Addressing the Mental Health Needs of Healthcare Professionals in Africa: A Scoping Review of Workplace Interventions

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Impact Statements

This study provides a comprehensive review of workplace mental health promotion interventions for healthcare professionals across Africa. It reveals promising approaches and significant gaps in current research, policy and practice while offering valuable insights that could promote development of resilient health workforce through Individual, organizational and policy-level mental health interventions.

Abstract

Healthcare workers in Africa face considerable stress due to factors like long working hours, heavy workloads, and limited resources, leading to psychological distress. Generally, countries in the global north have well-established policies and employee wellness programs for mental health compared to countries in the global south. This scoping review aimed to synthesize evidence from published and grey literature on workplace mental health promotion interventions targeting African healthcare workers using Social Ecological Model (SEM) and the Job Demands-Resources (JD-R) model

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Key words: Workplace, Mental Health, Intervention, Health Promotion, Health Professionals, Africa

Abstract

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Introduction:

Health promotion extends beyond individual behaviour change by incorporating social and environmental interventions (World Health Organization, 2024a) . The Ottawa Charter emphasizes the implementation of health promotion strategies in various community settings, including workplaces, prisons, and schools (World Health Organization, 2024d). The workplace, in particular, offers a unique environment for health promotion due to the substantial amount of time adults spend at work and the diverse range of activities that take place there which can impact overall well-being. Consequently, the Luxembourg Declaration promotes a collaborative effort among employers, employees, and society to enhance health and well-being in the workplace through Workplace Health Promotion (WHP) (European Network of Workplace Health Promotion, 2018). WHP involves creating a supportive work environment that promotes healthy behaviours, addresses health risks, and enhances physical and mental health and well-being (Centers for Disease Control and Prevention, 2024b). While physical health workplace health promotion programs have been more prevalent, recent evidence highlights the importance of mental health workplace health promotion interventions and their impact on employee well-being and organisational performance (Søvold et al., 2021a; World Health Organization, 2024c).

Mental health workplace health promotion focuses on implementing policies, programs, and interventions to foster a supportive work environment that enhances employees' mental well-being. This includes awareness campaigns, stress management programs, work-life balance initiatives, and access to mental health services (Centers for Disease Control and Prevention, 2024a; Wu et al., 2021). However, there are disparities in mental health workplace health promotion efforts across countries. Generally, countries in the global North exhibit higher awareness and recognition of mental health issues in the workplace, along with well-established policies, employee wellness programs, mental health training, and available support resources. In contrast, countries in the global South face challenges such as limited resources, inadequate infrastructure, cultural barriers, lower awareness, stigma, and limited access to mental health services (World Health Organization, 2024b).

The workplace of healthcare workers in Africa is characterized by considerable levels of stress. This stress primarily emanates from factors such as extended working hours,

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heavy workloads, and limited resources(Dubale et al., 2019) . Consequently, these stressors significantly contribute to the escalation of psychological distress and burnout among healthcare practitioners (Okwaraji & Aguwa, 2014; Søvold et al., 2021b). Furthermore, the absence of adequate organizational support and resources specifically allocated to managing mental health exacerbates the aforementioned challenges (Dawood et al., 2022; Søvold et al., 2021b). In this regard, healthcare workers are confronted with obstacles that impede their access to care, as the prevailing stigma and discrimination surrounding mental health discourage them from seeking assistance or openly acknowledging their personal struggles (Egbe et al., 2014a; Kapungwe et al., 2010).

Furthermore, healthcare professionals in Africa frequently encounter traumatic experiences within their work environment, including infectious disease outbreaks and humanitarian crises. The exposure to such events heightens the risk of developing post-traumatic stress disorder (PTSD) and other related mental health conditions (De Boer et al., 2011; Greenberg et al., 2015) . Complicating matters further, the prevailing work-life imbalance and the lack of emphasis on self-care practices serve to amplify these challenges faced by healthcare practitioners (Steele, 2020).

To ensure the well-being of healthcare workers in Africa, it is crucial to investigate how to address these pressing mental health concerns through comprehensive interventions that prioritize prevention, early intervention, and accessible mental health support services within the workplace. Implementing robust interventions that target the mental well-being of healthcare professionals can foster a resilient and sustainable healthcare workforce, capable of providing optimal care to the population of Africa.

This scoping review aims to identify and synthesize evidence from published and grey literature on mental health promotion interventions designed for African healthcare professionals at their workplaces, encompassing all forms of research and policy documents. Furthermore, we seek to categorize these interventions based on their type, level of implementation (individual, organizational, or policy), and targeted outcomes, thereby providing a comprehensive overview of the current landscape and identifying gaps in research and practice.

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Methods

The study adopted the framework outlined by Arksey and Malley (2005) for conducting a scoping review (Arksey & O'Malley, 2005) This scoping review was reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR).

Theoretical Framework

This scoping review is grounded in two interconnected theoretical perspectives: the Social Ecological Model (SEM) (Mcleroy et al., 1988; Urie Bronfenbrenner, 1979)and the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti et al., 2001). The SEM provides an overarching framework, positing that health behaviours and outcomes are influenced by multiple interacting levels: individual, interpersonal, organizational, community, and policy. This multi-level perspective aligns with our thematic analysis, which identified interventions targeting various ecological levels. Within this broader ecological structure, the JD-R model offers insight into the specific mechanisms of workplace mental health, proposing that employee wellbeing is determined by the balance between job demands (aspects requiring sustained effort) and job resources (aspects that help achieve goals or reduce demands). Together, these frameworks guide our analysis of workplace mental health promotion interventions for healthcare professionals in Africa, helping to interpret results and inform discussions on practice and research implications. This integrated approach underscores the need for multi-level interventions that address both environmental factors and individual coping strategies, particularly in the resource-constrained and high-demand context of African healthcare settings.

Inclusion and Exclusion Criteria

The study included all articles with primary, secondary, and tertiary preventive interventions that promote the mental health of health workers at their workplace in Africa that are written or translated into English. Date of publication, quality of articles

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and methodology were not considered in the selection. Health promotion interventions that focused only on physical health of health workers at their workplace were excluded. Additionally, studies with interventions to address mental health of health workers in their workplace outside the African continent, and those not available or translated in English were excluded.

Search Strategy

Database searches were completed in Ovid MEDLINE, Ovid Embase, Ovid PsycInfo, Cochrane Library (via Wiley), CINAHL, Scopus, and Web of Science core collection on the 4th August 2023 to retrieve all relevant literatures pertaining to the mental health promotion interventions for healthcare professionals in Africa, relevant keywords, word phrases and controlled vocabulary were carefully selected. Boolean operators (AND, OR) were used in each of the databases to combine keywords, their alternative with applied wild cards or truncation to search for relevant studies. No language or date limits were applied. Studies were exported to a web-based tool called Covidence (www.covidence.org). Bibliographies from included studies were also reviewed and grey literature was searched on United Nations (UN) agencies websites such as the World Health Organization (WHO), International Labour Organization (ILO), and United Nations Development Programme (UNDP). To gather additional information, non-governmental organizations (NGOs) website such as the African Centres for Disease Control and Prevention, Africa Mental Health Foundation (AMHF), African Mental Health Research Initiative (AMARI), Strong Minds, and Basic Needs Africa were searched. **Appendix 1** shows full search strategies. All articles from the 7 databases were combined in Covidence and duplicates were removed. The title and abstract were then screened on Covidence by two researchers independently to exclude those that do not meet the inclusion criteria. Where there was disagreement, a third reviewer served as an arbitrator to reach a consensus. After the title and abstract screening, a full text screening to exclude those that do not meet the criteria was done by two reviewers with a third reviewer involved in resolving disagreements.

Data Extraction

Microsoft Excel 365 was used for data extraction and analysis. The collated information includes. Study Title, Authors, Year of Publication, Country, Aim of studies, Workplace of Health Worker, Setting of Intervention, Sample Size, Study Design, Age

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Range of participants, Category of Healthcare Professionals, Type of intervention, Name of Mental Health Intervention, Description of Mental Health Intervention, Duration of Intervention, Frequency of intervention, Outcomes Measured, Key Findings.

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Data synthesis

A narrative approach was utilized to gather identified data. The data were generated based on countries within the African region, specific populations of interest (healthcare workers), the level of healthcare facility as their workplace, and the mental health interventions provided. We employed tables to summarize the features of the studies and interventions, and a map to describe the countries where the studies were conducted.

Results

A total of 5590 results were retrieved from databases . No relevant article was found from reference list searching and other websites. A total of 2,925 duplicates were removed and 2665 studies screened against title and abstract. A total of 2528 studies were excluded after title and abstract while 137 studies assessed for full-text eligibility. After full text screening 120 studies were excluded and 17 studies made the inclusion criteria. **Figure 1 is the PRISMA Diagram while Table 1and 2 is the summary characteristics of included studies.**

Countries of study

Seventeen studies that met the inclusion criteria are from 10 African counties, namely Botswana, Egypt, Kenya, Malawi, Nigeria, Rwanda, Sierra Leone, South Africa, Tunisia, and Zimbabwe. **Figure 2 Shows the Map of countries included in the studies with intervention.**

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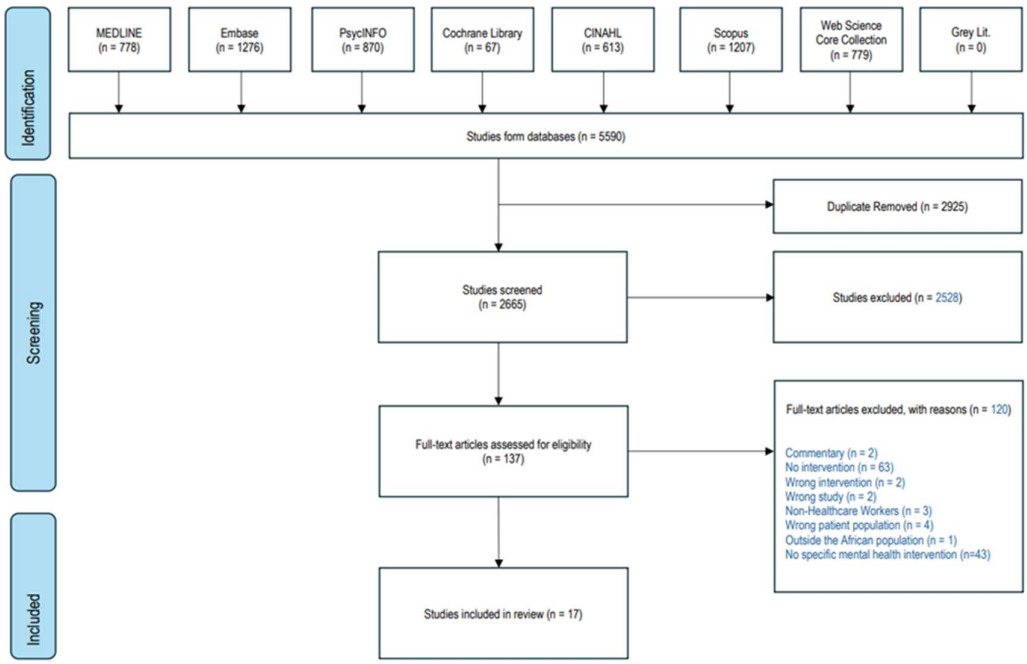

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231 **Figure 1 PRISMA Diagram**

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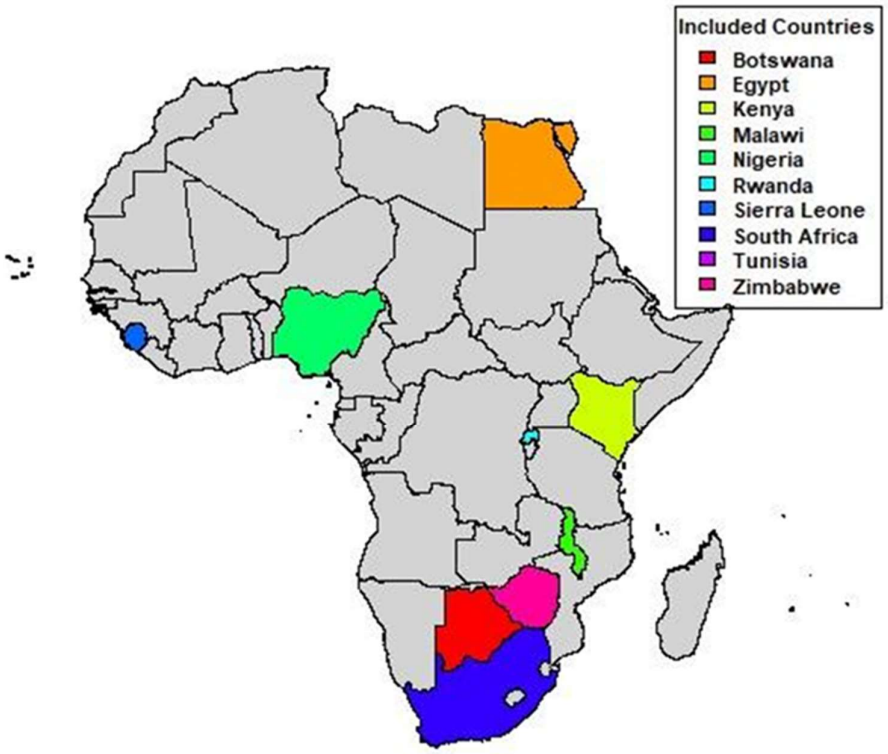

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233 **Figure 2 Map of countries included in the studies with intervention**

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234 Table 1: summary characteristics of included studies.

S/N	Study Title	Authors	Year of Publication	Aim of studies	Study Design	Sample Size	Category of Healthcare Professionals (Study Participants)	Description of Mental Health Status of Participants at enrolment	Description of Mental Health Intervention
1	Developing an mHealth Intervention to Reduce COVID-19–Associated Psychological Distress Among Health Care Workers in Nigeria: Protocol for a Design and Feasibility Study	A. Akinsulore, O. Aloba, O. Oginni, I. Oloniniyi, O. Ibigbami, C. Seun-Fadipe, T. Opakunle, A. Owojuyigbe, O. Olibamoyo, B. Mapayi, V. and Okorie, A. Adewuy(Akinsulore et al., 2022)	04-Jan-22	The overall aim of the study is to investigate COVID-19 associated psychosocial distress and evaluate the feasibility of using the m-Health-based intervention in managing this distress among health care workers in Nigeria.	Mixed Methods (Quantitative and Qualitative)	Quantitative Study: 440 nurses and doctors (healthcare workers) Qualitative Study: 60 in-depth interviews, 20 key informant interviews, and 4 focus group discussions (24 participants) Mixed Methods: 40 participants in-depth interviews	Doctors and Nurses	No description mental health status of participants enrolment	The intervention mHealth encompasses using mobile devices to collect, store, retrieve, and share information among users of the mHealth platform. Described as the 'therapist in the pocket' intervention, the m-Health is a treatment technique administered independently or as a supplement to extensively transform psychological treatment. The delivery of healthcare and public health services through mHealth relies heavily on using short message services (SMS), voice, and multimedia

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									services (MMS) on mobile phones.
2	Laughter therapy as an intervention to promote psychological well-being of volunteer community care workers working with HIV-affected families	Irene Hatzipapas, Maretha J. Visser, and Estie Janse van Rensburgc(Hatzipapas et al., 2017)	14-Dec-17	The research had two main objectives: firstly, to gain insight into the emotional experiences of community care workers who provide care for families affected by HIV, and secondly, to investigate the benefits of laughter therapy sessions as a form of self-care for these workers. The aim was to determine the value of such sessions within this context.	Mixed methods (quantitative and qualitative research technique)	30 care workers (initial sample size); 10 participants (willing to do interviews): 3 male and 7 females; 7 participants (completed the interviews): 2 males and 5 females	Volunteer Community Health Workers	No description of mental health status participants at enrolment	Aerobic Laughter Therapy (ALT) is a complementary treatment that aids in coping with various challenges by encouraging playfulness and stress relief. Sessions begin with warm-up activities like stretching and clapping to promote childlike playfulness, followed by guided breathing and laughter exercises that combine acting and visualization techniques.
3	The development of a model for dealing with secondary traumatic stress in mental health workers in Rwanda	Jean Damascene Iyamuremye, and Petra Brysiewicz (Iyamuremye & Brysiewicz, 2015)	24-Feb-15	The aim is to develop a comprehensive model that effectively manages the effects of secondary traumatic stress (STS) on mental health workers in	Quantitative design and Qualitative design using Collaborative Action Research Approach	180 participants for the Quantitative design; 30 mental health workers for the Qualitative Design (unstructured interviews)	Mental health workers (nurses, doctors, psychologists, trauma counsellors and social workers	Participants were above the cut-off levels for significant traumatisation and at risk of secondary traumatic stress	The Intervention Model to Manage Secondary Traumatic Stress (IMMSTS) was developed for mental health workers in Rwanda, addressing the high levels of

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				Rwanda. This model will integrate primary, secondary, and tertiary interventions to manage the impact of STS on mental health workers in Rwanda.				(73.8% personally experience the 1994 genocide 10% experienced accidental disaster 7.7% had experienced emotional and psychological abuse 7.2% had experienced some kind of natural disaster 2.2% physical abuse as a child)	secondary traumatic stress experienced by professionals who were often themselves victims of the 1994 genocide. It comprises three main components: prevention (including education, self-awareness, and calmness techniques), assessment (both individual and organizational risk evaluation), and treatment (self-care strategies and therapeutic approaches).
4	Psychosocial support and resilience building among health workers in Sierra Leone: Interrelations between coping skills, stress levels, and interpersonal relationships.	Linda Vesel1, Kathryn Waller , Justine Dowden , Jean Christophe Fotso(Vesel et al., 2015)	8-Jun-15	The specific aims were to improve coping techniques among health workers by addressing workplace stressors and introducing support services, and to improve interpersonal relationships between health workers and with client	Mixed Methods	271	Community Health Officers, Maternal and Child Health Aides, Registered Nurses, Vaccinators, Nursing Aides, Community Health Nurses and Endemic Disease Control Unit Assistants;	No description of mental health status participants at enrolment	The Helping Health Workers Cope (HHWC) intervention includes training on communication, self-care, and social connectedness to help health workers better manage work-related stress and improve their relationships with colleagues and clients

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5	Training peers to treat Ebola centre workers with anxiety and depression in Sierra Leone.	Waterman, Samantha; Hunter, Elaine Catherine Margaret ; Cole, Charles L ; Evans, Lauren Jayne ; Greenberg, Neil ; Rubin, G James ; Beck, Alison(Waterman et al., 2018)	10-Jul-05	To train Ebola Treatment Centre (ETC) staff to provide a 3-phase CBT based intervention for common mental health problems to fellow ETC staff and explored the effectiveness of the intervention	Pre and post intervention assessment(quasi-experiment)	3273	Not specified	No description of mental health status participants at enrolment	The intervention is a phased, CBT-based group program provided to staff at an Ebola Treatment Center (ETC) in Sierra Leone after the Ebola crisis. It included three key phases: A 2-hour Psychological First Aid workshop where staff could discuss work-related challenges and coping strategies. Targeted workshops addressing specific mental health issues identified during the initial screening. Intensive CBT-based interventions delivered by trained local facilitators, with remote support from UK clinicians.

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6	Developing a healthcare worker psychological preparedness support programme for the COVID-19 outbreak	Zukiswa Zingela Stephan van Wyk Aletta Bronkhorst Carmenita Groves(Zingela et al., 2022)	10-Mar-22	To develop a psychological preparedness training (PPT) programme to support frontline health workers	Observational, descriptive, and cross-sectional design with pre- and post intervention analysis	761	Not specified	No description of mental health status participants at enrolment	The intervention is a group psychological preparedness training (PPT) developed and implemented to support healthcare workers during the COVID-19 outbreak. It focused on helping healthcare workers identify and manage thoughts, feelings, and behaviours related to the outbreak, develop coping strategies, and reinforce team strengths.

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7	Effectiveness of a chatbot in improving the mental wellbeing of health workers in Malawi during the COVID-19 pandemic: A randomized, controlled trial	Eckhard F. Kleinau1*, Tilinao Lamba2, Wanda Jaskiewicz3, Katy Gorentz3, Ines Hungerbuehler4, Donya 6 Rahimi3, Demoubly Kokota2, Limbika Maliwichi2, Edister S. Jamu2, Alex Zumazuma5, Mariana Negrão4, 7 Raphael Mota4, Yasmine Khouri4, Michael Kapps4(Kleinau et al., 2024)	28-Jan-2023	To investigate the working hypothesis that a virtual mental healthcare assistant chatbot, Vitalk, is an acceptable source of psychosocial and mental wellbeing support for health workers to effectively decrease work-related anxiety, depression, burnout, and loneliness (based on standard mental health scales), and to increase resilience and resilience-building behaviors.	RCT	1584 enrolled, 836 completed	Doctors Nurses Medical Assistants Clinical officers Laboratory technicians Physiotherapy technicians Pharmacists Physiotherapists	About 1 in 8 participants (approximately 12-13%) reported anxiety and depression - Mean baseline anxiety score (GAD-7) was 4.5 - Mean baseline depression score (PHQ-9) was 4.0 2. Burnout: Approximately 3 in 4 participants (75%) suffered from burnout - Mean baseline burnout score (OLBI) was 38.4 3. Resilience: - About 1 in 4 participants (25%) had low resilience levels - Mean baseline resilience score (RS-14) was 78.6, indicating moderate	Vitalk is an automated mental health chatbot app that delivers content through interactive conversations based on Cognitive Behavioral Therapy (CBT) and Positive Psychology.. The control group accessed four static mental health resources through internet links to read webpages

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								to moderately high resilience - Mean baseline resilience-building activities score was 13.1, indicating moderate level 4. Loneliness: - Mean baseline UCLA loneliness score was 5.3	

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8	Implementation of a National Workplace Wellness Program for Health Workers in Botswana	Jenny H. Ledikwe, PhD, Bazghina-werq Semo, MD, Miram Sebego, PhD, Maureen Mpho, BSc, Heather Mothibedi, MSc, Shreshth Mawandia, MSW, MPH, and Gabrielle O'Malley, PhD(Ledikwe et al., 2017)	24-Jul-2017	The aim of the study was to assess the level of implementation of the National Workplace. Wellness Program (WWP) in Botswana and identify barriers to and facilitators of implementation. The WWP aimed to empower health workers with knowledge and skills to manage and cope with the dynamic demands of the health care system, which had been exacerbated by the HIV/AIDS epidemic.	Sequential, explanatory, mixed methods design including a national implementation assessment and in-depth interviews	National implementation assessment of 27 Health districts and and 38 in-depth interviews	All workers in healthcare facilities including non health professionals	No description of mental health status participants at enrolment	The intervention involved the implementation of Botswana's National Workplace Wellness Program (WWP) for healthcare workers (HCWs) which included health screenings, treatment, and care, focusing on conditions like HIV, tuberculosis, and cancers, along with health promotion activities such as seminars and health talks. Stress management and team-building workshops, occupational health and safety measures, psychosocial and spiritual care, and therapeutic recreation
9	Mitigation of Mental Health Effects Covid-19 Pandemic among Healthcare Workers in Western Kenya	Maingi, Z.; Kathukumi, K.; Jaika, S.; Odera, P.; Konyole, S.; Tibbs, C.(Maingi et al., 2022)	09-Jun-22	To investigate the measures adopted by HCW in western Kenya to mitigate the mental health effect of the COVID-19	Cross sectional Descriptive Study Design	356	Medical Doctors Clinical Officers Nurses Nutritionist Medical Laboratory Officers Social Workers Psychologist Counsellors Radiographer	No description of mental health status participants at enrolment	Government guideline on mental health and psychological support during COVID-19: Recommended Sufficient rest at work Eating health food Engaging in physical activity Staying

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							Pharmacist invol in COVID 19 care		connected with friends and family. Avoiding unhelpful coping strategies such as alcohol consumption and smoking)
10	Effects of music therapy on occupational stress and burn-out risk of operating room staff.	I. Kacem, M. Kahloul, S. El Arem, S. Ayachi, M. Hafsia, M. Maoua, M. Ben Othmane, O. El Maalel, W. Hmida, O. Bouallague, K. Ben Abdessalem, W. Naija & N. Mrizek (Kacem et al., 2020)	25-May-20	It evaluates the effects of music therapy program on the level of stress and burnout risk among the operating room staff of urology and maxillofacial surgery in an academic hospital.	Quasi-experimental study with pre-post measures	34 participants	Surgeons, Anesthetist doctors, Anesthetist technicians, Nurses, Instrumentalists, and Caregivers	Using the Perceived Stress Scale (PSS-10) and the Maslach Burnout Inventory (MBI). 41.2% of participants had high levels of perceived stress. Burnout Indicators: Emotional Exhaustion: 38.2% of participants had high scores. Depersonalization: 50% had high scores. Professional Achievement: 58.8% had low scores. Burnout Syndrome: 17.2% of participants had a	Three daily music therapy sessions, each lasting 30 minutes, were provided to the operating room staff during working days. If a patient-related event occurred, the session was rescheduled. A generic brand CD player was used in all operating rooms, and the musical repertoire varied, including oriental, occidental, and Tunisian music to accommodate participants' preferences. 4o

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								high level of burnout	
11	Does mindfulness reduce perceived stress in healthcare professionals?	Kckaou, A., Dhouib, F., Kotti, N., Sallemi, I., Hammami, K. J., Masmoudi, M. L., & Hajjaji, M.(Kckaou et al., 2023)	18-Nov-22	The aim is to explores the associations between mindfulness, perceived stress, and well-being and life satisfaction across different professional categories.	Cross-sectional correlational study	400 questionnaires distributed, 317 were returned, but only 297 questionnaires (74.25%) were included for data analysis.	Staff nurses, medical technicians, and doctors	No description of mental health status participants at enrolment	The study explores the relationships between mindfulness and other factors like perceived stress, well-being, and life satisfaction among healthcare professionals.
12	Improving Healthcare Worker Resilience and Well-Being During COVID-19 Using a Self-Directed E-Learning Intervention	Frances Kelly, Margot Uys, Dana Bezuidenhout, Sarah L. Mullane, and Caitlin Bristol(Kelly et al., 2021)	02-Dec-21	The aim is to explores if there were any associations between behaviours, resilience, and well-being.	Cross-sectional study	474, participants that completed both the pre- and post-training assessments	Audiologist, speech therapist, Clinical Associate, Dentistry and Oral hygiene, Homoeopath, Medical Practitioner, Nursing, Occupational Therapist, Optometrist, Paramedic, Pharmacist, Physio, Chiro, Dietician, Biokineticist, Podiatry,	No description of mental health status participants at enrolment	A self-paced, online learning course designed to support healthcare worker well-being and resilience during the COVID-19

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							Radiography, sonography, radiotherapist, Registered counsellor, psychologist, and social worker		
13	Caring for the careers: A psychosocial support model for healthcare workers during a pandemic	Idah Moyo, Livhuwani Tshivhase, & Azwihangwisi H. Mavhandu-Mudzusi(Moyo et al., 2023)	21-Jun-2023	to develop a psychosocial support model that sustains a support structure that will contribute to an enabling work environment promoting efficiency and effectiveness in response to public health emergencies	Modelling	Not applicable	Nurses	No description of mental health status participants at enrolment	The intervention is a psychosocial support model for healthcare workers during pandemics, including structured support with dedicated staff, counseling and follow-up for staff and families, a virtual crisis support, a welfare budget, training and follow-up for sick workers, effective communication, an anonymous platform for sharing experiences, and addressing resource shortages with adequate protective equipment

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14	How do family supportive supervisors affect nurses' thriving: Research before and during COVID-19 pandemic?	Şahin S, Adegbite WM, Tiryaki Şen H.(Şahin et al., 2021)	24-Aug-2021	To examine the effects of Covid-19 pandemic on nurses' perceived family supportive supervisor behaviors, work-to-family conflict, psychological well-being, and thriving; and To test the effects of nurses' perceived family supportive supervisor behaviours on their thriving through work-to-family conflict and psychological well-being	Cross sectional	511	Nurses	No description of mental health status participants at enrolment!	The intervention uses family-supportive supervisor behaviours to enhance nurses' thriving, reduce work-to-family conflict, and improve psychological well-being. These behaviours involve providing emotional and practical support, role modelling, and implementing creative strategies to help nurses effectively manage their work and family responsibilities

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15	The effectiveness of assertiveness training program on psychological wellbeing and work engagement among novice psychiatric nurses	Enas Mahrous Abdelaziz, Iman Abdelmotelb Diab, Marwa Mohamed Ahmed Ouda, Nadia Bassiouni Elsharkawy, Fadia Ahmed Abdelkader(Abdelaziz et al., 2020)	07-Feb-2020	To assess the effectiveness of an assertiveness training program on psychological wellbeing and work engagement among novice psychiatric nurses	A quasi-experimental design, single group (pre-post comparisonwithout a control group)	36	Nurses	No description of mental health status participants at enrolment	The study uses assertiveness training program for novice psychiatric nurses to enhance their assertiveness, psychological well-being, and work engagement. Over seven weeks with twice-weekly sessions, the program covered assertive communication and anger management through lectures and role-playing.
16	Coping with COVID: Developing a Rapid-cycle Frontline Quality-improvement Process to Support Employee Well-being and Drive Institutional Responsiveness in a Tertiary Care Faith-based Hospital in Rural Kenya	Mary B. Adam, Naomi Wambui Makobu, Wilson Karuri Kamiru, Simon Mbugua, and Faith Mailu(Adam et al., 2021)	15-Jun-21	To determine personal coping strategies used by staff and provide an opportunity for staff cross-learning; ask staff about what they need most; and provide a real-time feedback loop for decision-makers to support staff while coping with and managing stress during the COVID-19 outbreak	qualitative with a focus-on-focus group discussion	122: in 17 focus group discussion sessions	All categories: Housekeeping, Housing, Kitchen, Nursing, Pharmacy, Laboratory, Radiology, Sewing, Nutrition, Physiotherapy, Finance, Clinical Officers, and Medical Officer Interns	No description of mental health status participants at enrolment	The rapid cycle debrief session intervention consisted of conducting focus group discussions with frontline staff, excluding managers. The participants share their experiences and needs anonymously using sticky notes. Over a two-week period, a total of 17 focus groups were conducted, personal coping strategies, staff needs, and provide a real-

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									time feedback loop for management
17	Psychological support unit design and implementation during COVID-19 pandemic: Case of Mongi Slim Hospital, Tunisia	Wafa Abdelghaffar, Nadia Haloui, Noamen Bouchrika, Souha Yaakoubi, Amani Sarhane, Emna Kalai, Nihel Siala, Hajer Boulehmi, Souad Trabelsi, Soumaya Bourgou, Fatma Charfi, Ahlem Belhadj, Rym Rafrafi(Abdelghaffar et al., 2021)	24-Jun-21	To describe the design and implementation of a Psychological Support Unit for staff and patients of a hospital	Descriptive activities of a PSU during COVID 19	Not specified	not specified	No description of mental health status participants at enrolment	The Psychological Support Unit (PSU) at established during the COVID-19 pandemic to offer mental health support. It provided prevention and care activities for patients, families, and healthcare professionals, including a free helpline, stress management workshops, debriefing sessions, and support groups.

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236 Table 2: summary characteristics of included studies.

S / N	Authors	Outcomes Measured	Tools used in measurement	Facility level of workplace	Level of Prevention	Quantitative results	Key Findings	SEM Policy Organizational (institutions) Interpersonal (families, friends, social networks) Individual (Knowledge, attitudes, skills)	Job Demand - Resources
1	A. Akinsulore, O. Aloba, O. Oginni, I. Oloniniyi, O. Ibigbami, C. Seun-Fadipe, T. Opakunle, A. Owojuyigbe, OOlibamoyo, B. Mapayi, V. and Okorie, A. Adewuy(Akinsulore et al., 2022)	Psychological distress, changes in depressive and anxiety symptoms. Secondary outcomes focus on the feasibility, usability engagement, satisfaction, acceptability of mobile health (mHealth) interventions	1. Kessler Psychological Distress Scale 2. The 9-item Patient Health Questionnaire 3. The 7-item Generalized Anxiety Disorder Scale 4. The Ssystem Usability Scale 5. The Mobile App Rating Scale	Tertiary	Secondary	No available quantitative results as the paper described the study still in progress	These findings underscore the urgent need for targeted psychological support for healthcare workers and highlight the potential of mHealth interventions to provide accessible mental health care. By offering support remotely, these interventions can overcome barriers of distance and offer the added advantage of privacy, helping to reduce the stigma often associated with seeking mental health support in traditional healthcare settings.	Individual level	
2	Irene Hatzipapas, Maretha J. Visser, and Estie Janse van Rensburgc(Hatzipapas et al., 2017)	Anxiety , depression, Perceived Stress and coping mechanisms	1. Perceived stress scale (PSS) 2. Hospital anxiety and depression scale (HADS)	Primary	Secondary	Due to small sample size (7) no broad statistical claims made .	The study found that laughter therapy sessions had a beneficial impact on community care workers attending to HIV-affected families. The intervention reduced anxiety, depression, and stress levels among participants, leading to	Individual level	

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							more positive emotions, improved social relationships, and better coping mechanisms.		
3	Jean Damascene Iyamuremye, and Petra Brysiewicz (Iyamuremye & Brysiewicz, 2015)	Secondary traumatic stress (STS) on mental health workers and personal experiences, emotional impacts, and coping mechanisms related to STS.	1. Trauma Attachment Belief Scale (TABS) 2. Intervention Model to Manage Secondary Traumatic Stress (IMMSTS)	Community Care	Primary and secondary	Specific quantitative results after implementing the model are not provided The quantitative results pre-intervention: 73.8% experienced genocide events Mean TABS (Trauma Attachment Belief Scale) score was 77.0 (sd 1.2) (above the cut-off point of 50 for significant traumatization)	The model tend offer mental health professionals an effective framework for addressing the issue of STS	Individual /Organizational level	Job demand resources
4	Linda Vesel1, Kathryn Waller , Justine Dowden , Jean Christophe Fotso(Vesel et al., 2015)	Perceived stress levels, coping skills, and interpersonal relationships.	1. Proforma form	Primary	primary	Overall coping strategies increased from 2.63 (pre-test) to 3.23 (post-test) (p=0.000) Communication skills increased from 2.26 to 3.42 (p=0.000) Self-care skills increased from 2.72 to 2.99 (p=0.000)	The study revealed notable improvements in coping skills, stress management, and relationships with colleagues and clients in the intervention group compared to both pre-intervention and control groups. Health workers showed enhanced abilities in communication, self-care, and social connectedness following the intervention.	Individual/ Interpersonal Level	

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						Social connectedness increased from 2.81 to 3.32 (p=0.000) Stress Levels: Post-intervention stress levels were lower in intervention district (2.40) compared to control district (2.48) (p=0.034) Relationships (measured on a 4-point scale): Overall relationships improved from 2.69 to 3.47 (p=0.000) Relationships with co-workers at facility improved from 2.67 to 3.55 (p=0.000) Relationships with patients improved from 2.66 to 3.42 (p=0.000) Relationships: Overall relationships: 3.47 vs 3.35 (difference +0.121, p=0.025) With co-workers at facility: 3.55 vs 3.44 (difference +0.111, p=0.110) - not statistically significant			

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						With patients: 3.42 vs 3.49 (difference -0.072, p=0.320) - not statistically significant			
5	Waterman, Samantha; Hunter, Elaine Catherine Margaret ; Cole, Charles L ; Evans, Lauren Jayne ; Greenberg, Neil ; Rubin, G James ; Beck, Alison(Waterman et al., 2018)	Stress, sleep, anxiety, depression, behavioural changes, relationship difficulties, and post-traumatic stress disorder (PTSD).	1. item wellbeing screening tool 2.. Post-Traumatic Stress Checklist – Civilian version (PCL-C) 3. Perceived Stress Scale (PSS) 4. Insomnia Severity Index (ISI) 5. Generalised Anxiety Disorder 7 (GAD7) 6. Patient Health Questionnaire 9 (PHQ9) 7. Relationship Questionnaire 8. Behaviour questionnaire	Tertiary	Secondary	Phase 2 to Phase 3 Changes: Stress decreased from 27.77 ± 7.63 to 23.37 ± 6.02 ($p < .05$) Anxiety decreased from 16.88 ± 3.83 to 13.76 ± 6.77 ($p < 0.05$) Depression decreased from 22.10 ± 4.31 to 15.56 ± 9.16 ($p < .01$) Behavioral problems decreased from 1.30 ± 1.34 to 0.53 ± 1.11 ($p < .05$) Alcohol usage decreased from 3.69 ± 4.53 to 1.54 ± 2.86 ($p < .05$) Phase 3 Pre-Post Changes:	Effectively reduced mental health symptoms among health and Significant improvements were observed across multiple measures, including stress, depression, anxiety, behaviour, and relationships	Individual level	

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						Wellbeing Screening Measure improved from 44.61 ± 16.05 to 33.93 ± 15.75 ($p < .01$) PTSD symptoms decreased from 59.39 ± 17.86 to 46.41 ± 19.53 ($p < .01$) Stress decreased from 23.58 ± 5.50 to 20.58 ± 4.44 ($p < .01$) Sleep problems decreased from 24.23 ± 8.91 to 19.60 ± 7.63 ($p < .01$) Anxiety decreased from 13.52 ± 6.35 to 10.40 ± 6.48 ($p < .05$) Depression decreased from 15.32 ± 8.23 to 12.60 ± 7.70 ($p < .05$) Anger decreased from 10.60 ± 6.11 to 7.43 ± 5.87 ($p < .01$) Relationship difficulties decreased from 27.61 ± 5.87 to 23.78 ± 6.05 ($p < .01$)			

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6	Zukiswa Zingela Stephan van Wyk Aletta Bronkhorst Carmenita Groves(Zingela et al., 2022)	Psychological preparedness, stress management, and coping abilities	26-item audit tool used to evaluate healthcare workers' knowledge, preparedness, coping ability, and stress management related to the COVID-19 outbreak.	Tertiary	Primary	Statistical Analysis Results: 26-item Audit Tool Showed statistically significant improvement from pre- to post-intervention (M = 2.77, SD = 0.66 pre-intervention to M = 3.57, SD = 0.44 post-intervention; t = –9.7, df = 144.22, p < 0.001) For the 10-item tool: Showed statistically significant improvement from pre- to post-intervention (M = 2.44, SD = 0.58 pre-intervention to M = 3.11, SD = 0.70 post-intervention; t = –10.87, df = 159.77, p < 0.001)	The intervention enhanced healthcare workers' ability to manage outbreak-related stress, improved coping skills, and fostered better teamwork and collaboration among staff.	Individual level	

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7	Eckhard F. Kleinau1*, Tilinao Lamba2, Wanda Jaskiewicz3, Katy Gorentz3, Ines Hungerbuehler4, Donya 6 Rahimi3, Demoubly Kokota2, Limbika Maliwichi2, Edister S. Jamu2, Alex Zumazuma5, Mariana Negrão4, 7 Raphael Mota4, Yasmine Khouri4, Michael Kapps4(Kleinau et al., 2024)	Depression Burnout Anxiety Loneliness Resilience Mood	1. Depression-Patient Health Questionnaire (PHQ-9) 2. Burnout-Oldenburg Burnout Inventory (OLBI) 3. Anxiety-Generalized Anxiety Disorder (GAD-7) 4. Loneliness-UCLA Short (three-item) Loneliness 5. Scale (UCLA Loneliness) 5. Resilience-5-item Resilience-Building Behaviour Scale 6. 14-item Resilience Scale (RS–14) Mood-Mood meter	Primary, Secondary and Tertiary	Secondary	Difference-in-Differences (DiD) Estimators: Depression: -0.68 [95% CI -1.15 to -0.21] Anxiety: -0.44 [95% CI -0.88 to 0.01] Burnout: -0.58 [95% CI -1.32 to 0.15] Resilience: 1.47 [95% CI 0.05 to 2.88] Resilience-building activities: 1.22 [95% CI 0.56 to 1.87] Effect Sizes (Cohen's d): Treatment group showed medium effect sizes: Depression: -0.41 Burnout: -0.36 Anxiety: -0.32 Resilience: 0.42 Resilience-building: 0.78 Reliable Change Percentages: Treatment Group: Depression: 17% improved Anxiety: 24% improved Resilience-building: 26% improved	Both Vitalk and access to a webpage intervention resulted to improvements in mental wellbeing and resilience. However, the effect size was consistently larger for the treatment group with Vitalk than for the control group with access to webpage.	Individual level	

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						Resilience: 13% improved Mean Scores at Baseline vs Endline: Treatment Group: Anxiety: 4.73 to 2.93 Depression: 4.29 to 2.72 Burnout: 38.84 to 36.63 Resilience: 77.69 to 82.			

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8	Jenny H. Ledikwe, PhD, Bazghina-werq Semo, MD, Miram Sebego, PhD, Maureen Mpho, BSc, Heather Mothibedi, MSc, Shreshth Mawandia, MSW, MPH, and Gabrielle O'Malley, PhD(Ledikwe et al., 2017)	level of implementation of the national Workplace Wellness Program	Implementation Assessment Summary score	Tertiary	Primary	There was one main quantitative measurement used	The National Workplace Wellness Program for health workers had varied in implementation across districts, with more focus on health screenings and promotion than on occupational health and psychosocial services. Success was driven by wellness committees, administrative support, and cultural integration, but challenges included competing priorities, limited technical capacity, discomfort among workers, and a lack of emphasis on personal wellness	Policy level	
9	Maingi, Z.; Kathukumi, K.; Jaika, S.; Odera, P.; Konyole, S.; Tibbs, C.(Maingi et al., 2022)	Measure to mitigate mental health effect of COVID-19/Prevalence of mental disorders	Semi structure questionnaire adapted from PHQ-9	Secondary and Primary	Primary	Measures Adopted to Promote Mental Wellbeing: 43.3% (n=154) engaged in physical activity 80.1% (n=285) consumed healthy, sufficient diet 79.2% (n=282) engaged in caring for others 79.2% (n=282) kept active	The most used coping strategies include acceptance of situation, healthy eating, maintain family and friendship ties with family being the most used strategies .	Individual/ Interpersonal level	

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						79.5% (n=283) maintained contact with family and friends 69.9% (n=249) used social media 72.2% (n=257) talked about their feelings 84.8% (n=302) practiced acceptance of the situation			
10	I. Kacem, M. Kahloul, S. El Arem, S. Ayachi, M. Hafsia, M. Maoua, M. Ben Othmane, O. El Maalel, W. Hmida, O. Bouallague, K. Ben Abdessalem, W. Naija & N. Mrizek (Kacem et al., 2020)	Perceived stress and Burnout	Perceived Stress Scale version (PSS-10) and the Maslach Burnout Inventory (MBI), its French version. PSS-10 measured stress level and MBI measured burnout. The tools were administered as self-questionnaires.	Tertiary	Primary	Quantitative Results After Music Therapy Intervention: Perceived Stress Scale Results: Mean score decreased significantly from 22 ± 8.9 to 16 ± 7.9 (p = 0.006) Number of participants with high stress level decreased from 14 (41.2%) to only 4 (22.2%) Maslach Burnout Inventory Results: Emotional exhaustion score decreased significantly from 27 ± 10.8 to 19.2 ± 9.5 (p = 0.004)	Music therapy significantly improved the stress levels of the operating theatre staff suggesting a wide use of this non-pharmacological, simple, economical and non-invasive therapy as a preventive measure.	Individual level	

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						No significant changes in other burnout dimensions: Depersonalization (p = 0.5) Professional achievement (p = 0.73) Overall burnout level showed minimal change from 17.2% to 15% (p = 0.98) 73.5% of participants reported that the intervention was beneficial			
11	Kckaou, A., Dhouib, F., Kotti, N., Sallemi, I., Hammami, K. J., Masmoudi, M. L., & Hajjaji, M.(Kckaou et al., 2023)	Perceived stress, satisfaction with life, and well-being	The Mindful Attention Awareness Scale (MAAS), the Perceived Stress Scale (PSS), the World Health Organisation Well-Being Index (WHO-5) and the Satisfaction with Life Scale (SWLS) as self-reporting questionnaires.	Tertiary	Primary /Secondary	Reduced perceived stress (β = -0.30, P < 0.000) and high levels of well-being (β = 0.13, P = 0.03) were associated with mindfulness	The study found that higher levels of mindfulness is significantly associated with lower perceived stress and higher levels of well-being	Individual level	

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12	Frances Kelly, Margot Uys, Dana Bezuidenhout, Sarah L. Mullane, and Caitlin Bristol(Kelly et al., 2021)	Knowledge, Confidence, Resilience-building behaviours, Resilience and well-being	A validated 10-item Connor-Davidson Resilience Scale (10-item CD-RISC) for Resilience, World Health Organisation-5 well-being index (WHO-5) for Well-being, and other outcomes were measured using a questionairre developed for this reseach purpose.	Primary	Primary	Knowledge scores: Mean increase: 1.52 points (p=0.00) Confidence scores: Mean increase: 4.94 points (p=0.00) Resilience-building behaviors: Mean increase: 3.06 points (p=0.00) Resilience (CD-RISC): Mean increase: 3.31 points (p=0.00) Well-being (WHO-5): Mean increase: 2.58 points (p=0.00) Overall satisfaction rating: 4.4 out of 5	Results showed significant improvements across all measured domains, suggesting that this type of e-learning intervention can be effective in supporting healthcare worker mental health during crisis periods.	Individual level	
13	Idah Moyo, Livhuwani Tshivhase, & Azwihangwisi H. Mavhandu-Mudzusi(Moyo et al., 2023)	Structural outcomes include financial, human, and material resources; process aspects like communicatio n, training, and support activities		Tertiary and Secondary	Primary	The study was focused on model development using qualitative methods rather than measuring intervention outcomes quantitatively	The study identified significant gaps in the healthcare delivery system. Such as inadequate institutional support, shortages in human and material resources, and the financial burden on workers. In response, the research developed a psychosocial support model to offer guidance to support frontline workers and enhance health service delivery during COVID-19 and future public health emergencies	Individual level Organisational level	Job demand Resources

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14	Şahin S, Adegbite WM, Tiryaki Şen H.(Şahin et al., 2021)	Work-to-family conflict, and psychological well-being of nurses	Psychological well-being scale developed by Diener et al. (2010) Work to family conflict scale developed by Netemeyer et al. (1996), Family supportive supervisor behaviours scale developed by adaptation of scales by Clark, 2001; Hammer et al., 2009; and Thompson et al., 1999	Not indicated	Primary	Nigerian data excluded in this analysis because the data could not be obtained during Covid-19 pandemic	Family supportive supervisor behaviours contribute significantly to reduced work-to-family conflict, and to better psychological well-being of nurses	Interpersonal level	

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15	Enas Mahrous Abdelaziz, Iman Abdelmotelb Diab, Marwa Mohamed Ahmed Ouda, Nadia Bassiouni Elsharkawy, Fadia Ahmed Abdelkader(Abdelaziz et al., 2020)	Assertiveness skills. Psychological wellbeing and Work engagement	1. Rathus Assertiveness Schedule; 2.Ryff's Psychological Well-Being Sclaes. 3.Utrecht Work Engagement Scale (UWES)	Tertiary	Primary	Results comparing before (T1) and after (T2) assertiveness training: Assertiveness Skills: Before (T1): Mean = 45.78 ± 11.12 After (T2): Mean = 53.75 ± 8.05 Showed statistically significant improvement (t = 4.204, p = .001) Psychological Well-being: Before (T1): Mean = 111.3 ± 14.58 After (T2): Mean = 122.8 ± 16.46 Showed statistically significant improvement (t = 4.493, p = .001) Work Engagement: Before (T1): Mean = 50.08 ± 6.03 After (T2): Mean = 60.75 ± 10.72 Showed statistically significant improvement (t = 5.464, p = .001) The study also found a significant positive correlation between:	Results indicated significant improvements in assertiveness, well-being, and engagement among participants. The study deemed the training feasible and potentially beneficial, recommending further research with larger samples and extended follow-up.	Individual level	

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						Total assertiveness skills and psychological well-being scores post-intervention (r = 0.431, p = .009)			
16	Mary B. Adam, Naomi Wambui Makobu, Wilson Karuri Kamiru, Simon Mbugua, and Faith Mailu(Adam et al., 2021)	Personal coping mechanisms, determining staff needs,		Tertiary	Primary	primarily a qualitative study	Debrief sessions allowed staff members to identify their own coping strategies, learn other coping strategies from colleagues, and share needs and concerns with management without fear. The rapid-cycle feedback loop facilitated management decision-making and priority-setting by allowing them to address employee issues that impacted employee well-being in real time	Individual Organisational Level	Job Demand - Resources

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17	Wafa Abdelghaffar, Nadia Haloui, Noamen Bouchrika, Souha Yaakoubi, Amani Sarhane, Emna Kalai, Nihel Siala, Hajer Boulehmi, Souad Trabelsi, Soumaya Bourgou, Fatma Charfi, Ahlem Belhadj, Rym Rafrafi(Abdelghaffar et al., 2021)	Psychosocial Support Unit.		Secondary	Primary/Secondary	It focus on describing implementing a psychological support unit	Despite initial stigma, the initiative received positive feedback for the support it provided through a free helpline, workshops, and immediate care. It found that implementing a Psychological Support Unit (PSU) in hospitals during the pandemic could addresses mental health needs of staff and family	Individual/ Organizational level	

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Thematic Analysis of Included Studies.

This review identified six key themes highlighting workplace mental health interventions implemented for healthcare professionals in African. These themes reflect the diverse approaches taken to address the mental health needs of healthcare providers across various African contexts.

Training Programs

Training programs emerged as the most frequently implemented intervention type (n=8 studies), spanning multiple countries including Egypt, Kenya, Nigeria, Rwanda, Sierra Leone, South Africa, Tunisia, and Zimbabwe. These programs focused on building critical skills such as stress management (Kleinau et al., 2024; Maingi et al., 2022; Zingela et al., 2022), assertiveness (Abdelaziz et al., 2020) , psychological first aid (Maingi et al., 2022), and self-care(Şahin et al., 2021; Vesel et al., 2015) .

The majority of studies reported consistent short-term improvements in coping abilities, resilience, wellbeing, and lower perceived stress following these training programs (Akinsulore et al., 2022; Kelly et al., 2021; Şahin et al., 2021; Vesel et al., 2015; Waterman et al., 2018). For instance, Zingela et al. (Zingela et al., 2022) found that their psychological preparedness training in South Africa enhanced healthcare workers' ability to manage outbreak-related stress and improved coping skills. Similarly, Vesel et al. (Vesel et al., 2015) reported improvements in communication, self-care, and social connectedness among healthcare workers in Sierra Leone following their intervention.

However, two studies raised important concerns regarding the long-term sustainability of impacts from single-session trainings without follow-up support or reinforcement (Abdelaziz et al., 2020; Kckaou et al., 2023). This highlights a critical gap in the current approach to training programs and suggests a need for more longitudinal studies to assess the durability of intervention effects.

Counselling Services

Counselling services were implemented in four countries - Egypt, Kenya, Sierra Leone, and Tunisia (n=3 studies). These services encompassed individual and group counselling sessions (Iyamuremye & Brysiewicz, 2015; Kleinau et al., 2024; Vesel et

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al., 2015)Click or tap here to enter text. and psychological helplines (Abdelghaffar et al., 2021).

Studies consistently demonstrated that counselling interventions were significantly associated with reduced stress levels among healthcare workers (Abdelaziz et al., 2020; Abdelghaffar et al., 2021; Vesel et al., 2015) . For example, Waterman et al. (Waterman et al., 2018) found that their phased, CBT-based group program in Sierra Leone effectively reduced mental health symptoms among Ebola Treatment Center staff.

However, Abdelghaffar et al. (Abdelghaffar et al., 2021) noted significant barriers limiting access to these services, particularly the stigma surrounding seeking mental health support. This finding underscores the need for interventions that not only provide counselling services but also address the cultural and social barriers to accessing these services.

Peer Support Programs

One study based in Sierra Leone evaluated peer support programs involving peer counselling and support groups (Vesel et al., 2015) . Vesel et al. (Vesel et al., 2015) reported positive impacts on coping skills and interpersonal relationships amongst the participating healthcare workers. While these results are promising, the limited number of studies in this category highlights a need for more research into the effectiveness of peer support interventions in African healthcare settings.

Relaxation Techniques

Studies in Rwanda, Sierra Leone, and Tunisia (n=3) implemented various relaxation techniques including music therapy (Kacem et al., 2020) , laughter therapy (Hatzipapas et al., 2017), and physical exercise (Maingi et al., 2022). These interventions reported positive outcomes, with Kacem et al. (28) finding lower stress and burnout risk from music therapy among operating room staff in Tunisia, and Hatzipapas et al. (Hatzipapas et al., 2017) reporting improved psychological well-being from laughter therapy among community care workers in South Africa.

Interestingly, a Tunisian study by Kckaou et al. (Kckaou et al., 2023) explored associations between mindfulness and wellbeing, finding that higher mindfulness was linked to lower perceived stress and greater life satisfaction amongst healthcare

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workers. This aligns with broader literature on mindfulness being associated with stress and anxiety reduction, suggesting potential benefits of incorporating mindfulness-based interventions in African healthcare settings.

Informational Resources

Three studies based in Southern African countries - Botswana, Malawi, and South Africa - focused on informational resources (n=3) encompassing online learning courses (Kelly et al., 2021) and printed guidelines/materials (Akinsulore et al., 2022; Zingela et al., 2022). These interventions were associated with increased knowledge, higher confidence, improved resilience (Kelly et al., 2021), and more effective coping skills among healthcare staff (Akinsulore et al., 2022; Zingela et al., 2022) .

For instance, Kelly et al. (Kelly et al., 2021) found that their self-paced, online learning course in South Africa led to significant improvements across all measured domains of healthcare worker well-being and resilience during the COVID-19 pandemic. This suggests that digital interventions could be a promising approach, particularly in contexts where in-person interventions may be challenging to implement

Analysis using Social Ecological Model

Policy level

Only studies from Botswana indicated policy-level interventions (Ledikwe et al., 2014). Ledikwe et al. (2014) evaluated the national policy of implementing Botswana's National Workplace Wellness Program (WWP) for healthcare workers across 27 districts. The program targets both physical and mental health, revealing that physical health screenings and promotional activities are more widely adopted than occupational health and psychosocial services. Successful implementation relied on dedicated administrative support and integrating policy activities into the organizational culture, while barriers to implementation included competing work priorities, limited technical capacity for mental health services, stigma, and confidentiality concerns.

Organizational level

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Studies from Rwanda, Zimbabwe, Kenya and Tunisia indicate organisation-level interventions(Abdelghaffar et al., 2021; Adam et al., 2021; Iyamuremye & Brysiewicz, 2015; Moyo et al., 2023) .Iyamuremye and Brysiewicz (2015)Click or tap here to enter text. in a study conducted in Rwanda demonstrated a model for managing Secondary Traumatic Stress (STS) among mental health workers through improved staffing, resources, and tools, along with organizational assessments of STS and structured protocols. The Study in Zimbabwe also demonstrated a psychosocially supportive work environment by addressing resource deficiencies and high healthcare costs, allocating adequate financial and human resources, and establishing organizational counselling and communication system(Moyo et al., 2023) . Abdelghaffar et al. (2021) highlighted establishment of a Psychological Support Unit (PSU) and a committee to ensure implementation while (Adam et al., 2021) demonstrated a staff well-being initiative involving debriefing sessions to share coping strategies and provide management feedback for organizational adjustments.

Interpersonal and Individual level

Studies from Sierra Leone, Kenya and Nigeria demonstrated interpersonal level intervention (Maingi et al., 2022; Şahin et al., 2021; Vesel et al., 2015). Specifically, Vesel et al. (2015) focused on communication skills and social connectedness between colleagues and their clients to reduce stress. While Maingi et al. (2022) focused on maintaining connections with family and trusted friends to reduce fear, isolation, and anxiety during health emergencies. Şahin et al. (2021) explored the impact of interpersonal levels from both colleagues and family in the form of family supportive supervisor behaviours (FSSB) from workplace and family conflict, psychological well-being, and thriving, especially during the COVID-19 pandemic. It is worth noting that 16 studies included in the review had at less one form of individual-level intervention except the study byŞahin et al., (2021) focused only interpersonal level intervention.

Analysis using the Job Demands-Resources (JD-R) model's

The Job demands demonstrated by Iyamuremye and Brysiewicz (2015) included client trauma exposure of the 1994 genocide in Rwandaa and high workloads, while Moyo et al. (2023) and Adam et al. (2021) in Zimbabwe and Kenya respectively also reported high workloads, staff shortages, and emotional strains. Moyo et al. (2023) highlighted insufficient protective equipments and the patient death burden due to

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Covid-19 while Adam et al. (2021) indicated financial strain and COVID-19-related fear. The job resourced indicated by Iyamuremye and Brysiewicz (2015) includes staff education and therapeutic interventions on secondary traumatic stress (STS).Moyo et al. (2023) showed psychosocial support model for employee and Adam et al. (2021) indicated resources that includes real-time feedback, work schedule adjustments, and training. These studies demonstrate the importance of balancing demands and resources to enhance employees' mental well-being and underscore the effectiveness of the JD-R model in addressing occupational challenges through context-specific resource allocatio

Discussion

This scoping review provides a comprehensive overview of workplace mental health promotion interventions for healthcare professionals in Africa. The findings reveal a diverse range of approaches being implemented across the continent, albeit with significant variations in distribution, scale, and focus. This discussion will critically examine the key themes that emerged from our analysis, contextualize them within the broader literature and theoretical frameworks, and explore their implications for practice, policy, and future research.

Diversity and Distribution of Interventions

Our review identified interventions from 10 African countries namely, South Africa, Botswana, Egypt, Malawi, Seirra Leon, Tunisia, Nigeria, Kenya, Rwanda and Zimbabwe. Similar review on mental health workplace intervention in Africa conducted byHoosain et al.,(2023) identified interventions only from 3 African countries (South Africa, Kenya and Botswana) . The review by Hoosain et al., (2023) was not limited to health workers. Notably, this review shows increase in countries within the continent conducting interventions on mental health intervention at workplace. This increase in the number of countries might be as a result of the impact of COVID-19 pandemic on health workers. This is because most of the interventions in our review aimed to mitigate the mental health impact of the pandemic on health workers. Nonetheless, limited and uneven distribution of mental health intervention for workers in Africa likely reflects disparities in research capacity, funding, and prioritization of

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mental health issues across different African nations. The diversity of interventions ranged from individual-level approaches such as training programs, counselling services, relaxation technique such as mindfulness, to interpersonal intervention such family supportive intervention, communication and social connectiveness skill to organizational-level initiatives like workplace wellness programs and creating supportive work environment through provision of work resources to improve employee wellbeing. These interventions are like individual interventions obtained from countries in the global north to improve the mental of health worker(Shiri et al., 2023).

Predominance of Individual-Level Interventions

The majority of interventions identified in this review focused on individual-level approaches, particularly training programs and counseling services. This aligns with the individual level of the Social Ecological Model (SEM)(Urie Bronfenbrenner, 1979). While these interventions showed promising short-term outcomes, their long-term effectiveness and sustainability remain weak, as highlighted by studies like Shiri et al., (2023) . Kckaou et al., (2023) and Abdelaziz et al. (Abdelaziz et al., 2020).

The emphasis on individual-level interventions may reflect the influence of Western psychological approaches and the relative ease of implementing such programs., The focus on individual level intervention overlooks the critical role of interpersonal, organizational and systemic factors in shaping mental health outcomes. The Studies in Sierra Leone, Kenya, and Nigeria highlighted the significance social connectedness, family-supportive supervisor behaviours, and maintaining connections with family and friends for mitigating stress, fear, isolation, anxiety, and workplace-family conflict during health emergencies, hence showing evidence of intervention at the interpersonal level of SEM(Maingi et al., 2022; Şahin et al., 2021; Vesel et al., 2015). . Evidence from Curtin et al., (2022) from a systematic review of 121 qualitative studies across 34 countries during several public health emergencies also underscored the importance of interpersonal interventions, with peer support, team cohesion, and family connections fostering resilience by providing emotional and practical support.

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Limited Organizational and Policy-Level Interventions

The Job Demands-Resources (JD-R) model addresses both job demands and resources at an organizational level (Demerouti et al., 2001) which could potentially yield more sustainable improvements in mental health intervention for health workers at their work place. However,the scarcity of organizational and policy-level interventions identified in our review is a significant finding that contrasts sharply with the wealth of literature emphasizing the critical role of systemic factors in shaping workplace mental health outcomes (LaMontagne et al., 2014; Memish et al., 2017). Out of the 17 studies reviewed, only 4 (Ledikwe et al., 2017; Moyo et al., 2023 Abdelghaffar *et al.* 2021 Adam *et al.* 2021) (Abdelghaffar et al., 2021; Adams et al., 2017; Ledikwe et al., 2017; Moyo et al., 2023) explicitly addressed interventions at these macro levels. This gap can be contextualized within broader theoretical frameworks such as the Social Ecological Model (SEM) (Urie Bronfenbrenner, 1979) and the Job Demands-Resources (JD-R) model (Demerouti et al., 2001), which underscore the importance of organisational resource to balance the job demands of health workers. Regardless of limited evidence from our review indicating interventions at the organisational level, it reveals that organisational-level interventions, such as a supportive work environment with adequate work equipment, financial and human resources, and incorporating psychosocial intervention into the organisational iterative process, are beneficial. Similarly, a comparable review b yShiri et al., (2023) focusing on countries in the global north also advocates for this degree of intervention. Shiri et al., (2023) revealed similar barriers to the ones identified from this review in engaging in organisational workplace intervention, Such barriers includes insufficient personnel, excessive workloads, time constraints, and the scheduling of intervention outside of working hours. . The limited focus on these interventions in African healthcare settings contrasts research from high-income countries, where organizational-level interventions have shown effectiveness in reducing occupational stress among healthcare workers (Ruotsalainen et al., 2015) .This dearth of organizational and policy-level interventions may be attributed to various factors, including resource constraints, complex bureaucratic structures, and the perceived immediacy of individual-level interventions. However, the few studies that did address organizational levels show promising results, aligning with emerging research on creating "psychologically healthy workplaces (Grawitch et al., 2006).

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Cultural Adaptation and Contextual Relevance

The review revealed a concerning lack of explicit discussion around cultural adaptation of interventions. Given the diverse cultural contexts across Africa, the effectiveness of interventions likely depends heavily on their cultural appropriateness and relevance. The Cultural Adaptation Framework (Bernal et al., 2009) emphasizes the importance of adapting interventions to local contexts, considering elements such as language, metaphors, and cultural concepts of mental health (Bernal et al., 2009).

Future interventions and research should prioritize cultural adaptation, ensuring that mental health promotion strategies resonate with local understandings of wellbeing and align with healthcare workers' lived experiences in different African contexts.

Emerging Innovative Approaches

Despite the predominance of traditional approaches, our review identified some innovative interventions that show promise. For instance, the use of digital technologies, such as the chatbot intervention in Malawi (Kleinau et al., 2024), and the incorporation of indigenous healing practices like laughter therapy in South Africa (Hatzipapas et al., 2017)(Hatzipapas et al., 2017) , demonstrate creative ways of addressing mental health needs in resource-constrained settings. Specifically, Kleinau et al. indicates the use of chatbot by healthy workforce for primary and secondary prevention and serves as a source for mental health information . These approaches align with global trends in digital mental health interventions (Torous et al., 2019)(Torous et al., 2019) and the growing recognition of traditional healing practices in mental health care (Uwakwe & Otakpor, 2014)(Uwakwe & Otakpor, 2014). However, more research is needed to establish the long-term effectiveness and scalability of these innovative approaches across different African healthcare contexts. Future studies should consider how these interventions can be integrated into existing healthcare systems and adapted to various cultural contexts.

Addressing Stigma and Barriers to Access

Several studies in our review, notably Abdelghaffar et al., highlighted stigma as a significant barrier to accessing mental health support. This finding aligns with broader literature on mental health stigma in African contexts (Egbe et al., 2014; Kapungwe et al., 2010)(Egbe et al., 2014; Kapungwe et al., 2010)and underscores the need for interventions

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that not only provide services but also work to destigmatize mental health issues within healthcare settings. Future interventions should consider incorporating anti-stigma components and exploring ways to normalize help-seeking behaviors among healthcare professionals. This could involve awareness campaigns, open dialogues about mental health in the workplace, and leadership modelling of supportive behaviours.

Implications for Practice, Policy, and Future Research

The findings of this scoping review have significant implications for practice, policy, and future research in the realm of workplace mental health promotion for healthcare professionals in Africa. In practice, healthcare organizations should prioritize the implementation of multi-level interventions that address both individua, interpersonal and organizational factors, with a strong emphasis on cultural adaptation to ensure relevance and effectiveness. Policymakers need to develop and enforce regulations that support the creation and implementation of workplace mental health interventions in African healthcare settings, including allocating resources for mental health promotion and fostering supportive organizational cultures. Future research should focus on conducting longitudinal studies to assess the long-term impacts of interventions, investigating the effectiveness of organizational and policy-level approaches, exploring the process and impact of cultural adaptation, examining the cost-effectiveness and scalability of different intervention types, and investigating integrated approaches that combine multiple intervention strategies. Additionally, there is a pressing need for studies that address the unique contextual factors of African healthcare settings, including resource constraints, cultural diversity, and the impact of broader societal challenges on healthcare workers' mental health. By addressing these areas, researchers can contribute to the development of more effective, sustainable, and culturally appropriate mental health promotion strategies for healthcare workers across Africa.

Conclusion

This scoping review has provided a comprehensive overview of workplace mental health promotion interventions for healthcare professionals in Africa, revealing both promising approaches and significant gaps in current research and practice. While individual-level interventions, such as training programs and counselling services,

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have shown potential for short-term improvements, there is a critical need for more comprehensive, culturally adapted, and sustainable approaches that address multiple levels of influence, as suggested by the Social Ecological Model and Job Demands-Resources model. The review has highlighted the scarcity of interpersonal, organizational and policy-level interventions, the limited attention to cultural adaptation, and the emerging potential of innovative approaches such as digital interventions. Moving forward, a multi-faceted approach that integrates primary, secondary, and tertiary prevention strategies, tailored to the unique cultural and resource contexts of African healthcare settings, is essential. There is also need for more rigorous experimental, longitudinal and implementation research studies to generate high-quality evidence about intervention effectiveness and long-term impact By addressing the identified barriers, leveraging enablers, and pursuing the proposed research directions, we can work towards developing more effective, sustainable, and contextually appropriate mental health promotion interventions for healthcare workers across Africa. This not only has the potential to improve the wellbeing of individual healthcare professionals but also to enhance the overall quality and resilience of healthcare systems across the continent, ultimately leading to better health outcomes for both healthcare workers and the populations they serve.

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Declarations

Authors contribution

H BI developed the protocol, Screened the articles and developed the first draft of the paper, I O Screened the articles, developed the tables, A O Screened the articles, A Y Screened the articles, J Y. K conducted database search, J F Screened the articles and developed figures, O T M Screened article, E E Screened the articles and gave guidance on thematic analysis and theoretical framework. All the authors reviewed the final draft.

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List of Figure Captions

Figure 1: PRISMA Diagram

Figure 2: Map of Africa showing countries with intervention

Appendix 1: Search Strategy

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