Data extraction tables

1. Empirical studies

Ref.	Title	Author(s) (year)/ Country	Aim/objectives	Type of healthcare professionals	Settings/context	Research method	Finding (key factors)
(35)	A clinical Skills unit: addressing the need for continued professional development (CDP) in Allied Health Professions.	Van Vuuren et al. (2013) **Country**: South Africa	**Aim**: To investigate the continuous professional development needs of the allied health professionals.	Allied Health Professionals (occupational therapists, physiotherapists, and dieticians)	Various locations	Descriptive Study/ Quantitative	The study emphasizes that training units should develop a web-based environment to offer information and services related to training and development activities, identify, prioritize, and deliver the learning needs of the different professional groups and experiences, an opportunity for self and expert assessment, allow learning application to the practice, and invite expert presenters, presentations and demonstrations should focus on skills, ensure that a variety of topics are covered, activities should be delivered to address various learning styles and approaches such as learning by doing, discussion of case studies, small workshops, seminars, or presentation, availability of a fully - equipped training unit (equipment, resources, information technology, facilities, and an outdoor

						area), collaboration, sharing, and peer and expert evaluation of the activities, and enable the sharing of opinions and asking for advice and guidance.
(36)	Continuous professional development along the continuum of lifelong learning.	Ryan (2003) **Country**: UK	**Aim:** To identify what factors influenced motivation to participate in continuous professional development (CPD).	Nurses, Occupational therapists, and Physiotherapists	Hospital	Quantitative Study	The study finds that training and development are sought depending on the individual's goals and aspirations and invariably twinned with the strategic visions of health organizations and managers' immediate needs. However, elements such as organizational support (funds and study leave) and internal and external motivators are important to be taken into consideration.
(41)	A training needs analysis of neonatal and pediatrics healthcare staff in a tertiary children's hospital.	Gallagher et al. (2012) **Country**: UK	**Aim:** To explore the educational needs of staff working with families with palliative or end-of-life care requirements.	Nurses and other health professionals	Hospital	Quantitative Study	The article highlights the importance of conducting a training needs analysis for appropriate and tailored educational interventions and curricula. By identifying and addressing skill gaps and education requirements, integrating clinical practice, fostering interdisciplinary collaboration (A multidisciplinary approach to teaching and learning), providing sufficient education, encouraging discussion and experience

						sharing, and embracing technology, healthcare institutions can positively contribute to the quality of care provided. Additionally, leadership support, training and development design and development effectively and collaboratively, evaluation of such interventions to determine their impact on health professionals' knowledge and confidence, allowing improvements to be made where necessary, and a commitment to evidence-based practice are vital elements in enhancing the effectiveness of training and development in healthcare.
(43)	Continuing Professional Development: Issues Raised by Nurses and Allied Health Professionals Working in Musculoskeletal Settings	Haywood et al. (2013) **Country**: UK	**Aim**: To explore the CPD needs and issues for clinicians working in musculoskeletal services.	Nurses and Allied healthcare professionals	Various locations	Qualitative study	The study provides specific elements of good practice to facilitate professional development. Such as policy for continuous development, funding, time (consider the time as working hours), and provision of study leave for training and development, assessing needs considering changes in the staff level of experience, meeting the service's training needs, utilizing multiple sources for need analysis such as performance appraisal, using

						a variety of in-house and external training, and applying learning to practice. Additionally, institutions should find alternative and innovative ways to deliver training and development, particularly in case of budget constraints, record training and development activities, cascade knowledge down through the department after training, link the training and development with career progression, cover nonclinical skills such as communication, and provide multidisciplinary training.
(48)	Components of impactful dementia training for general hospital staff: a collective case study	Surr et al. (2020) **Country**: UK	**Aim:** To understand models of dementia training most likely to lead to improved practice and better care experiences for people with dementia, and to understand barriers and facilitators to implementation.	Nurses and other health professionals and staff	Hospitals	Case Study/Mixed method	The summary of the key findings and themes is as follows:1) Training design (needs analysis, developed through ongoing evaluation and staff feedback, training materials available for staff); 2) Training delivery and staff reactions (utilizing interactive methods such as simulation, discussion, and experiential learning methods, content tailored to particular staff roles/needs, delivered by experienced and enthusiastic trainers/facilitators, motivate staff, approaches to incorporate staff experiences);

							3) Learning and Behaviour (develop competencies, focus on skills delivery, provide a proper learning experience, provide evidence for skill gain including manager feedback, ongoing post-training support); 4) Experiences of care (measure and assess training and development outcomes) 5) Facilitators of training implementation (Knowledgeable, experienced and supportive facilitators, training facilities and physical environment, Leadership and management support, Trainer flexibility, accessibility, resources (time and staff)).
(49)	Using the General Level Framework to guide the training and development needs of pharmacists in pediatrics.	Stacey et al. (2015) **Country**: Australia	**Aim**: To identify the strengths, training, and development needs of pediatric pharmacists using the GLF.	Pharmacists	Hospitals		Qualitative study	Training and development opportunities should be provided suitable for healthcare professionals based on their facility area, region, and expertise. Training and development opportunities should be based on identified needs and priorities for training. Also, the use of frameworks to guide the competencies required for various healthcare professionals.
(50)	A health care professionals training needs	Byamugisha et al. (2020)	**Aim**: To determine the training needs of health care providers	Nurses, Medical and Allied Health Professionals	Hospitals		Cross-Sectional Study/	The research article highlights the importance of conducting a comprehensive training

	assessment for oncology in Uganda.	**Country**: Uganda	for comprehensive oncology services in selected hospitals in Uganda to inform capacity development intervention to improve cancer outcomes.			Qualitative	needs assessment to tailor training and development programs for healthcare professionals in various clinical areas, support training, and development through elements such as customized and tailored training for the individual healthcare provider, interdisciplinary collaboration, healthcare professionals involvement, access to resources, mentorship, focusing on clinical tasks and competencies, feedback mechanisms, enrich content, and professional networking contribute positively to the quality of CPD, ultimately leading to improved patient care and outcomes in the field of oncology.
(51)	Making Continuing Professional Development Relevant and Accessible in Regional Social Work.	Hudson et al. (2020) **Country**: Australia	**Aim**: To explore professional development education needs and challenges for rural social work practitioners.	Social Works	Various health organisations	Mixed-Method	The findings emphasize that continuing professional development (CPD) must be relevant and readily accessible to meet the needs of health professionals with more opportunities to address complex health issues, organizational support (time, funding travel and accommodation reimbursement, workload),

							considering the preferences for the mode of delivery such as face to face to allow for interaction and networking, online and interactive training for flexibility, providing specific and targeted training instead of broad and generic one to improve practices, offering relevant and interested topic, and provide Innovative solutions through a partnership between service providers, higher education providers, and the professional body.
(53)	Factors influencing training transfer in nursing profession: a qualitative study	Ma et al. (2018) **Country**: China	**Aim**: To identify factors influencing training transfer in the nursing profession	Nurses	Hospitals	Qualitative study	The factors are the trainee characteristics, including attitude toward training and ability as a basis for selection as well the training design, including training content that matches their individual and work requirements and instruction methods; the work environment, including organizational policy, opportunities to use and transfer; adequate materials, financial and human resources, the coordination between departments, organizational culture, the support from the organization, supervisors, and co-workers, and the promotion of

						professional development and achievement.
(54)	A Study of the Educational Needs of Clinical Nurses Based on the Experiences in Training Programs for Nursing COVID-19 Patients	Han et al. (2022) **Country**: Republic of Korea	**Aim**: To explore the experience of clinical nurses regarding training programs for critically ill patients with coronavirus disease 2019 (COVID-19) and their educational needs.	Nurses	Hospitals	Qualitative study	The study emphasizes the necessity to develop nursing education programs with content corresponding to nurses' needs, adequate hands-on practice and simulation training, proper trainee and trainer selection, motivating nurses through educators and senior expertise and passion, and Inclusion of specific institutional practice, the prepare and utilize training and development content and delivery methods that are tailored to the work environment, high-lighted the importance of systematic education programs (planning, organization, and implementation) regularly and adequately, customized education to suit participants' clinical settings with practical applicability.
(55)	Factors contributing to clinician training and development in the clinical area of laryngectomy & tracheoesophageal voice	Hancock et al. (2020) **Country**: Australia	**Aim**: To explore clinicians' perceptions of factors contributing to training and clinical skills development in TES rehabilitation post-laryngectomy.	Speech and Language Therapist	Various clinical settings, mainly hospitals	Qualitative Study	The research article identifies several key elements that contribute positively to the quality of training and development. These elements encompass learning with and from others (mentoring and guidance), interdisciplinary collaboration to foster a

						holistic approach through collaboration, access to current research and resources, formal programs (training opportunities that are well established and structured, based on competencies and important skills such as networking and teamworking), hands-on learning particularly in clinical training, processes that influence training (training structure, order and dedicated time for training), and individual influences (personal interest (passion, a drive, and motivation), learning style, independency,), Continual Learning Opportunities, assessment and Feedback, address the variation in specialties and practice (unique nature, availability of mentors and trainers, variation in aspects of training such as time and structure).
(56)	The Continuing Professional Development for Nurses and Allied Health Professionals Working Within Musculoskeletal	Haywood et al. (2013) **Country**: UK (England, Scotland, Wales, and	**Aim**: To explore the current UK status of continuing professional development (CPD) for nurses and allied health professionals (AHPs).	Nurses and Allied Health Professionals	Various health settings (8)	Mixed-Method	This article highlights the importance of structured, clinically relevant, accessible, and flexible training and development opportunities for nurses and allied health professionals in musculoskeletal services.

	Services: A National UK Survey	Northern Ireland)					Interprofessional collaboration, needs analysis, feedback, organization support (funding, lower productivity targets during training, and management support), alignment with professional goals, recognition (activities that are accredited and recognized by professional bodies), practice integration, a joint responsibility between the individual and the organization with mutual benefits, and regular updates are essential elements that positively contribute to the quality of training and development in this field. These findings can inform the development and improvement of training and development.
(66)	Empowerment of learning and knowledge: Appreciating professional development for registered nurses in aged residential care	Page et al. (2020) **Country**: New Zealand	**Aim**: To develop an understanding of professional development needs specific to the Aged Residential care (ARC) sector, to support workforce development in the industry, and to support RNs to provide quality care.	Nurses	Aged Residential care	Mixed-Method	The research article emphasizes the significance of professional development for registered nurses in aged residential care. Quality CPD programs should consider elements such as engagement, a supportive working environment (finances, time, facility responsibility for staff development and management support),

						receptive to the culture of the organization (standards, accreditation, regulatory compliance, priorities, goals), flexibility and interaction, feedback, technology integration, recognition, networking, and sharing, collaboration, resource allocation, opportunities for training and development, address the diversity and complexity in roles and responsibilities, determine the healthcare professionals development needs, structured training and development system, foster networking and discussion, a partnership between the sector and academia to integrate learning into the practice area, and long-term commitment to positively impact the quality of professional development.
(67)	Factors Influencing Continuing Professional Development for Nurses in Western Kenya	Mosol et al. (2018) Country: Kenya	Aim: To investigate factors influencing nurses' participation in CPD in Western Kenya.	Nurses	Hospitals	Cross-Sectional Study/Mixed Method	The study indicated that the individual/professional/ organizational needs and motivators should be addressed and promoted, CPD should be jointly planned and implemented by nurses, employers, and providers of CPD, and training and development should be used and taken into consideration

							for performance appraisal, promotion, and license renewal.
(68)	The voice of paediatric oncology nurses: A longitudinal diary study of professional development	Hopia et al. (2019) **Country**: Finland	**Aim:** To identify the factors that are associated with professional development from the perspective of paediatric oncology nurses.	Nurses	Hospitals.	Qualitative Study	This study highlights several key elements that positively influence the quality of professional development in healthcare. These elements encompass continuous training and development with up-to-date practices and knowledge, sufficient resources for training and development, reflective practice and comparing the practices with other institutions, mentorship, visiting other institutions and learning new experiences, staff willingness and motivation, training built based on robust nursing knowledge and skills with emphasis on its application to work, an opportunity to regularly participate in continuing education, access to learning resources, systematic support at work and work atmosphere that supports development, and feedback mechanisms. By recognizing and embracing these elements, nurses in this specialized field can continue

						to grow and provide the highest standard of care.
(69)	Professional development beyond foundation training: a study of pharmacists working in Scotland.	Rueben et al., (2020) **Country**: Scotland	**Aim**: To measure the self-reported competence of pharmacists against a relevant framework and determine what support was required to further professional development.	Pharmacists	Acute hospital sites	Cross-sectional study /Qualitative.	Participants reported multiple factors to support training and development, such as a strategic plan for professional development (Vision), more communicated opportunities, managerial support, mainly direct line management support, appraisal discussion, and personal development plan, mentorship with a more experienced peer, Link training and development with additional qualifications (sense of accomplishment).
(70)	Enablers and barriers of continuous professional development (CPD) participation among nurses and midwives	Haji Mustapa et al. (2021) **Country**: Brunei	**Aim**: To investigate the enablers and barriers to Continuing Professional Development participation among nurses and midwives.	Nurses and Midwives	Public hospitals and Health Centers	A cross-sectional study/ Qualitative	The study revealed that the most common positive factors for training and development were the availability of opportunities with attractive topics, support from nurse/midwife managers, CPD registration, access to resources (availability of time, financial support, and access to relevant CPD opportunities), adequate facilities, supportive environment and culture for training and development, motivation to attend training and development.

(71)	Factors affecting the views and attitudes of Scottish pharmacists to continuing professional development	Power et al. (2011) **Country**: Scotland	**Aim**: To identify the key factors affecting Scottish pharmacists' views and attitudes to CPD.	Pharmacists	Hospital, Primary care, community settings, and other	Qualitative design	The factors identified were Positive support in the workplace (time, work environment, and plans), access to resources, meeting learning needs (engagement, learning needs assessment), confidence in the CPD process (assess need, opportunities, assessment, and provide benefits and values), and motivation for training and development.
(72)	Contextual factors influencing a training intervention aimed at improved maternal and new-born healthcare in a health zone of the Democratic Republic of Congo	Bogren et al. (2021) **Country**: Republic of Congo	**Aim**: To explore contextual factors influencing a training intervention aimed at improved maternal and new-born healthcare	Nurses and Midwives	Hospitals and healthcare centers	Qualitative design	The research reveals that several contextual factors significantly influence the success of the training and development interventions, such as Incentives motivating participants' efforts to begin a training and development program (monetary and non-monetary incentives), management and leadership engagement and support, continuous training and development opportunities, resources availability (having physical space, electricity, and equipment), and sharing knowledge between the different healthcare facilities (exchange program both within an individual healthcare facility as well as between the other facilities).

(73)	Continuing professional development in nursing in Australia: Current awareness, practice, and future directions	Katsikitis et al. (2013) **Country**: Australia	**Aim:** To ascertain the current understanding, practice and future continuing professional development (CPD) needs of nurses and midwives employed in a regional area of Queensland, Australia.	Nurses and Midwives	Hospitals	Quantitative Study	The results showed that training and development should be shared responsibility between healthcare professionals and their employers. Organizational support (fund, staffing, work schedules, and time), linking training directly with the practice needs, delivering current and up-to-date knowledge and skills, providing useful and relevant topics to the healthcare professionals' practice and careers, utilizing various delivery methods, documenting and registering activities, and support for transfer positively influenced professional development. The study highlights the importance of organizational culture, especially supportive management, ongoing education and professional growth, and access to higher degrees, training, skills, and study time in encouraging the workforce to embrace ongoing learning and change.
(74)	Norwegian Nurse Anesthetist Perceptions of Professional Development and the	Averlid (2017) **Country**: Norway	**Aim**: To examine Norwegian nurse anesthetists' perceptions of professional	Nurses	Hospitals	Qualitative study	Analysis of the interviews yielded various factors such as a climate for professional development and research (including components such

	Influence of Production Pressure		development and research in the workplace.				as motivation, facilitation, and resources (e.g., time, guidance (Mentors), education, and regular opportunities for T & D), professional development and Management (through time and economic resources implementation, fair accessibility, management support and engagement as a catalyst and driving force for professional development (arrange shifts, give free courses, and maintain planned study time), and professional development and production (time for professional development and time for production, balance workload).

2. Reviews

Ref.	Title	Author(s) (year)	Review question(s) or/aim(s)	Study population	Number of included sources	Methodology	Finding (key factors)
(37)	Effectiveness of continuing education programmes in nursing: literature review.	Griscti & Jacono (2006)	**Aim**: To review the literature on what facilitates or inhibits continuing education in nursing and to identify ways to make continuing education more effective.	Nurses	A total of 40 studies fulfilled the inclusion criteria	Systematic Review	The article underlines the importance of several elements that positively contribute to the quality of Professional Development in nursing. These elements include structured and planned opportunities and processes, interactive and participatory learning experiences, diversification in modalities, need assessment (individual, professional, and organizational), collaborative policies, tailored content, a supportive learning environment, clear objectives and assessment, target knowledge, skills, and values, motivation for participation, encouraging participatory role in learning (encouraging staff to take initiative), continual evaluation (outcomes, impact, and competence) and feedback, integration with clinical practice, ensure transfer and application, regulatory compliance, measure effectiveness and frequency, and make education attainable and realistic.

(44)	Nurses' continuing professional development: A systematic literature review	Vázquez-Calatayud et al. (2021)	**Aim**: To critically review the published evidence of nurses' experiences regarding their CPD in the clinical context to improve the understanding of its role in their clinical practice and assist in identifying their needs.	Nurses	A total of 9 studies fulfilled the inclusioncriteria	Systematic Review	The article emphasizes several critical elements that contribute positively to the quality of nurse's development. These elements encompass structured educational programs, interactive learning environments, alignment with professional goals and actual needs, mentoring, relevance of training to nurses, providing competencies, satisfying the roles and personal development, evidence-based practice, reflective learning, recognition, encouraging and motivating participation (provide intrinsic and extrinsic motivations), organizational support (manager support, access, Opportunities, fund, balance life and work, manage workload, and provide time), and regulatory compliance. By considering and integrating these factors into training and development initiatives, nursing professionals and institutions can enhance the quality of nursing practice and improve patient care outcomes.
(45)	Effectiveness of training in evidence-based medicine skills for healthcare professionals: a systematic review.	Hecht et al. (2016)	**Aim:** To evaluates the effects of EbM training for healthcare professionals as well as the quality of reporting of such	Healthcare professionals	A total of 13 studies Included	Systematic Review	Based on the review findings, to ensure the quality of Professional Development, it is essential to adopt interactive and practical learning methods, provide ongoing support, assess participants' preferences,

			training interventions.				interests and experiences, effectively plan and execute the intervention with a suitable design, delivery approaches, and implementation strategy(appropriate methods and strategies, setting, number of sessions, curriculum, corresponding media, piloting, and materials), encourage multidisciplinary collaboration, evaluation (process), reporting quality, resources needed, considering the professional background of the participants, and incorporate assessment and feedback mechanisms. These elements contribute positively to developing healthcare professionals' skills and the overall quality of training and development interventions.
(47)	Training needs of nurses in public hospitals in Australia **	Carlisle et al. (2011)	**Aim**: To provide an overview of the concept of training needs analysis (TNA), current practice, models, and the impact that training needs analysis currently has on nurses in public hospitals in Australia.	Nurses	Not defined	Literature Review	The research article underscores the significance of Professional Development in nursing. To enhance the quality of professional development, it is essential to assess competencies and needs, adopt a proactive approach to training, tailor training, leverage technology, design and implement effective interventions, encourage interprofessional collaboration, use clinical simulation, provide regular feedback, adopt a

							strategy, policies and procedures, evaluation, offer a supportive work environment, consider the staff characteristics, mentorship, align with regulatory requirements, offer flexibility, and promote research-based practices. These elements collectively contribute positively to the ongoing professional development of nurses, ultimately benefiting patient care and the healthcare system.
(57)	Factors influencing nurses' engagement with CPD activities: a systematic review	Walter & Terry (2021)	**Question**: What factors influence hospital-based nurses' engagement with CPD activities in the UK?	Nurses	A total of 5 studies fulfilled the inclusion criteria	Systematic review	The article identifies several critical elements that positively influence the quality of nurses' professional development activities and their engagement. These elements underscore the importance of aligning training and development with nurses' needs, defining clear goals and objectives, providing relevant and applicable experiences, including mechanisms for feedback and assessment, encouraging peer interaction and collaboration, offering incentives and recognition, individualizing content, and mode of delivery, facilitating the identification of activities, enabling congruence between individuals' resources, practice requirements and patient benefits, appraisals, and development plans, fostering a

							supportive organizational culture (organizational commitment to learning and development, funding, time for development, appraisals and development plans, influence engagement and motivation, fostering positive environments for learning, and managerial support), providing accessible and convenient learning opportunities, and monitoring the training and development uptake and parity. Additionally, individual factors are important for the quality of training and development, such as individual resources (time, effort, and engagement) and healthcare professionals' motivation. By addressing these factors, healthcare institutions can enhance the quality and impact of training and development programs for their nursing staff.
(58)	Lifelong learning and nurses' continuing professional development, a meta-synthesis of the literature	Mlambo et al. (2021)	**Aim**: To investigate the qualitative research on nurses' experiences of continuing professional development.	Nurses	A total of 25 articles fulfilled the inclusion criteria	Meta-synthesis of the literature	The article highlights several elements that positively contribute to the quality of professional development in nursing. These elements encompass individual motivation and engagement, resource access, a strategy for training and development, organizational culture (supportive environment, organizational commitment, flexibility and adaptability, work

						schedule adjustment, funding, partnerships, managing workloads, and proper staffing), reflection, communication, and collaboration (between managers, staff, and providers), availability and accessibility of workplace learning, opportunities, design and delivery, measurement, technology, and digitalization, clear objectives, needs assessment to meet staff career and organizational goals, local and contextual activities, mentoring, competency framework, and support networks. Emphasizing these elements can help nurses and healthcare institutions maximize the benefits of training and development and ultimately improve patient care.
(59)	Factors that optimise the impact of continuing professional development in nursing: A rapid evidence review*	King et al. (2021)	**Aim**: To understand the factors that optimise continuing professional development impact for learning, development, and improvement in the workplace.	Nurses	A total of 39 Sources Included	A rapid Evidence Reviews	This article highlights the key elements that positively contribute to the quality and effectiveness of professional development in nursing. These elements and factors include needs assessment (alignment with organizational priorities and staff needs), interactive learning, individualized learning plans, addressing preferences in learning style(simulation, collaboration, and discussion), evidence-based

						practice, motivation, encouraging workplace learning, peer learning and collaboration, mentoring and coaching, technology integration (web-based learning), innovations in education, institution and academic partnership, team-based training, flexibility and accessibility, adequate resources, transfer, feedback and assessment, measure the impact, relevance to the clinical practice, positive workplace culture, recognitions and incentives, and organizational and leadership support (time, mentoring and coaching, staff involvement, manage workload and stress, staffing, administrative support and finances).
(60)	Components of an Effective Professional Development Strategy: The Professional Practice Model, Peer Feedback, Mentorship, Sponsorship, and Succession Planning	Creta & Gross (2020)	**Aim**: To review components of an effective professional development strategy in the oncology setting.	Nurses	Not defined	Literature Review	The article highlights that an effective professional development strategy incorporates elements such as a well-defined professional practice model, peer feedback mechanisms, development of appropriate structures and processes (mentorship, sponsorship opportunities, succession planning, certification, and peer feedback), alignment and agreement with value of training, development of skills and competencies, providing development opportunities and

						time, design effective interventions, healthcare professionals accountability for learning, a supportive environment and culture, organizational commitment, shared governance, investment in training and professional development activities, and leadership support and responsibility. These elements, when integrated and executed effectively, contribute positively to the quality of professional development, and support the ongoing growth and advancement of professionals within an organization.
(61)	Developing the Mental Health Workforce: Review and Application of Training Approaches from Multiple Disciplines Aaron.	Lyon et al. (2011)	**Aim**: To identify useful training and support approaches as well as important conceptual frameworks that may be applied to training in mental health. Theory	Mental Health workers	Not defined	Interdisciplinary literature review	The study highlights the importance of continued consultation/ support following the training interventions, ensuring congruence and alignment between the training content and practitioner experience, the use of effective and customized training methods and models for delivery, an opportunity for active learning, organizational support (time, encourage participation, and provide opportunities), characteristics for staff selection for training (include all), provide value and new skills, consider various approaches and

						techniques (academic detailing, interprofessional education, problem-based learning, coaching, reminders, self-regulated learning, discussion), and focus on motivation and engagement.
(62)	Criteria for describing and evaluating training interventions in healthcare professions – CRe-DEPTH	Van Hecke et al. (2020)	**Aim:** To develop a set of content validated criteria to describe the development and evaluation of training interventions for healthcare professionals.	Healthcare Professionals	A total of 16 relevant Sources	Literature Review	Based on the article results, elements such as clear descriptions, alignment with learning needs and objectives, training development (training aims and objectives, learning outcomes (knowledge, attitudes, skills), theoretical framework, development process), assessment and feedback, evidence-based content, training settings, participants (selection, background, number, attendance), education resources (facilities, fund, and equipment), Structure (duration and frequency), methods and format, didactic strategies/learning approaches, tailored intervention (competences, training needs, and motivation), Provider characteristics (background, expertise, and competence), Outcome assessment, evaluation and flexibility contribute positively to the effectiveness of professional development programs in healthcare.

(63)	Improving Patient Outcomes: Effectively Training Healthcare Staff in Psychological Practice Skills: A Mixed Systematic Literature Review	Garzonis et al. (2015)	**Aim:** To investigate 'what method of training is most effective in teaching psychological practice skills to Mental Health Professionals (MHPs)?'	Mental Health Professionals	24 studies were eligible for the final analysis.	Mixed Systematic Literature Review	The research article highlights the importance of effectively training healthcare staff in practice skills to improve patient outcomes. The elements that positively contribute to the quality of professional development in healthcare include alignment between the training methods and the desired outcomes and skills, addressing patients' needs and safety, design and implementation, interdisciplinary training, evidence-based practices, interactive learning, mentoring, feedback, training transfer into practice, peer support, team training, cultural competence, technology integration (web-based), collaboration, evaluation, supportive organizational culture (training environment, workplace learning, professional culture, and supervisor support) Clarification, Coordination, Communication, and Collaboration. Implementing these elements can lead to better-prepared healthcare professionals who can address the psychological needs of patients more effectively.
(64)	Effective in-service training design and delivery: evidence	Bluestone et al. (2013)	**Aim**: To identify effective training approaches for health worker continuing	Healthcare professionals	A total of 69 studies Included	Literature Review	The article's findings emphasize the importance of a holistic approach to designing and delivering effective training and

	from an integrative literature review.		professional education (CPE) and what evidence exists of outcomes derived from CPE.				development programs. The key elements contributing to the quality of healthcare professionals' training and development, as identified in the article, are needs assessment, clear learning objectives and outcomes, interactive and engaging methods, the use of multiple techniques or methods (such as case-based learning, clinical simulations, problem-based learning, practice, point-of-care, and feedback), gaming and instructional technology, expert instructors, flexible delivery formats, repetitive and frequent interventions, feedback (providing information to the learner about performance) and assessment, support and resources, setting and physical location, computer-based learning, mobile integration, reflection and application, continuous improvement, alignment with organizational goals,

3. Gray literature

Ref.	Title	Author(s)/ institution (year)/ country	Source type/target audience	Aim/context	Finding (key factors)
(38)	Learning for Performance (Andersen & Nielsen, 2020)	IntraHealth International (2007) Country: USA	Guide and Toolkit	A Guide and Toolkit for Health Worker Education and Training Programs	The guide emphasizes crucial elements shaping the quality and effectiveness of training for healthcare professionals. These essential factors encompass a comprehensive needs assessment, aligning training with national health goals and priorities, clear learning objectives, competency-based instruction, considering learners and their work setting, well-structured curricula, instructional design process (analyse, design, develop, implement, and evaluate), engaging teaching strategies, appropriate learning activities, materials, and approaches, instructional strategy, competent instructors, developing pretesting and revising lessons, learning activities and materials, and learning assessment instruments, prepare for implementation, implementation and monitoring, ongoing assessment with feedback, appropriate use of technology, real-world application of skills, interprofessional education, continuous quality improvement, access to resources and support, cultural sensitivity, and sustainability.
(39)	Training and Learning Standards: A checklist and tool for developing and implementing high-quality training and learning interventions	IntraHealth International (2012) Country: USA	A checklist and tool	Statements that define the generally accepted practice to ensure the quality of training and learning activities	Effective training and development for healthcare professionals relies on several key elements: clear and measurable learning objectives, a thorough needs assessment to identify learning gaps, up-to-date and evidence-based curriculum, engaging instructional design, qualified instructors with teaching skills, regular assessment and feedback, adaptability to diverse needs, accessible

					resources and technology, a commitment to continuous improvement, assessment of practical skills and competency, feedback mechanisms, following up learners, alignment with healthcare goals, evaluation, documentation, policy and strategies, and a focus on improving patient care. Adhering to these standards ensures that healthcare professionals receive high-quality training that enhances their skills and knowledge, ultimately leading to better healthcare outcomes and improved patient care.
(40)	CDC Quality Training Developer Checklist	Centers for Disease Control and Prevention (2018) Country: USA	Quality Training Standards	Standards that serve as a quality benchmark for trainings developed or funded by CDC. The standards provide guidance for developing quality training that results in learning.	The CDC Quality Training standards outline essential elements for enhancing the quality and effectiveness of training and development programs for healthcare professionals. These elements encompass a needs assessment to identify knowledge gaps, clear and relevant learning objectives, and content, engaging instructional methods, design proper experience, accessible resources, qualified instructors, technology integration, ongoing assessment and feedback mechanisms, adaptability to diverse learning styles, continuous support and resources, rigorous evaluation, alignment with organizational goals, thorough documentation, and cultural sensitivity.
(42)	Nursing Professional Development: Lifelong Learning (Canfield, 2021)	Canfield (2021) Country: USA	Article	The essential element of nursing professional development is the continuing education of licensed professional RN's.	The article underlines vital elements that impact the quality and effectiveness of training and development for healthcare professionals. It underscores the importance of aligning programs with individual learning needs, setting clear objectives, utilizing engaging, interactive teaching methods, and using adult learning and specific design principles. The

					qualifications of instructors, continuous assessment, feedback mechanisms, and a supportive learning environment are crucial factors. Flexibility in program delivery, practical application of knowledge, and the availability of learning resources are emphasized. Professional networking opportunities, recognition, and certification are pivotal in promoting lifelong learning among healthcare professionals. Additionally, the article emphasizes the importance of evaluating (outcomes) and continually improving training programs to ensure their relevance and effectiveness in enhancing the quality of care and patient outcomes.
(46)	Resuscitation training for healthcare workers.	Perkins & Mancini (2009) Country: UK	Editorial	Explore the current practices surrounding CPR training of healthcare providers.	There are several key components to a successful resuscitation training programme for healthcare staff: (1) the correct skills need to be taught to the appropriate staff group.; (2) the programme should produce measurable changes in performance; (3) retraining intervals need to balance the probability that the person will use the skills with the effects of skill decay; (4) the programme needs to be affordable; (5) the training should be attractive and accessible to the staff groups they target; (6) the staff need to be empowered to deliver the skills they have been taught. electronic resources (e-learning) and technology to supplement.
(52)	Training Effectiveness Predictors (Learner characteristics, training design, and work environment predict training effectiveness.)	Centers for Disease Control and Prevention (2018) Country: USA	Published Evidence	Summarizes published evidence on training factors that have the Strongest, most consistent relationship with learning and application of	The Centers for Disease Control and Prevention (CDC) highlights the key elements that underpin effective training and development programs in healthcare. At the core of this framework is the imperative of conducting detailed training needs assessments to identify

				knowledge And skills in the workplace	specific learning requirements. Clear learning objectives set the course, ensuring participants grasp the intended outcomes. Active engagement and interactive learning activities foster deeper comprehension, while instructors with expertise in their field enhance the training's impact. Feedback mechanisms and assessments motivate learners, engagement, relevancy, and ongoing support further nurture learning and application of knowledge. Regular program evaluation, integration into daily practice, opportunity to perform, training environment (resources, tools, and follow-up), peer and manager support, and organizational commitment to continuous improvement. These predictors collectively serve as the compass for designing, delivering, and enhancing training programs, ultimately empowering individuals, and organizations to address public health challenges and enhance healthcare outcomes effectively.
(65)	HEE Quality Framework 2017-2018	Health Education England (2017-2018) Country: England	Quality Framework Handbook	A quality framework for high quality healthcare education and training.	The framework underlines several critical elements influencing the quality and effectiveness of training and development for healthcare professionals. These elements encompass patient-centered care, adequate clinical supervision, workplace-based learning, interprofessional education, competency-based education, develop and deliver curricula based on the requirements, assessment and feedback, technology-enhanced learning, clinical governance, equality and diversity considerations, health and well-being support, access to learning resources, leadership and management development, research and innovation, patient and public involvement,

				continuing professional development, learning environment and culture (open, opportunities, facilities, and support), educational governance and leadership, and adherence to regulatory standards. When integrated into training programs, these elements contribute to providing high-quality healthcare, fostering a culture of continuous improvement, and ensuring that healthcare professionals remain well-prepared, adaptable, and responsive to evolving healthcare challenges.