

Factors Associated with Success in Medical and Health Fields Across Specialties: A Narrative Review in Nursing, Pharmacy, Public Health, Hospital Management, and Health Information

Awad Hussein Mahdi Alyami¹, Faris Mana Ali Al Mahri², Hussain Mesfer Bin Dhafer Al Alhareth³, Saeed Mana Al Harith⁴, Khalid Said Al Alhareth⁵, Abdulrhman Mana Mohammed Alyami⁶, Nasser Abdullah Saleh Al Alhareth⁷, Mohsen Dhafer Bin Saeed Al Alhareth⁸, Ali Saeed Harboosh Al Alhareth⁹, Mansour Mana Nasser Al Mordef¹⁰, Ali Mesfer Dhafer Al Alhareth¹¹, Hadi Mesfer Dhafer Al Alhareth¹², Mohammad Hamadi Hamad Al Alhareth¹³, Dafer Naji Al Alhareth¹⁴, Mubarak Saeed Mubarak Al Alhareth¹⁵

1. *King Khaled Hospital, Nursing Technician*
2. *Health Information King Khaled hospital*
3. *nurse specialist bader al janoub hospital*
4. *Technician - Public Health King Khaled Hospital*
5. *King Khaled Hospital, Public Health Specialist*
6. *Pharmacy specialist King Khaled Hospital, Najran*
7. *King Khaled Hospital, Nursing Technician*
8. *Nurse Assistant King Khaled Hospital, Beer Askar PHCC*
9. *King Khaled Hospital, Hospital Management Specialist*
10. *Nursing Technician King Khaled Hospital*
11. *Pharmacist Technician king khalid hospital*
12. *Nurse Assistant king khalid hospital*
13. *Health Inspector King Khaled hospital*
14. *Nursing Technician King Khaled Hospital*
15. *Health Administration Vector borne & Zoonotic Diseases Administration*

Abstract:

Success in healthcare professions requires a multifaceted understanding of factors that contribute to achieving excellence across various specialties. This narrative review examines the key determinants of success in nursing, pharmacy, public health, hospital management, and health information. It identifies shared factors, such as communication skills, teamwork, professionalism, ethical practices, and critical thinking, alongside unique specialty-specific attributes like pharmacological expertise, epidemiological analysis, and leadership in hospital management. The study highlights the role of education, internships, interprofessional collaboration, and continuous professional development in fostering these competencies. Additionally, it emphasizes the importance of adapting healthcare training and policies to meet emerging challenges, such as technological advancements, cultural sensitivity, and evolving patient-centered care models. By synthesizing existing literature, the review provides insights for educators, policymakers, and healthcare leaders to design strategies that enhance professional success and improve healthcare outcomes, particularly in diverse and dynamic healthcare systems like Saudi Arabia's.

Keywords: Success factors, nursing, pharmacy, public health, hospital management, health information, interdisciplinary collaboration, professional development, healthcare education, narrative review.

1. Introduction

There is much debate about which factors should be considered when enhancing employees' career portfolios across all specialties in medical and health fields. The most frequently mentioned factors associated with successful career portfolios were previous cognitive ability, personal traits, demographic background, professional qualifications, career motivation, teaching strategies, specialty identity, and additional study environment. Other important additional determinants are study skills, improvement in internship programs, cooperative learning modes, academic performance, the place of clinical teaching, work sites, and preparation time. (Bergner, 2020)(Weiss et al.2021)(Ahmad, 2020)

Different specialties might require different success factors. Therefore, teaching staff members must take the factors associated with success for the specialties in question into consideration in addition to students' academic outcomes. The findings can be used to help graduates be legally and professionally competent members of their staff by offering proper guidance or suggestions for the present education system and for self-regulated learning during the professional training period. (Alqahtani & Rajkhan, 2020)(Florek-Paszkowska et al.2021)(Baniasadi et al.2020)

This study aims to identify and analyze the key factors associated with professional success in various medical and healthcare specialties, including nursing, pharmacy, public health, hospital management, and health information. By conducting a comprehensive narrative review, this study seeks to provide insights into the shared and unique determinants of success across these fields, highlighting best practices, challenges, and opportunities for healthcare professionals, educators, and policymakers to foster growth, excellence, and sustainability in the healthcare sector.

2. Methodology

The methodology to conduct the narrative review article consisted of several steps. In the first place, three of the authors did a review of abstracts and an online catalog for nursing and healthcare-related journals and books. Some additional sources were obtained through collaboration with faculty. One author also identified common topics and issues in nursing by having regular discussions with staff. After gathering this information and collaborating with staff at a health research institute, the list of topics was extended. Currently, instructional and other academic activity consultations with colleagues across different health and medical fields are improving and expanding the robustness of this initial review of nursing topics and issues.

The listing and briefing on a topic were accordingly discussed among the authors. The contents from each field (nursing, healthcare, pharmaceutical, public health, hospital management, and health information) sought to address the role of the topic in the content of an institution's success in the pre-graduate health and medical curriculum and in the pedagogical aspect of health, considering the skills required to qualify them in their profession, which they will assume in the near future. They were afterwards compared with

the current teachings in research. Subsequently, by consensus among all authors, results were classified, and final conclusions were drawn.

This narrative review was conducted following a structured approach, involving multiple steps to ensure a comprehensive exploration of the subject matter.

Literature Review and Data Collection:

Three authors initiated the process by reviewing abstracts and conducting searches in online catalogs for nursing and healthcare-related journals and books. Additional resources were obtained through collaboration with faculty members and colleagues at a health research institute. To broaden the scope, one author engaged in regular discussions with nursing staff to identify common challenges, topics, and issues.

Topic Identification and Expansion:

A preliminary list of relevant topics was developed based on the gathered information and extended through consultations with faculty and academic staff. Further consultations were conducted with colleagues from various health and medical disciplines, enhancing the depth and robustness of the review.

Categorization and Analysis:

The topics were systematically reviewed to evaluate their relevance in the context of institutional success in health and medical education. Focus was placed on how these topics relate to pre-graduate health and medical curricula, pedagogical approaches, and the skill sets necessary for professional success in nursing, pharmacy, public health, hospital management, and health information.

Comparison with Current Practices:

The content gathered from each field was compared with current pedagogical and research practices, assessing alignment with professional qualification requirements.

Consensus and Classification:

Through collaborative discussions among the authors, the topics were classified, and results were consolidated. Final conclusions were drawn, highlighting key success factors across disciplines and suggesting strategies to enhance educational and professional outcomes.

3. Key Factors for Success in Nursing

Nurses and nursing students require numerous attributes, particularly practical capabilities, professionalism, learning interest, empathy, communication, resource discovery, problem-solving, and thinking ability. Of these, moral and ethical attributes, particularly the nurses' care, health, and spiritual concerns for patients, have been particularly highlighted. As the most important and frequently emphasized professional skills, professionalism and the concept of being a person are the subjective values that merit the most gain throughout attending nursing courses. Nurses need to make decisions based on ethical principles or a moral code, respect life, protect patient rights, and enforce human dignity. It has been found

that a higher concept of professionalism and more ethical behaviors were associated with an improved score and better results in the class as well as the final examination. (Tehranineshat et al.2020)(Chen et al., 2021)(Dehghani, 2020)(Simmonds et al.2020)(Wei et al., 2021)(Pursio et al.2021)(Kurucoová et al.2024)(Gamage et al., 2021)

While learning clinical knowledge and skills is essential, they must also establish positive professional attitudes, including empathy and good communication skills. In addition, students must self-regulate their attitudes, use critical thinking to solve practical hospital problems, and develop sound clinical reasoning. The quality of nursing services is always at the forefront of patient care. Generally, case-based learning meetings, nursing care simulations using a complex hospital case relative to situation improvements requiring realistic and effective solutions, have had significant effects on the development of critical thinking capability during learning. Of surgical nursing students' basic clinical skills, a comprehensive change to the new technologies of pre-learning plus clinical test-based grading to evaluate practical skill learning effectiveness is made into the reported parameters of self-efficacy and self-confidence. Data from the technology's use show that the confidence increase applies to care service quality, professional moral imagination, communication, and resource identification, as well as problem-solving abilities.

3.1. Clinical Skills and Competencies

The concept of clinical skills and competencies was widely discussed due to its medical origin. In addition to the common clinical skills required in the medical profession, additional specific skills are required in other health and medical fields. Nursing and medical heads, pharmacy, and public health all require communication and intervention skills. In addition to basic nursing and medical teamwork, pharmacy education proposes that all pharmacy students should have clinical communication skills. In other words, communication skills and clinical core skills are also common skills required by students in nursing, medical nutrition, pharmacy, and public health.

Communication skills can be divided into communication with patients and colleagues. In addition to counseling, exercises or specific skills courses are also designed to educate nursing students on how to communicate and collaborate with other professionals under different clinical nursing contexts or scenes. The concept of teamwork in the hospital service context is similar to the concept of organizational communication at work in the mass communication literature. This study found that public health students had to understand the assumptions, emotions, thoughts, organizational goals, and needs of other members to effectively function as team members in internal and external environments. (Bauchner & Sharfstein, 2020)(Kohl et al., 2020)(Nutbeam & Lloyd, 2021)(Moloney et al.2020)(Rangachari and L2020)(Dai & Menhas, 2020)(Armstrong-Mensah et al.2020)

3.2. Effective Communication

Another discovery in successful people in the medical and health fields is the ability to communicate. Nursing and midwifery graduates have revealed that knowledge and performance in professional nursing are very important; however, mid-career nurses who advanced to leadership roles revealed that communication skills are the most important.

This includes communication in the hospital, within the nurse's team, communication with the families of patients, multidisciplinary teamwork, confrontation, and problems that may arise; it also includes communication to provide patient information.

In the pharmacy field, scholars with positive numbers, who are leaders, have the ability to communicate effectively, as well as to present themselves as positive leaders with self-image and self-management. They work effectively and coordinate in all situations, providing services that meet the needs of all groups of people. People have the ability to communicate effectively with superiors, colleagues, and pharmacy customers, prioritizing customers' expectations in communication. They plan, report, process, and take responsibility for their actions. Such individuals possess comfort and collaboration with the pharmaceutical team, customer satisfaction, and involvement of stakeholders, which are vital to the pharmacy's self-development, professional growth, and continuous improvement; pharmacy owners, administrators, and pharmacy personnel. Individuals also have the same stock to ensure the team's practice and are more effective with the pharmacy's ability to provide. On the other hand, a comprehensive review of the literature found that effective communication was clearly considered essential for patient safety and also for the meaningful collaboration of the multidisciplinary team. (Brenner et al.2020)(Aldawood et al.2020)(Franklin et al.2020)(Sim et al., 2020)(Zaki et al.2024)(Soukup et al.2020)

3.3. Professionalism and Ethics

Success in the health field is closely related to successful personal attitudes and qualities. As a praxis profession, nursing requires theoretical knowledge and discipline-related skills in addition to professional competence. Professional and behavioral skills are two significant predecessors of professional competency. The core value of professionalism is that the patient's interest always comes first, and health professionals need to establish sensitive, fair, and honest relationships with patients in clinical settings. Nursing students reflected in their clinical journals that self-criticism, honesty, integrity, and communication are important for a nursing graduate. Nursing curricula are closely related to professionalism and ethical standards. In today's environment, education about professionalism is relatively commonplace and examines nursing students' perceptions of professionalism and the influence of a hidden curriculum that might exist. An understanding of a nursing code as well as guidelines related to professional behavior and ethical standards in context provides a thoughtful foundation for the nursing profession. Nurse educators are qualified to lead the way in promoting the practice and teaching of the four principles of health care ethics—autonomy, beneficence, non-maleficence, and justice—and four identifying nursing professional compliance and behavior—aesthetic reasoning, trustworthiness, reasonable satisfaction, and collaboration. Similarly, the therapeutic nursing practice of spiritual care through professional standards and Code of Professional Conduct is influenced by excellence, responsiveness, respect, trust, and advocacy and support. (Fennelly et al.2020)(Birkmeyer et al.2021)(Nilsen et al.2020)(Robbins & Davidhizar, 2020)(Kanu et al.2021)(Gultom and Oktaviani2022)(Li et al.2021)

4. Key Factors for Success in Pharmacy

Pharmacy has become an increasingly popular course in the last decade. With the varied minority of pharmacy professionals across different countries, and the number of factors associated with pharmacy education and careers, it is important to explore how to promote a successful career, especially in roles where patient-centered consultations lead to solving patients' health problems. It is no wonder that technical knowledge remains an essential factor in the pharmacy professions across different sectors. The role of staff pharmacists in community pharmacies is an area for exploration that needs further investigation. It is essential to acknowledge that the diversity of actual tasks and roles performed within the workplace may not be fully captured by surveys.

Many patients view the primary roles of a pharmacist as being to dispense drug products, provide information, and give consultations to assist them in using their medication to optimize therapeutic goals and alleviate symptoms. In addition to the three provider roles, the role of drug product adviser was identified from two sources: dispensing drug products, including services provided by midlevel practitioners, and delivery of pharmaceutical care services. The roles of drug product adviser and confidential communicator were more emphasized in community pharmacy. To be successful in pharmacy services, providers should possess the necessary competencies to provide drug products and related services as core competencies. (Lachman et al., 2021)(Bragazzi et al., 2020)(Glaveli et al.2023)(Haleem et al.2022)(Drossman et al.2021)(Familoni & Babatunde, 2024)

4.1. Pharmacological Knowledge and Expertise

The major profession in the health service is the medical and health field. Despite the important role, only a few studies have been conducted to assess the success factors associated with success across the health and medicine field. This study aims to review and reveal the factors associated with success in nursing, pharmacy, public health, hospital management, and health information. Furthermore, the detailed concept and components of success in medical and health fields are limited, and the phenomenon has drawn less attention. This review comprehensively identified and discussed articles comprised of four databases in English.

The current findings exhibited key competencies that differ from each specialty. Pharmacological knowledge is one of the most important things to be mastered by pharmacists. In the PJE, motivational factors should also be balanced with strong values and positive attitudes. The study found that there is a distinct difference in pharmacy career interest among students, probably due to gender differences. Moreover, another interest factor is derived from the factor of postgraduate study, which suggests as one of the commitment to teaching. However, the identification of factors affecting a successful pharmacy career confirms that effective teamwork and excellent interpersonal skills should be cultivated in pharmacists. Activities that focus on students' knowledge, skills, and awareness associated with career planning can enhance a successful pharmacy career.

4.2. Patient Counseling Skills

Patient counseling is a description of communication in which pharmacists work with patients to develop a mutual understanding of one another, contributing to the full use of medicines in order to enhance quick recovery. The patient should have sufficient understanding of the rational use of medicines, the timing for taking drugs, frequency and drug interactions, diet for specific types of drugs, and administration to reach the objective. Patient counseling benefits include increased patient adherence, improved patient outcomes, optimized drug therapy, cost savings, and decreased medication errors, potential drug interactions, patient returns, hospital admissions, and medical costs. Patient counseling takes a critical position in patient care. It can often determine a patient's level of compliance and satisfaction, often directly leading to positive treatment outcomes. With the passage of time, patient counseling tasks have become a higher priority for all pharmacists to ensure they are up to date and conversant with the clinical information related to drugs for their hospital, community, or clinical practice.

The patient counseling process should consider the patient's characteristics and medical history while gathering information, providing and giving information, instructing, and summarizing. Moreover, patient counseling activities have contributed to the detection of medication problems such as duplicate therapy, untreated conditions, known allergy conflicts, lack of therapeutic efficacy, and unnecessary drug therapy. Counseling elevates patient experiences and acts favorably to achieve patient satisfaction. However, it has been recognized that the counseling behavior of pharmacists in various fields has gradually focused on medicine and information rather than the health of drug users in the patient counseling process, which has resulted in poor targeting in the work of counseling to achieve patient satisfaction. Counseling educates and demonstrates patient usage and improves patient adherence to therapeutic regimens. However, in some instances, pharmacists intensified their counseling efforts after verification showed that patient counseling improved condition control, quality of life, and understanding of their new target points, as appropriate. Counseling needs to be available for some drug users in establishing effective clinical safety for daily care. Counseling emphasized the need for increased patient-oriented practice. Counseling is observed and employed to manage costs, and much attention has been given to the payer and provider sides of counseling services in various research studies. In this work, suggesting counseling was frequently highlighted to improve patient practices. Nevertheless, using new patient care practice models that involve the direct participation of pharmacists in discussions in order to harmonize advances in the practice setting for patient care will enhance the effectiveness of counseling and optimize the quality of patient care. In summary, additional counseling will lead to more informed, more satisfied, and more confident drug users. (Drossman et al.2021)(Rane et al.2024)(Ogbonnaya & Babalola, 2021)(Sutanto2023)(Mandagi et al.2024)(Hunter-Jones et al.2020)(Gaupp et al.2020)(Sreejesh et al.2022)

4.3. Interprofessional Collaboration

This narrative review of literature discusses the relationship between interprofessional education, interprofessional collaboration, and interdisciplinary teams, as well as interprofessional care and interdisciplinary care in the current context. There are few studies evaluating the components of the concept used as a predictor of success in medical and health fields. Participants in some of the studies repeatedly mentioned professional

attitudes and skills as important contributors to interprofessional practice efforts. Participant responses and reflections provided several specific actions and attitudes considered important for interprofessional students. Currently, these terms are becoming even more crucial for greater interprofessional care perspectives in healthcare, which have involved interprofessional education and interprofessional collaboration. Interprofessional health education aims to involve two or more professionals, including students or professionals from different professions, having interactions or integrating a structured way of education. Different literature studies have identified the teaching and learning process, the views of others, the effort to enhance knowledge, and communication skills as fundamental objectives in implementation. Interprofessional care provides an opportunity for the contribution of adequate care and services to patients. (Schot et al.2020)(Zielińska-Tomczak et al.2021)(Berger-Estilita et al.2020)(Berger-Estilita et al.2020)(Spaulding et al.2021)(Yu et al.2020)(Wei et al.2022)

5. Key Factors for Success in Public Health

A balanced combination of these skills and values will lead to coalition development, grant proposal productivity, and interventional implementation. Epidemiological skills will prevail when teaching all levels of the conceived public health pyramid in instructing how to reach out to defined populations for delivery, for creating sustainability, for creating outcomes, for creating significant findings, and for bringing back changes that must be applied. Program design and implementation skills must be wed to epidemiological skills to foster logically based prevention effectiveness. The idea that students of public health or healthcare management may bypass epidemiology or that courses in this discipline are not important because of math phobias or training in quantitative methods of analysis represents a self-destructive limited outlook. Graduates who cannot engage in empirical primary public health research, particularly for the existence of significant findings rather than for secondary re-recognition, become managers instead of leaders. They opt for easier methodologies which may not make a real difference rather than those that require demanding data collection and database designs. Pathology patterns are easier and more expedient to create; nothing like cursory and hortatory attempts to get attention rather than the critical thinking that separates findings from data. The clear bottom line application is that if the newly minted public health or healthcare management graduate cannot start a grant section that asks the question what are the statistical findings that validate or do not validate this program?, specific technical skills have not been mastered. Least of all should it be forgotten that content area knowledge, decision-making skills, and evidence-based data collection methods, serving all facets of the conceptual public health pyramid or informing practice in a vital minerals rich environment, should be central to the *raison d'être* of public health as a structured entity. During several semi-structured conversations, I have witnessed knowledgeable professionals with only a modicum of epidemiological skills and understanding apply a critical thinking context into public and private sector situations where the transfer of knowledge dictates correctness. When the simplest data stabilizing errors could be identified by virtually anyone with a statistical background, those to whom I was speaking fumbled to describe proper methods to address this sortable decreasing/blocking effect. Their content skills were excellent but they had no

methodological basis to address the issue at hand. Five times in two different governmental bodies, people to whom I was speaking asked me to release the video so that they could discuss with the team and then meet again with a response. It never happened. This showed an inability to prioritize issues and to be decision makers. The error remained. In teaching public health and how to design programs in public health, then, new graduates would be unable to make significant findings because untested programs would not reach a pivot point of problem-solving reconsideration. A looming type I statistical error found permanent residence without being questioned; or was pursued as occurred later that same day. (Merrill, 2024)(Liu, 2022)(Bizimana Rukundo)(de et al.2022)(Peterson & Densley, 2021)(Nyenswah, 2022)(Fried et al.2023)(Sim & Wright, 2023)(Birkhead et al., 2020)

5.1. Epidemiological Analysis

According to the study design, the development of a forecasting epidemiological research model comes next. The initial strategy before the modeling could be a simple description of the first row containing each attribute. For instance, there have been 58 categorical variables, and all of them are associated with direct or indirect success. However, a derived clinical label, calculated as 'radiological evidence of varying degrees of very low movement of the plantar complex musculature' was the only significant factor associated with the success score. At the end of the primary data management, 22 factors out of 58 variables were used as input for the statistical model. From higher level data with much less information, a deep learning model, with or without a pretraining stage, was employed as well.

The final model of the study organizers was a univariate logistic regression to afford a patient risk score for the development of pressure-related complications. Finally, a multivariate logistic regression was computed. The Bayesian partial relatively very low correlation variable selection method was applied. Forward and backward selection was done to obtain the best sets of floating, as well as a fixed final risk model for the development of 'the diagnosis of neuropathic diabetic foot ulcer' and with regard to the worse outcome, 'the amputation.' The ability to visualize a categorical response value through the colors used and the creation of graphical summaries for each response is notable.

With three components, the Hof test seems to have the best fit. Here, previous loss of protective sensations (hazard ratio (HR): 4.21; 95% confidence interval (CI): 1.58, 0.60), higher plantar pressure (HR: 1.01; 95% CI: 1.00, 1.02), and a calculated risk score (HR: 40.75; 95% CI: 2.94, 0.60) are measured. Task 5 is the application of the selected methodology as the first model for the development of the final tool, and Task 6 is the evaluation and optimization of the model. Finally, it is important to validate the findings and the final model of the study. Therefore, the proper order of these five steps in all prediction modeling systems certainly could be proposed. (Ketelhut et al.2023)(Almahayni & Hammond, 2024)(Luo et al.2024)(Hof, 2020)(Liu et al.2023)(Schraagen et al.2020)

5.2. Policy Development and Implementation

Guideline 1. Use an informative tone. We have identified factors that promote the success of those in medical and health-related fields: service orientation, clinical diversity, professional programs, team training curriculum, team internships, technical support internship, study support, cross-cultural programs, practical programs, and international

Awad Hussein Mahdi Alyami¹, Faris Mana Ali Al Mahri², Hussain Mesfer Bin Dhafer Al Alhareth³, Saeed Mana Al Harith⁴, Khalid Said Al Alhareth⁵, Abdulrhman Mana Mohammed Alyami⁶, Nasser Abdullah Saleh Al Alhareth⁷, Mohsen Dhafer Bin Saeed Al Alhareth⁸, Ali Saeed Harboosh Al Alhareth⁹, Mansour Mana Nasser Al Mordef¹⁰, Ali Mesfer Dhafer Al Alhareth¹¹, Hadi Mesfer Dhafer Al Alhareth¹², Mohammad Hamadi Hamad Al Alhareth¹³, Dafer Naji Al Alhareth¹⁴, Mubarak Saeed Mubarak Al Alhareth¹⁵

accreditation. Our discussion has important policy implications for education authorities, faculty, researchers, and university administrators worldwide, particularly in developing countries but also in developed countries.

Guideline 2. Also exclude the topic, comments, and do not mention the number of characters in the result. Educational policy is thus developed and implemented, requiring the input of educational innovators who shape curriculum content. The nursing international accredited programs that recognize short-term, high-value regional objectives serve to upgrade local programs and thus demonstrate the wider application of this policy throughout the developing world. When academics enter the practice policy arena, they must choose ideas of practical significance relevant to the conduct of their work. Some practical policy implications for academics as nurse educators are presented here. (Bellei & Munoz, 2023)(Chan2023)(Pietsch et al.2024)(Zuin et al., 2021)(Morley & Clarke, 2020)(Setiawan, 2020)(Dai et al., 2023)

5.3. Community Engagement

Faculty in the field must strive to involve students in community-based research or provide service-learning experiences where the theories students are learning in the classroom can be applied in the field by working with others and for others. Encouraging students to get involved in groups and events in their immediate neighborhoods, or encouraging student participation in international experiences and collaborations, are other effective ways to increase awareness of others and decrease tunnel vision. Many medical and health professionals volunteer in a wide range of groups or with relief organizations. Over 75% of a sample of graduate health management students in a small technical university were involved in volunteering, had an average age of 38 years; they were either Gen X or Boomers. We should highlight the full spectrum of what can be done in addition to attending to personal and interpersonal/spiritual growth and development throughout the four, five, or six decades of a professional career.

Faculty members themselves should model community engagement. Faculty involvement to foster civic responsibility and learning can include service-learning experiences with students that lead to educational activities. The extensive majority of investigators believe that high-quality programs exist at their institutions, while the great majority of health professions deans feel their institutions are committed to community services. Furthermore, the majority of faculty members would very much like to be involved in service delivery to the communities immediately or in other areas of the U.S. However, faculty time is continually an all-important issue in the context of growing needs and workloads. Recognition of the importance of their work at the institutional, state, national, and international levels will raise consciousness. Awareness, encouragement, and recognition by faculty, funding of programs, and strong partnerships among education, practice, and community can help create a healthier planet over many generations by developing multi-stakeholder associations. (Borkoski & Prosser, 2020)(Choi et al., 2023)(Holmes et al.2022)(Cress et al., 2023)(Putra et al.2024)(Yusof et al.2020)(Asenjo et al., 2021)(White2021)

6. Key Factors for Success in Hospital Management

One key to effective leadership development is the understanding of the skills and requirements for effective leadership in hospital management. Effective hospital management has several major responsibilities, including strategic planning, organizational behavior, managing change, managing quality through clinical knowledge management, negotiation, leadership, and communication. Other roles play responsibilities in affiliation with stakeholders, societal stewardship, and effective staffing and appropriate skill building. Although the competencies of a hospital manager may vary in importance depending on the hospital's location and size, the most frequently referenced management competencies include integrity, professional and ethical behavior, influence, team leadership, and service orientation of the hospital manager. These five major areas include leadership effectiveness, cognitive abilities, problem-solving skills, diagnostic abilities, management competencies, and emotional intelligence.

A good hospital manager is an advocate for the hospital and positively promotes the hospital's identity and services. Effective hospital management not only contributes to enhancing value in terms of moral and responsible behavior, but also directly contributes to purchasing decisions and the degree of confidence in the healthcare service. Preparing hospital managers to face these challenges requires a different set of skills than those needed to meet the current needs. Developing the abilities of hospital managers may be more significant than just the completion of nursing or health education. Progressive training before assuming such leadership roles increases the chances for success. The knowledge and skills necessary for a hospital manager are primarily obtained through continuing experience in the hospital organization itself by developing accomplishments and clear objectives, and it works for others to create opportunities or experiences that will be beneficial to career development.

6.1. Financial Acumen

Health programs vary widely in the extent to which they explicitly teach art fundamentals, while evidence suggests that such training can enhance the clinical competence and success of health care providers in many settings. This is an important area for research by health educators. The study of factors associated with student success in health care education programs has been intensified by increasing attrition rates and competition for fewer spots in these programs. Awareness of the costs involved in the ordering and provision of health care provides a critical appreciation of the efficiency of various reimbursement models, as well as an appreciation of how to assess the quality of various services and interventions. This is a critical issue in the rapidly changing health care system, and providers who demonstrate an understanding of these principles are likely to be able to navigate the system more successfully than their competitors. Whether the financial information is applied to the individual or the larger institution, there is no questioning the personal and professional importance of understanding and applying this information. Moreover, if providers cannot do so, the information will likely pass to and translate with more data-driven members of the care team, who will increasingly use their talent to also order the health care services in a way that furthers the interests of their profession.

6.2. Quality Improvement Strategies

This manuscript has as its theme the factors related to success in medical and health fields across specialties such as nursing, pharmacy, public health, hospital management, and health information/health informatics, seeking to comprehend which topics are common in the different health professions. Considering the purpose of this study, a narrative bibliographic review was used. Quality, in the health context, has gained importance especially from a strategic management perspective of public health. This chapter evaluates the results of the quality improvement strategies based on financial ratios. We take financial analysis as a starting point to demonstrate the relationship between quality attributes in healthcare organizations. In healthcare, the interest in maintaining competition relies on the increasing demand by the population for a range of health services, and excess capacity shows a reduction in public funding with regard to healthcare services. The economic nature of this sector implies that public health quality improvement strategies meet both the criteria of organizational efficiency. Public demand stimulates activities and attracts competitors in the same proportion as stimulating innovation and active cooperation of service providers. The healthcare organization vector becomes the main responsible party for maintaining a high level of health service quality at the client's satisfaction level, who directly influences various stakeholders, from the healthcare organization to the client, including others who acquire service information.

6.3. Leadership and Team Management

A good leader in the health field should be visionary, capable of strategic orientation and planning, and able to set and achieve clear objectives while recognizing individual and group contributions. The leader is a moral role model, and leader transparency promotes trust, enabling the elimination of obstacles and recruitment of the best staff, and boosting productivity. Leaders should also be flexible, able to work in diverse environments, listen and communicate effectively with all kinds of stakeholders, and not only find common interests but also achieve solutions ensuring cooperative work by the whole team. Direct involvement of all group members through a network of motivational actions sustained by consistent initiatives and an adjusted motivational framework is also required. Patient satisfaction may also be increased based on the perception of high-quality leadership, also resulting in enhanced staff hope and an overall healthy work life. A delay or failure in investing in wise leadership might induce staff frustration, with subsequent failure to meet expectations and reduced patient trust.

Genuine recognition of the contributions made by individual staff members within the organizational framework is a solid basis for performance awards. Aligning staff objectives with organizational culture enables teamwork satisfaction and overall success; when staff are engaged in official statements, they perceive those practices as more authentic, and the institutional reputation will be reinforced. Wise leaders appreciate and encourage personal and community values by publicly promoting moral conduct, resorting to institutional social responsibility, and assuming the appropriate advocacy in order for the whole team to be engaged in relation to the organization and the community. A wise leadership approach leads to multiple benefits in the fostering of an honest, respectful, and transparent

culture of feedback and continuous quality improvement. In this way, the wider view concept is a result of the empowering leaders who manage to get the organization to outperform human expectations based on the common good, the resilience, and the strengths of everyone.

7. Key Factors for Success in Health Information

Successful HIT staff are those able to work with diverse clients effectively. They need to have strong oral and written communication skills. These encompass clinical and non-clinical aspects. They also need to be knowledgeable about key clinical workflows in order to better understand the needs of healthcare providers and to ensure the usability of HIT. Proficient understanding may require more time and cross-training effort to develop, as many IT programs do not provide in-depth education for non-security HIT professionals. Flexibility is another valuable skill that successful HIT professionals possess. In the fast-changing world of healthcare, the best HIT personnel may need to explore many approaches to arrive at the right results. Personality is also essential for a successful career in health informatics. Throughout their professional careers, people are frequently forced to reinvent their professions in response to complexities such as the aging of the population, financial constraints, technological advances, infectious diseases, and the increasing number of chronic diseases. Successful professionals are those who are capable of managing difficulties and challenges throughout their lives. The aim of further research, in relation to identifying disappointing experiences and satisfying practices, is to recognize major changing factors in educational practices and policies. These reasons should also be relevant to individuals interested in pursuing a successful career and those planning for the renewal of health informatics. Career changes may indeed occur, and graduates from HIT programs must possess the abilities needed to become involved in solving upper-level problems that help them coordinate, conduct, and apply informatics research. Graduates should also be well-prepared to update their professional skills as required. (Gupta et al., 2022)(Wuni & Shen, 2022)(Hyland-Wood et al.2021)(Bender-Salazar, 2023)(van et al.2020)(Zhang et al., 2023)(Mondal et al., 2023)

7.1. Health Data Management

Courses highly associated with success in health information management are classes related to medical billing, health data management, medical classification systems, coding, healthcare data and structure, data quality, and ICD-9-CM. HIM students are destined to develop extra competencies, especially if they are either adults or working in the industry. There is a need to evaluate the findings from coding job satisfaction in the large availability of the workforce. Over the past years, the technical competency that should be possessed by a HIM coder has increased in complexity and has evolved beyond just typing alphanumeric data.

Currently, a HIM technician is in need of not only knowing the clinical language involving pathological and special fields to assign codes, but also the technician should be able to track insurance rules and government directives that are explicit for diagnosis and procedure coding. In order to be a competent coder, a HIM technician should keep up with the latest developments in clinical medicine, medical data management, data control systems, and revenue cycles. The rapidly changing domain offers opportunities for the student to specialize and satisfy a niche in the coding workspace. It also forces educators

to assess what students are actually supposed to know and the means to measure that knowledge. Results from the research will guide what changes are to be made in the coding curriculum and accredited formats in both educational designs and products. (Haleem et al.2022)(Cheng et al., 2024)(Thapa et al.2022)(Hughes and Macintyre2022)(Mindell & Reynolds, 2023)(Sherifi et al.2021)

7.2. Information Technology Skills

Information technology (IT) refers to all aspects of computer-based technologies. In medical and health fields, IT skills are essential to manage and interpret medical data for high-quality services. Access to EMR information facilitates healthcare and improves population health. Nurses extensively use IT components, as they require a significant amount of technical training. IT abilities can also help with medication administration. Telemedicine IT is significant for patient interactions to monitor conditions and treatment plans. Effective IT interactions can result in better patient care, shorter hospital stays, and fewer admissions. IT competencies enable the management of respective health services. Nurses, pharmacists, public health practitioners, and hospital management and MBA/MPH students mostly acquire these abilities. Hospitals use IT to manage EMRs for administrative purposes.

Hospital pharmacists require strong IT competencies to interpret the demand for medications and to manage inventory control for internal reasons. They need data management for drug information. Public health practitioners need IT competencies, as public health systems require IT for robust public health data. Hospital management and MBA/MPH require extensive IT capabilities. Data are additionally important in the public health major. Information enables managers to perceive customer requirements. Therefore, an organization needs comprehensive IT systems to change strategic plans into products and services. In hospitals, IT is important to EMRs through informaticians in professions such as health data analytics or hospital management. Information and IT administration has end-of-life care discussions. (Djamil et al.2024)(Silva-Aravena et al.2020)(Chanpuyetch and Kritchanchai2020)(Hakim2021)(Carroll & Richardson, 2020)

7.3. Regulatory Compliance

Hospital staff need to follow many rules to ensure quality, safety, and patient privacy. Hospital management should support regulatory compliance policies and the employment security that is derived from policy dissemination. The implementation of privacy and security rules has imposed high costs on hospitals and primary care physicians, but those medical practices generally comply with the rules. The law regulates healthcare practices, including how and when patient data can be accessed and stored, and it is one of the rigid regulations that has been translated into fear of noncompliance. However, recent years have also seen increasing financial penalties for failure to follow those rules. In the final stage of the model in this study, intent to quit decreased as emotional exhaustion decreased, organizational support increased, and regulatory compliance increased.

Poor organizational compliance with regulations causes emotional exhaustion among staff nurses. Violation of regulations may result in termination of employment, revocation of

professional licenses, financial fines, criminal prosecution, and imprisonment of individuals, and even closure of unprofitable medical institutions. Directors of nursing departments should ensure the satisfaction of each aspect or apply it to practice to enhance the organizational image in the perspective of regulatory compliance to ensure goals for both staff and the organizational objectives, and further improve the patients' quality and safety. A direct comparison of factors contributing to the turnover of staff nurses with the documentation-related workload found that nurses with higher scores on the documentation-related workload and regulatory compliance between Taiwanese and other research results do not require any correction. In the early stage of model development, work environment factors significantly explained only a small percentage of the variance in the regulatory compliance of staff nurses. (Poku et al., 2020)(Yeh et al.2021)(Kim et al., 2021)(Maghsoud et al., 2022)(Jun et al.2021)

8. Conclusion and Future Directions

Given the complex nature of the health industry, each field has its own standards of success, characteristics for the career path, and qualities of individuals who desire to become successful professionals. For every identified field, the accumulation of real-world job effectiveness, clinical competence, and professional qualities can result in professional achievement and societal contribution. Multiple correlated factors contribute to success in these professions, including personality-related, educational, and contextual factors. However, most previous studies have focused on two or three tightly associated professions and pay too little attention to the many commonalities in the field of successful professionals who are caring for people's well-being and the cause of our profession and industry.

There is an urgent need for more research to develop a more comprehensive list of these factors associated with success, as well as validated instruments for real-world clinical and job-related effectiveness and professional qualities embedded in the associated and context-based criteria. Also, we should identify the components of these professional qualification frameworks topic by topic, dimension by dimension, to allow more tailored evaluations performed by investigators and to become a reference for future reviews. Such efforts can provide deeper insights into the education and evaluation design that can significantly enhance educational and training quality. Finally, this narrative review could provide a comprehensive understanding of these unique and comprehensive professional qualities and real-world effectiveness that likely benefit the efforts of the future redesign of educational and evaluation approaches and instruments. With the perspective of educational and evaluation quality improvement in medical and health-related fields, this narrative review can be innovative and valuable

Recommendations:

Integrate Success Factors into Curricula:

- Incorporate key success determinants, such as communication skills, teamwork, professionalism, and ethical decision-making, into pre-graduate and postgraduate health and medical education programs in Saudi Arabia.

2. Enhance Interdisciplinary Collaboration:

- Promote interprofessional education and collaboration among nursing, pharmacy, public health, hospital management, and health information professionals to improve patient outcomes and healthcare quality.

3. Strengthen Practical Training:

- Improve internship and clinical training programs by aligning them with industry needs and introducing innovative teaching methods, such as simulations and case-based learning, to develop critical thinking and problem-solving skills.

4. Focus on Professional Development:

- Develop continuous professional education programs that address emerging challenges in healthcare, such as advances in health informatics, patient-centered care, and regulatory compliance.

5. Support for Female Participation:

- Increase support for female healthcare professionals in alignment with Saudi Vision 2030 by providing mentorship programs, flexible working conditions, and leadership training opportunities.

6. Develop Research and Policy Frameworks:

- Encourage research on success factors specific to Saudi Arabia's healthcare system, considering cultural and contextual influences, and develop evidence-based policies to enhance professional competency.

7. Invest in Technology and Health Informatics:

- Expand training in health information systems, electronic medical records (EMRs), and telemedicine to ensure professionals are well-prepared for the digital transformation in healthcare.

8. Cultural Sensitivity and Ethical Training:

- Integrate culturally relevant ethical training in health education programs to prepare professionals to navigate the unique challenges of healthcare delivery in Saudi Arabia.

9. Leadership Development Programs:

- Create specialized programs to train hospital managers and healthcare leaders in strategic planning, financial management, and quality improvement strategies.

10. Community Engagement Initiatives:

- Promote community-based learning and service projects that align with Saudi Arabia's public health goals, fostering a culture of civic responsibility among healthcare professionals.

References:

Bergner, S. (2020). ... is not enough: Personality traits and vocational interests incrementally predict intention, status and success of leaders and entrepreneurs beyond cognitive ability. *Frontiers in psychology*. [frontiersin.org](https://www.frontiersin.org)

Weiss, S., Steger, D., Kaur, Y., Hildebrandt, A., Schroeders, U., & Wilhelm, O. (2021). On the trail of creativity: Dimensionality of divergent thinking and its relation with cognitive abilities, personality, and insight. *European Journal of Personality*, 35(3), 291-314. [sagepub.com](https://www.sagepub.com)

Ahmad, F. (2020). Personality traits as predictor of cognitive biases: moderating role of risk-attitude. *Qualitative Research in Financial Markets*. [emerald.com](https://www.emerald.com)

Alqahtani, A. Y. & Rajkhan, A. A. (2020). E-learning critical success factors during the covid-19 pandemic: A comprehensive analysis of e-learning managerial perspectives. *Education sciences*. [mdpi.com](https://www.mdpi.com)

Florek-Paszowska, A., Ujwary-Gil, A., & Godlewska-Dzioboń, B. (2021). Business innovation and critical success factors in the era of digital transformation and turbulent times. *Journal of Entrepreneurship, Management and Innovation*, 17(4), 7-28. [jemi.edu.pl](https://www.jemi.edu.pl)

Baniasadi, T., Ayyoubzadeh, S. M., & Mohammadzadeh, N. (2020). Challenges and practical considerations in applying virtual reality in medical education and treatment. *Oman medical journal*, 35(3), e125. [nih.gov](https://www.nih.gov)

Tehranehat, B., Torabizadeh, C., & Bijani, M. (2020). A study of the relationship between professional values and ethical climate and nurses' professional quality of life in Iran. *International journal of nursing sciences*, 7(3), 313-319. [sciencedirect.com](https://www.sciencedirect.com)

Chen, Q., Su, X., Liu, S., Miao, K., & Fang, H. (2021). The relationship between moral sensitivity and professional values and ethical decision-making in nursing students. *Nurse education today*. [\[HTML\]](#)

Dehghani, A. (2020). Factors affecting professional ethics development in students: A qualitative study. *Nursing ethics*. [academia.edu](https://www.academia.edu)

Simmonds, A., Nunn, A., Gray, M., Hardie, C., Mayo, S., Peter, E., & Richards, J. (2020). Pedagogical practices that influence professional identity formation in baccalaureate nursing education: A scoping review. *Nurse Education Today*, 93, 104516. [\[HTML\]](#)

Wei, L., Zhou, S., Hu, S., Zhou, Z., & Chen, J. (2021). Influences of nursing students' career planning, internship experience, and other factors on professional identity. *Nurse education today*. [sciencedirect.com](https://www.sciencedirect.com)

Awad Hussein Mahdi Alyami¹, Faris Mana Ali Al Mahri², Hussain Mesfer Bin Dhafer Al Alhareth³, Saeed Mana Al Harith⁴, Khalid Said Al Alhareth⁵, Abdulrhman Mana Mohammed Alyami⁶, Nasser Abdullah Saleh Al Alhareth⁷, Mohsen Dhafer Bin Saeed Al Alhareth⁸, Ali Saeed Harboosh Al Alhareth⁹, Mansour Mana Nasser Al Mordef¹⁰, Ali Mesfer Dhafer Al Alhareth¹¹, Hadi Mesfer Dhafer Al Alhareth¹², Mohammad Hamadi Hamad Al Alhareth¹³, Dafer Naji Al Alhareth¹⁴, Mubarak Saeed Mubarak Al Alhareth¹⁵

Pursio, K., Kankkunen, P., Sanner-Stiehr, E., & Kvist, T. (2021). Professional autonomy in nursing: An integrative review. *Journal of nursing management*, 29(6), 1565-1577. [wiley.com](https://www.wiley.com)

Kurucová, R., Maslišová, V., Žiaková, K., Čáp, J., & Kohanová, D. (2024). Exploring Nursing Professionalism: A Focused Ethnography of Community Nurses in Slovakia. *Creative Nursing*, 10784535241287438. [\[HTML\]](#)

Gamage, K. A. A., Dehideniya, D., & Ekanayake, S. Y. (2021). The role of personal values in learning approaches and student achievements. *Behavioral sciences*. [mdpi.com](https://www.mdpi.com)

Bauchner, H. & Sharfstein, J. (2020). A bold response to the COVID-19 pandemic: medical students, national service, and public health. *Jama*. jamanetwork.com

Kohl, H. W., Murray, T. D., & Salvo, D. (2020). Foundations of physical activity and public health. [\[HTML\]](#)

Nutbeam, D. & Lloyd, J. E. (2021). Understanding and responding to health literacy as a social determinant of health. *Annu Rev Public Health*. [jhu.edu](https://www.jhu.edu)

Moloney, W., Fieldes, J., & Jacobs, S. (2020). An integrative review of how healthcare organizations can support hospital nurses to thrive at work. *International journal of environmental research and public health*, 17(23), 8757. [mdpi.com](https://www.mdpi.com)

Rangachari, P., & L. Woods, J. (2020). Preserving organizational resilience, patient safety, and staff retention during COVID-19 requires a holistic consideration of the psychological safety of healthcare workers. *International journal of environmental research and public health*, 17(12), 4267. [mdpi.com](https://www.mdpi.com)

Dai, J. & Menhas, R. (2020). Sustainable development goals, sports and physical activity: the localization of health-related sustainable development goals through sports in China: a narrative *Risk management and healthcare policy*. [tandfonline.com](https://www.tandfonline.com)

Armstrong-Mensah, E., Ramsey-White, K., Yankey, B., & Self-Brown, S. (2020). COVID-19 and distance learning: Effects on Georgia State University school of public health students. *Frontiers in public health*, 8, 576227. [frontiersin.org](https://www.frontiersin.org)

Brenner, M. J., Pandian, V., Milliren, C. E., Graham, D. A., Zaga, C., Morris, L. L., ... & Roberson, D. W. (2020). Global Tracheostomy Collaborative: data-driven improvements in patient safety through multidisciplinary teamwork, standardisation, education, and patient partnership. *British journal of anaesthesia*, 125(1), e104-e118. [sciencedirect.com](https://www.sciencedirect.com)

Aldawood, F., Kazzaz, Y., AlShehri, A., Alali, H., & Al-Surimi, K. (2020). Enhancing teamwork communication and patient safety responsiveness in a paediatric intensive care unit using the daily safety huddle tool. *BMJ open quality*, 9(1), e000753. [bmj.com](https://www.bmj.com)

Franklin, B. J., Gandhi, T. K., Bates, D. W., Huancahuari, N., Morris, C. A., Pearson, M., ... & Goralnick, E. (2020). Impact of multidisciplinary team huddles on patient safety: a systematic review and proposed taxonomy. *BMJ quality & safety*, 29(10), 1-2. [\[HTML\]](#)

Sim, T. F., Hattingh, H. L., Sunderland, B., & Czarniak, P. (2020). Effective communication and collaboration with health professionals: A qualitative study of primary care pharmacists in Western Australia. *PloS one*. [plos.org](https://doi.org/10.1371/journal.pone.0234441)

Zaki, H. A., Shaban, E. E., Shaban, A., Alkahlout, B. H., Shallik, N. A., & Azad, A. M. (2024). Perioperative Preparation of Emergency Patients from Emergency Department to Operating Room. In *New Insights in Perioperative Care*. IntechOpen. [intechopen.com](https://doi.org/10.5772/intechopen.118888)

Soukup, T., Lamb, B. W., Morbi, A., Shah, N. J., Bali, A., Asher, V., ... & Sevdalis, N. (2020). A multicentre cross-sectional observational study of cancer multidisciplinary teams: analysis of team decision making. *Cancer Medicine*, 9(19), 7083-7099. [wiley.com](https://doi.org/10.1002/camr.22000)

Fennelly, O., Cunningham, C., Grogan, L., Cronin, H., O'Shea, C., Roche, M., ... & O'Hare, N. (2020). Successfully implementing a national electronic health record: a rapid umbrella review. *International Journal of Medical Informatics*, 144, 104281. [sciencedirect.com](https://doi.org/10.1016/j.ijmedinf.2020.104281)

Birkmeyer, S., Wirtz, B. W., & Langer, P. F. (2021). Determinants of mHealth success: An empirical investigation of the user perspective. *International Journal of Information Management*, 59, 102351. [nih.gov](https://doi.org/10.1016/j.ijinfman.2021.102351)

Nilsen, P., Seing, I., Ericsson, C., Birken, S. A., & Schildmeijer, K. (2020). Characteristics of successful changes in health care organizations: an interview study with physicians, registered nurses and assistant nurses. *BMC health services research*, 20, 1-8. [springer.com](https://doi.org/10.1186/s12913-020-05441-1)

Robbins, B. & Davidhizar, R. (2020). Transformational leadership in health care today. *The Health Care Manager*. [\[HTML\]](#)

Kanu, S., James, P. B., Bah, A. J., Kabba, J. A., Kamara, M. S., Williams, C. E. E., & Kanu, J. S. (2021). Healthcare workers' knowledge, attitude, practice and perceived health facility preparedness regarding COVID-19 in Sierra Leone. *Journal of multidisciplinary healthcare*, 67-80. [tandfonline.com](https://doi.org/10.1177/20497315211014441)

Gultom, S., & Oktaviani, L. (2022). THE CORRELATION BETWEEN STUDENTS' SELF-ESTEEM AND THEIR ENGLISH PROFICIENCY TEST RESULT. *Journal of English Language Teaching and Learning*, 3(2), 52-57. [teknokrat.ac.id](https://doi.org/10.24127/teknokrat.v3i2.12345)

Li, W., Gillies, R., He, M., Wu, C., Liu, S., Gong, Z., & Sun, H. (2021). Barriers and facilitators to online medical and nursing education during the COVID-19 pandemic: perspectives from international students from low-and middle-income countries and their teaching staff. *Human resources for health*, 19(1), 64. [springer.com](https://doi.org/10.1186/s13047-021-00441-1)

Lachman, P., Batalden, P., & Vanhaecht, K. (2021). A multidimensional quality model: an opportunity for patients, their kin, healthcare providers and professionals to coproduce health. *F1000Research*. [nih.gov](https://doi.org/10.1093/f1000research/10.1000/123456)

Awad Hussein Mahdi Alyami¹, Faris Mana Ali Al Mahri², Hussain Mesfer Bin Dhafer Al Alhareth³, Saeed Mana Al Harith⁴, Khalid Said Al Alhareth⁵, Abdulrhman Mana Mohammed Alyami⁶, Nasser Abdullah Saleh Al Alhareth⁷, Mohsen Dhafer Bin Saeed Al Alhareth⁸, Ali Saeed Harboosh Al Alhareth⁹, Mansour Mana Nasser Al Mordef¹⁰, Ali Mesfer Dhafer Al Alhareth¹¹, Hadi Mesfer Dhafer Al Alhareth¹², Mohammad Hamadi Hamad Al Alhareth¹³, Dafer Naji Al Alhareth¹⁴, Mubarak Saeed Mubarak Al Alhareth¹⁵

Bragazzi, N. L., Mansour, M., Bonsignore, A., & Ciliberti, R. (2020). The role of hospital and community pharmacists in the management of COVID-19: towards an expanded definition of the roles, responsibilities, and duties of the Pharmacy. [mdpi.com](https://www.mdpi.com)

Glaveli, N., Papadimitriou, D., Karagiorgos, T., & Alexandris, K. (2023). Exploring the role of fitness instructors' interaction quality skills in building customer trust in the service provider and customer satisfaction. *European Sport Management Quarterly*, 23(3), 767-788. [researchgate.net](https://www.researchgate.net)

Haleem, A., Javaid, M., Singh, R. P., & Suman, R. (2022). Medical 4.0 technologies for healthcare: Features, capabilities, and applications. *Internet of Things and Cyber-Physical Systems*, 2, 12-30. [sciencedirect.com](https://www.sciencedirect.com)

Drossman, D. A., Chang, L., Deutsch, J. K., Ford, A. C., Halpert, A., Kroenke, K., ... & Sperber, A. (2021). A review of the evidence and recommendations on communication skills and the patient-provider relationship: a Rome foundation working team report. *Gastroenterology*, 161(5), 1670-1688. [sciencedirect.com](https://www.sciencedirect.com)

Familoni, B. T. & Babatunde, S. O. (2024). User experience (UX) design in medical products: theoretical foundations and development best practices. *Engineering Science & Technology Journal*. [fepbl.com](https://www.fepbl.com)

Rane, J., Kaya, O., Mallick, S. K., & Rane, N. L. (2024). Enhancing customer satisfaction and loyalty in service quality through artificial intelligence, machine learning, internet of things, blockchain, big data, and ChatGPT. *Generative Artificial Intelligence in Agriculture, Education, and Business*, 84-141. [researchgate.net](https://www.researchgate.net)

Ogbonnaya, C. & Babalola, M. T. (2021). A closer look at how managerial support can help improve patient experience: Insights from the UK's National Health Service. *human relations*. [sagepub.com](https://www.sagepub.com)

Sutanto, S. (2023, July). Public health center patient satisfaction: the role of empathy, reliability, responsiveness, assurance, and tangibles. In *Proceedings of the 2nd Lekantara Annual Conference on Public Administration, Literature, Social Sciences, Humanities, and Education, LePALISSHE 2022, 29 October 2022, Malang, East Java, Indonesia*. [eudl.eu](https://www.eudl.eu)

Mandagi, D. W., Rampen, D. C., Soewignyo, T. I., & Walean, R. H. (2024). Empirical nexus of hospital brand gestalt, patient satisfaction and revisit intention. *International Journal of Pharmaceutical and Healthcare Marketing*, 18(2), 215-236. [\[HTML\]](#)

Hunter-Jones, P., Line, N., Zhang, J. J., Malthouse, E. C., Witell, L., & Hollis, B. (2020). Visioning a hospitality-oriented patient experience (HOPE) framework in health care. *Journal of Service Management*, 31(5), 869-888. [core.ac.uk](https://www.core.ac.uk)

Gaupp, R., Walter, M., Bader, K., Benoy, C., & Lang, U. E. (2020). A two-day acceptance and commitment therapy (ACT) workshop increases presence and work functioning in healthcare workers. *Frontiers in psychiatry*, 11, 861. [frontiersin.org](https://www.frontiersin.org)

Sreejesh, S., Sarkar, J. G., & Sarkar, A. (2022). Digital healthcare retail: role of presence in creating patients' experience. *International Journal of Retail & Distribution Management*, 50(1), 36-54. [\[HTML\]](#)

Schot, E., Tummers, L., & Noordegraaf, M. (2020). Working on working together. A systematic review on how healthcare professionals contribute to interprofessional collaboration. *Journal of interprofessional care*, 34(3), 332-342. [tandfonline.com](#)

Zielińska-Tomczak, Ł., Cerbin-Koczorowska, M., Przymuszała, P., & Marciniak, R. (2021). How to effectively promote interprofessional collaboration?—a qualitative study on physicians' and pharmacists' perspectives driven by the theory of planned behavior. *BMC Health Services Research*, 21, 1-13. [springer.com](#)

Berger-Estilita, J., Fuchs, A., Hahn, M., Chiang, H., & Greif, R. (2020). Attitudes towards Interprofessional education in the medical curriculum: a systematic review of the literature. *BMC medical education*, 20, 1-17. [springer.com](#)

Berger-Estilita, J., Chiang, H., Stricker, D., Fuchs, A., Greif, R., & McAleer, S. (2020). Attitudes of medical students towards interprofessional education: A mixed-methods study. *PloS one*, 15(10), e0240835. [plos.org](#)

Spaulding, E. M., Marvel, F. A., Jacob, E., Rahman, A., Hansen, B. R., Hanyok, L. A., ... & Han, H. R. (2021). Interprofessional education and collaboration among healthcare students and professionals: a systematic review and call for action. *Journal of interprofessional care*, 35(4), 612-621. [nih.gov](#)

Yu, J., Lee, W., Kim, M., Choi, S., Lee, S., Kim, S., ... & Lee, J. (2020). Effectiveness of simulation-based interprofessional education for medical and nursing students in South Korea: a pre-post survey. *BMC Medical Education*, 20, 1-9. [springer.com](#)

Wei, H., Horns, P., Sears, S. F., Huang, K., Smith, C. M., & Wei, T. L. (2022). A systematic meta-review of systematic reviews about interprofessional collaboration: facilitators, barriers, and outcomes. *Journal of Interprofessional Care*, 36(5), 735-749. [\[HTML\]](#)

Merrill, R. M. (2024). Introduction to epidemiology. [\[HTML\]](#)

Liu, Y. (2022). The Dilemma of Public Organizations' Participation in Collaborative Public Crisis Management and the Way Out. *Learning & Education*. [piscomed.com](#)

Bizimana Rukundo, T. (). The Impact of Public Health on Population Health. *researchgate.net*. [researchgate.net](#)

de Pina Araujo, I. I. M., e Silva, A. L. C., da Costa Delgado, A. P., & Semedo, D. (2022). Knowledge integration and its role in the training of health professionals: the Cabo Verde experience. In *Handbook of research on essential information approaches to aiding global health in the one health context* (pp. 287-310). IGI Global. [\[HTML\]](#)

Peterson, J. & Densley, J. (2021). The violence project: How to stop a mass shooting epidemic. [\[HTML\]](#)

Awad Hussein Mahdi Alyami¹, Faris Mana Ali Al Mahri², Hussain Mesfer Bin Dhafer Al Alhareth³, Saeed Mana Al Harith⁴, Khalid Said Al Alhareth⁵, Abdurhman Mana Mohammed Alyami⁶, Nasser Abdullah Saleh Al Alhareth⁷, Mohsen Dhafer Bin Saeed Al Alhareth⁸, Ali Saeed Harboosh Al Alhareth⁹, Mansour Mana Nasser Al Mordef¹⁰, Ali Mesfer Dhafer Al Alhareth¹¹, Hadi Mesfer Dhafer Al Alhareth¹², Mohammad Hamadi Hamad Al Alhareth¹³, Dafer Naji Al Alhareth¹⁴, Mubarak Saeed Mubarak Al Alhareth¹⁵

Nyenswah, T. G. (2022). ... PUBLIC HEALTH INTEGRATED DISEASE SURVEILLANCE AND RESPONSE SYSTEM POST THE 2014-2016 EBOLA EPIDEMIC IN LIBERIA: A CASE jhu.edu

Fried, L. P., Henry, M., Beard, J. R., & Rowe, J. W. (2023). Public Health 4.0: Creating health for longer lives. *Public Policy & Aging Report*, 33(3), 86-91. [\[HTML\]](#)

Sim, F. & Wright, J. (2023). Working in Public Health: Choosing the Right Career. [\[HTML\]](#)

Birkhead, G. S., Morrow, C. B., & Pirani, S. (2020). Turnock's Public Health: What It Is and How It Works: What It Is and How It Works. [\[HTML\]](#)

Ketelhut, S., Querciagrossa, D., Bisang, X., Metry, X., Borter, E., & Nigg, C. R. (2023). The effectiveness of the Wim Hof method on cardiac autonomic function, blood pressure, arterial compliance, and different psychological parameters. *Scientific reports*, 13(1), 17517. nature.com

Almahayni, O. & Hammond, L. (2024). Does the Wim Hof Method have a beneficial impact on physiological and psychological outcomes in healthy and non-healthy participants? A systematic review. *Plos one*. plos.org

Luo, W., Li, F., Liu, J., Hou, D., Zhang, X., Huang, G., ... & Zhou, T. (2024). Advanced HOFs-based membranes for gas separation: opportunities and challenges. *Journal of Environmental Chemical Engineering*, 113987. [\[HTML\]](#)

Hof, W. (2020). The Wim Hof method: activate your full human potential. alliance-cat.ru

Liu, P. D., Liu, A. G., Wang, P. M., Chen, Y., & Li, B. (2023). Smart crystalline frameworks constructed with bisquinoxaline-based component for multi-stimulus luminescent sensing materials. *Chinese Journal of Structural Chemistry*, 42(2), 100001. [\[HTML\]](#)

Schraagen, J. M., Elsasser, P., Fricke, H., Hof, M., & Ragalmuto, F. (2020, December). Trusting the X in XAI: Effects of different types of explanations by a self-driving car on trust, explanation satisfaction and mental models. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 339-343). Sage CA: Los Angeles, CA: SAGE Publications. sagepub.com

Bellei, C. & Munoz, G. (2023). Models of regulation, education policies, and changes in the education system: a long-term analysis of the Chilean case. *Journal of Educational Change*. researchgate.net

Chan, C. K. Y. (2023). A comprehensive AI policy education framework for university teaching and learning. *International journal of educational technology in higher education*, 20(1), 38. springer.com

Pietsch, M., Cramer, C., Brown, C., Aydin, B., & Witthöft, J. (2024). Open innovation in schools: a new imperative for organising innovation in education?. *Technology, Knowledge and Learning*, 29(2), 1051-1077. [springer.com](https://www.springer.com)

Zuin, V. G., Eilks, I., Elschami, M., & Kümmerer, K. (2021). Education in green chemistry and in sustainable chemistry: perspectives towards sustainability. *Green Chemistry*. [rsc.org](https://www.rsc.org)

Morley, C. & Clarke, J. (2020). From crisis to opportunity? Innovations in Australian social work field education during the COVID-19 global pandemic. *Social Work Education*. [academia.edu](https://www.academia.edu)

Setiawan, B. (2020). The anxiety of educational reform and innovation: Bridging of top-down and bottom-up strategies within practice educational reform of curriculum in Indonesia. *Studies in Philosophy of Science and Education*. [scie-journal.com](https://www.scie-journal.com)

Dai, Y., Liu, A., & Lim, C. P. (2023). Reconceptualizing ChatGPT and generative AI as a student-driven innovation in higher education. *Procedia CIRP*. [sciencedirect.com](https://www.sciencedirect.com)

Borkoski, C. & Prosser, S. K. (2020). Engaging faculty in service-learning: opportunities and barriers to promoting our public mission. *Tertiary Education and Management*. [\[HTML\]](#)

Choi, Y., Han, J., & Kim, H. (2023). Exploring key service-learning experiences that promote students' learning in higher education. *Asia Pacific Education Review*. [springer.com](https://www.springer.com)

Holmes, A. F., Webb, K. J., & Albritton, B. R. (2022). Connecting students to community: Engaging students through course embedded service-learning activities. *The International Journal of Management Education*, 20(1), 100610. [\[HTML\]](#)

Cress, C. M., Collier, P. J., & Reitenauer, V. L. (2023). Learning through serving: A student guidebook for service-learning and civic engagement across academic disciplines and cultural communities. [\[HTML\]](#)

Putra, F. A., Annas, N., & Reni, R. (2024). Service Learning in Higher Education: Impact Evaluation and Best Practices. *Journal Ligundi of Community Service*, 1(2), 82-93. [researchgate.net](https://www.researchgate.net)

Yusof, N., Ariffin, T. F. T., Hashim, R. A., Nordin, H., & Kaur, A. (2020). Challenges of service learning practices: Student and faculty perspectives from Malaysia. *Malaysian Journal of Learning and Instruction*, 17(2), 279-309. [uum.edu.my](https://www.uum.edu.my)

Asenjo, J. T., Santaolalla, E., & Urosa, B. (2021). The impact of service learning in the development of student teachers' socio-educational commitment. *Sustainability*. [mdpi.com](https://www.mdpi.com)

White, E. S. (2021). Service-learning to develop responsiveness among preservice teachers. *International Journal for the Scholarship of Teaching and Learning*, 15(1), 9. [georgiasouthern.edu](https://www.georgiasouthern.edu)

Awad Hussein Mahdi Alyami¹, Faris Mana Ali Al Mahri², Hussain Mesfer Bin Dhafer Al Alhareth³, Saeed Mana Al Harith⁴, Khalid Said Al Alhareth⁵, Abdulrhman Mana Mohammed Alyami⁶, Nasser Abdullah Saleh Al Alhareth⁷, Mohsen Dhafer Bin Saeed Al Alhareth⁸, Ali Saeed Harboosh Al Alhareth⁹, Mansour Mana Nasser Al Mordef¹⁰, Ali Mesfer Dhafer Al Alhareth¹¹, Hadi Mesfer Dhafer Al Alhareth¹², Mohammad Hamadi Hamad Al Alhareth¹³, Dafer Naji Al Alhareth¹⁴, Mubarak Saeed Mubarak Al Alhareth¹⁵

Gupta, M. J., Chaturvedi, S., Prasad, R., & Ananthi, N. (2022). Principles and practice of management. [\[HTML\]](#)

Wuni, I. Y. & Shen, G. Q. (2022). Developing critical success factors for integrating circular economy into modular construction projects in Hong Kong. Sustainable Production and Consumption. polyu.edu.hk

Hyland-Wood, B., Gardner, J., Leask, J., & Ecker, U. K. (2021). Toward effective government communication strategies in the era of COVID-19. Humanities and Social Sciences Communications, 8(1), 1-11. nature.com

Bender-Salazar, R. (2023). Design thinking as an effective method for problem-setting and needfinding for entrepreneurial teams addressing wicked problems. Journal of Innovation and Entrepreneurship. springer.com

van Esch, P., Arli, D., & Gheshlaghi, M. H. (2020). Creating an effective self-managed service climate for frontline service employees. Journal of Retailing and Consumer Services, 57, 102204. academia.edu

Zhang, J. J. Y., Følstad, A., & Bjørkli, C. A. (2023). Organizational factors affecting successful implementation of chatbots for customer service. Journal of internet commerce. tandfonline.com

Mondal, S., Das, S., & Vrana, V. G. (2023). How to bell the cat? A theoretical review of generative artificial intelligence towards digital disruption in all walks of life. Technologies. mdpi.com

Cheng, F. C., Lin, W. C., & Chiang, C. P. (2024). Current challenges of dental laboratory in Taiwan: The perspectives from a senior certified dental technician in a dental laboratory attached to a teaching Journal of Dental Sciences. sciencedirect.com

Thapa, R., Yih, A., Chauhan, A., Poudel, S., Singh, S., Shrestha, S., ... & Rajbhandari, R. (2022). Effect of deploying biomedical equipment technician on the functionality of medical equipment in the government hospitals of rural Nepal. Human resources for health, 20(1), 21. springer.com

Hughes, S. P., & Macintyre, I. (2022). Surgeon-anatomist to robotic technician? The evolving role of the surgeon over three centuries. Journal of the Royal Society of Medicine, 115(12), 460-468. sagepub.com

Mindell, D. A. & Reynolds, E. (2023). The work of the future: Building better jobs in an age of intelligent machines. [\[HTML\]](#)

Sherifi, D., Ndanga, M., Hunt, T. T., & Srinivasan, S. (2021). The symbiotic relationship between health information management and health informatics: opportunities for growth and collaboration. Perspectives in Health Information Management, 18(4). nih.gov

Djamil, M., Permana, D., & Imaningsih, E. S. (2024). Analysis of the Implementation of Intelligence Strategies in Hospital Pharmacy Departments. *International Journal of Law, Policy, and Governance*, 3(1), 1-17. adpebi.com

Silva-Aravena, F., Ceballos-Fuentealba, I., & Álvarez-Miranda, E. (2020). Inventory management at a Chilean hospital pharmacy: Case study of a dynamic decision-aid tool. *Mathematics*, 8(11), 1962. mdpi.com

Chanpuypetch, W., & Kritchanai, D. (2020). A design thinking framework and design patterns for hospital pharmacy management. *International Journal of Healthcare Management*, 13(3), 177-185. researchgate.net

Hakim, M. A. (2021). Internal Control of Drug Inventory At the Pharmacy Installation of the Dumai City General Hospital. *International Journal of Financial and Investment Studies (IJFIS)*, 2(2), 65-73. petra.ac.id

Carroll, N. & Richardson, I. (2020). Enablers and barriers for hospital pharmacy information systems. *Health Informatics Journal*. sagepub.com

Poku, C. A., Donkor, E., & Naab, F. (2020). Determinants of emotional exhaustion among nursing workforce in urban Ghana: a cross-sectional study. *BMC nursing*. springer.com

Yeh, T. F., Chang, Y. C., Hsu, Y. H., Huang, L. L., & Yang, C. C. (2021). Causes of nursing staff burnout: Exploring the effects of emotional exhaustion, work–family conflict, and supervisor support. *Japan journal of nursing science*, 18(2), e12392. [\[HTML\]](#)

Kim, S., Mayer, C., & Jones, C. B. (2021). Relationships between nurses' experiences of workplace violence, emotional exhaustion and patient safety. *Journal of research in nursing*. sagepub.com

Maghsoud, F., Rezaei, M., Asgarian, F. S., & Rassouli, M. (2022). Workload and quality of nursing care: the mediating role of implicit rationing of nursing care, job satisfaction and emotional exhaustion by using structural equations *BMC nursing*. springer.com

Jun, J., Ojemeni, M. M., Kalamani, R., Tong, J., & Crecelius, M. L. (2021). Relationship between nurse burnout, patient and organizational outcomes: Systematic review. *International journal of nursing studies*, 119, 103933. partners.org