Bedah, A. M. (2013). Mood disorders and complementary and alternative medicine: a literature review. *Neuropsychiatric disease and treatment*, *9*, 639–658. https://doi.org/10.2147/NDT.S43419

Rajkumar, R. P. (2022). The Correlates of Government Expenditure on Mental Health Services: An Analysis of Data From 78 Countries and Regions. *Cureus*, *14*(8), e28284. https://doi.org/10.7759/cureus.28284

Reinert, M., Fritze, D., & Nguyen, T. (2021). The State of Mental Health in America 2022. *Mental Health America*.

Rogers, E., Singhal, A., & Quinlan, M. (2019). Diffusion of Innovations. 10.4324/9780203710753-35.

Scott, S. D., Plotnikoff, R. C., Karunamuni, N., Bize, R., & Rodgers, W. (2008). Factors influencing the adoption of an innovation: An examination of the uptake of the Canadian Heart Health Kit (HHK). *Implementation Science*, *3*, 1-8.

Shahabi, S., Kiekens, C., Etemadi, M., Mojgani, P., Teymourlouei, A. A., & Lankarani, K. B. (2022). Integrating rehabilitation services into primary health care: policy options for Iran. *BMC health services research*, *22*(1), 1317. https://doi.org/10.1186/s12913-022-08695-8

Shekhar, P., Prince, M., Finelli, C., Demonbrun, M. & Waters, C. (2018). Integrating quantitative and qualitative research methods to examine student resistance to active learning. *European Journal of Engineering Education. 44.* 1-13. 10.1080/03043797.2018.1438988.

Silvestrini, M., Indresano, J., Zeliadt, S. B., & Chen, J. A. (2021). "There's a huge benefit just to know that someone cares:" a qualitative examination of rural veterans' experiences with TelePain. *BMC health services research*, *21*(1), 1111. https://doi.org/10.1186/s12913-021-07133-5

Soroye, M. O., Oleribe, O. O., & Taylor-Robinson, S. D. (2021). Community Psychiatry Care: An Urgent Need in Nigeria. *Journal of multidisciplinary healthcare*, *14*, 1145–1148. https://doi.org/10.2147/JMDH.S309517

Stoumpos, A. I., Kitsios, F., & Talias, M. A. (2023). Digital Transformation in Healthcare: Technology Acceptance and Its Applications. *International journal of environmental research and public health*, *20*(4), 3407. https://doi.org/10.3390/ijerph20043407

Stulz, N., Pichler, E., Kawohl, W., & Hepp, U. (2018). The gravitational force of mental health services: distance decay effects in a rural Swiss service area. *BMC Health Services Research*, *18*(1). https://doi.org/10.1186/s12913-018-2888-1

Trusted. (2023). Navigating Legal Challenges in Nigeria's Evolving Telemedicine Landscape. Retrieved from https://trustedadvisorslaw.com/navigating-legal-challenges-in-nigerias-evolving-telemedicine-landscape/

Tulchinsky, T. H. (2018). John Snow, Cholera, the Broad Street Pump; Waterborne Diseases Then and Now. *Case Studies in Public Health*, 77–99. https://doi.org/10.1016/B978-0-12-804571-8.00017-2

Uche, N. (2016). Doctor to Patient Ratio and Infrastructure Gap in a Psychiatric Hospital in Oil Rich Eket, Nigeria. Journal of Psychiatry. 19. 10.4172/2378-5756.1000356.

Ugwu, N. F. (2021). E-Option for Health Education Amidst COVID-19: An Examination of Somalia Contexts. *International Studies in Educational Administration (Commonwealth Council for Educational Administration & Management (CCEAM)*, 49(1), 86-93.

Ukaoha, K., & Egbokhare, F. (2012). Prospects and challenges of telemedicine in Nigeria. *Journal of Medicine and Biomedical Sciences. 3*. 65-70. 10.7813/jmbs.2012/3-1/10.

United nations. (2022). *UNDERSTANDING MENTAL HEALTH*

Valente, T. W., & Rogers, E. M. (1995). The origins and development of the diffusion of innovations paradigm as an example of scientific growth. *Science communication*, *16*(3), 242–273. https://doi.org/10.1177/1075547095016003002

Valinskas, S., Nakrys, M., Aleknavicius, K., & Jonusas, J. (2023). Sensa Mobile App for Managing Stress, Anxiety,

and Depression Symptoms: Pilot Cohort Study. *JMIR formative research*, *7*, e40671. https://doi.org/10.2196/40671

Wada, Y. H., Rajwani, L., Anyam, E., Karikari, E., Njikizana, M., Srour, L., & Khalid, G. M. (2021). Mental health in Nigeria: A Neglected issue in Public Health. *Public Health in Practice*, *2*, 100166. https://doi.org/10.1016/j.puhip.2021.100166

Wan Ismail, W. N. S. & Mokhtar, M. (2016). APPLICATION OF TOE FRAMEWORK IN EXAMINING THE FACTORS INFLUENCING PRE-AND POST-ADOPTION OF CAS IN MALAYSIAN SMES. International Journal of Information Technology and Business Management. 49.

Welcome, M. O. (2011). The Nigerian health care system: Need for integrating adequate medical intelligence and surveillance systems. *Journal of pharmacy & bioallied sciences*, *3*(4), 470–478. https://doi.org/10.4103/0975-7406.90100

Widnall, E., Price, A., Trompetter, H., & Dunn, B. D. (2019). Routine Cognitive Behavioural Therapy for Anxiety and Depression is More Effective at Repairing Symptoms of Psychopathology than Enhancing Wellbeing. *Cognitive Therapy and Research*, *44*(1), 28–39. https://doi.org/10.1007/s10608-019-10041-y

Wight, V., Kaushal, N., Waldfogel, J., & Garfinkel, I. (2014). Understanding the Link between Poverty and Food Insecurity among Children: Does the Definition of Poverty Matter?. *Journal of children & poverty*, *20*(1), 1–20. https://doi.org/10.1080/10796126.2014.891973

Woodson, T. (2016). Public private partnerships and emerging technologies: A look at nanomedicine for diseases of poverty. *Research Policy*, *45*(7), 1410–1418. https://doi.org/10.1016/j.respol.2016.04.005

Zubairu, N. (2020). Rising insecurity in Nigeria: Causes and solution. *Journal of studies in social sciences*, *19*.