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Collaboration between Public Health Specialist, Pharmacy Technician, Nursing Technician, Laboratory Medicine, and Health Education Specialist in Enhancing Medication Safety

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ABSTRACT

Background: Positive interactions between two or more health care experts who contribute their special knowledge and skills to help patients make health-related decisions are referred to as interdisciplinary collaboration. It became widely accepted to raise the standard of healthcare in the 1960s and has remained so ever since. It also makes it easier for patients to receive medical services and improves the coordination of care. Medical practitioners gain a great deal from this medical care delivery paradigm as well. These include a lower chance of professional burnout syndrome and increased job satisfaction.

Aim: The aim of this review was to explore the integration of public health specialists, nursing and pharmacy technicians,l aboratory technicians and health education in primary health care and its impact on patient outcomes.

Methods: Using the search phrases laboratory, nursing, technicians, and pharmacy, patient, public health specialist, health Education, we carried out an extensive search of the electronic literature contained in the MEDLINE database. Restricting the search to articles from 2018 to 2024 allowed us to find pertinent content. To find and read scholarly articles related to our topic, we conducted a Google Scholar search. Certain inclusion criteria influenced the articles' selection.

Results and conclusion : The publications analyzed in this review emphasize that the crucial role of public health specialist, pharmacy technicians, nursing technician, laboratory medicine and health educator in collaboration of health care and their role enhance medication safety and patient outcomes in addition to their contribution has the role to lowchance of professional burnout syndrome and increased job satisfaction of health care team.

Keywords: pharmacy technician – laboratory – nursing technician –health educator –public health specialist

INTRODUCTION

Healthcare professionals (HCPs) such as physicians, pharmacists, nurses, public health specialists and technicians frequently keep an eye on patients with chronic conditions in hospital settings. The poor and even nonexistent collaboration between different healthcare professionals is a problem for health systems. Interruptions in patient care are caused by discord in the collaboration and lack of coordination amongst HCPs. A triangle is formed when patients consult with many physicians for advice. Poor collaboration and communication between healthcare professionals and patients can have negative effects like divided

responsibilities, disrupted care, and treatment delays. 2018 saw the World Health Organization (2018) cite a declaration on collaborative practice issued by the World Health Professions Alliance (WHPA). Effective collaborations can improve coordination between medical staff, patients, and families, allowing people to take an active role in their care. This results in a safer healthcare system, happier medical staff, and the best possible use of available resources. In the end, fruitful collaborations can improve patient satisfaction, raise the bar for medical care, and improve patients' general health. Furthermore, collaboration across HCPs may also be advantageous for patient management and achieving treatment goals. However, there is still a lack of evidence to support this assertion. There are no clear meanings for the terms "interdisciplinary collaboration," "interprofessional collaboration," "multidisciplinary collaboration," and "multiprofessional collaboration" in the literature, hence they are frequently used synonymously. In the 1970s, Stone et al. coined the phrase "interdisciplinary collaboration" to refer to the idea of inter professionalism, which emerged from studies suggesting that better coordination and collaboration within healthcare systems might potentially save lives (Konrad, 2020). One definition of interdisciplinarity is the fusion of distinctive components from two or more fields. Discipline is an extensive body of well-organized information. Stringent disciplines include specialties including infectiology, general medicine, and psychiatry. A career is the combination of one or more academic fields with a range of skills, including complex knowledge in certain situations. Al Sayah et al. (2014) assert that the profession entitles one to pay and a social position. Practitioners and academics use the term "interdisciplinary" frequently. In recent years, the idea of "interprofessional collaboration" has gained increased importance in recent years. According to the WHO, "interprofessional collaboration" consists of two components: a patient-centered collaboration including these professionals and an educational strategy that incorporates many professions working together. Interprofessional education describes a scenario in which two or more professions receive joint training and develop the abilities necessary for productive collaboration. According to Kanji et al. (2017), this partnership subsequently improves the caliber of care given. "Multi" and "inter" are prefixes that indicate the type or extent of collaboration. According to Bell and Fredland (2020), the word "inter" describes the blending of the expertise and experience of various healthcare professionals. This involves active communication, chances for discussion, and information sharing. A common goal and a single method of decision-making are shared by the well-organized team. Health care providers (HCPs) who work together on a project but also separately or concurrently are called "multi" practitioners.Without being together, they coordinate their actions.

METHODS

A thorough search was carried out on known scientific platforms, including Google Scholar and Pubmed, using specific keywords such as laboratory, nursing, public health professional, pharmacy technician, patient, and management. The goal was to collect all pertinent research publications. The articles were selected based on specific criteria. After a thorough examination of each publication's abstracts and prominent titles, we excluded case reports, duplicate studies, and publications without complete information.

RESULT AND DISCUSSION

Collaboration among nursing technicians, pharmacy technicians, public health specialists, laboratory medicine professionals, and health educators is critical for providing comprehensive and effective care. Each of these roles makes a unique contribution to patient care and health outcomes. Nursing technicians ensure that treatments are administered correctly and provide necessary bedside care. Pharmacy technicians oversee pharmaceutical preparation and distribution to ensure safety and accuracy. Public health specialists work to prevent disease and promote health through community programs. Professionals in laboratory medicine give precise diagnostic data to help doctors make informed decisions. Health educators play a vital role in increasing health literacy and preventative care. These experts work together to create a coherent healthcare team that prioritizes patient safety, reduces errors, and improves overall healthcare results

Role of Public health specialists

specialists in public health have high positions in management or strategy, or in specialized fields like epidemiology, where they lead systems. Before beginning a five-year training program covering every facet of public health, they come from a variety of successful professional careers. They must maintain their registration through revalidation and appraisal. They possess both technical expertise and leadership qualities. There are three "domains" of public health in which public health practitioners work: Enhancing health by concentrating on disparities, broader health determinants (schooling, housing, jobs, and communities), and risk factors like alcohol, tobacco, and obesity; additionally, surveillance and monitoring of diseases, risk factors, needs assessments, equity audits, and impact assessments are important. The focus of health protection is on environmental health hazards, chemicals, radiation, flu, meningitis, and other infectious diseases. It also includes immunizations, vaccinations, screening and immunizations, major accidents, and environmental health hazards. An emphasis on ensuring services satisfy population needs (prioritization), are correctly planned, of

high quality, egalitarian, and efficient (return on investment) is known as healthcare public health, often referred to as health and social care quality. Specialist abilities like health intelligence, building an evidence base, epidemiology, health economics, audit, and research, as well as interpersonal abilities like communication, teamwork, management, and leadership, serve as their foundation. In the UK, there are 1,500 specialists. Around 1,200 of these are in England, 200 in Scotland, 70 in Wales and 50 in Northern Ireland. In England, the NHS (~5%), universities (~15%), public health England (~35%), and local authorities (~45%) all employ them. They are typically employed by the NHS in Scotland, Public Health Wales in Wales, and the Public Health Agency in Northern Ireland.During their career, public health professionals may switch organizations and pursue multiple areas of specialization. All of them may still function in any field, though, should the necessity arise—for instance, in the event of a flu epidemic. A specialist is needed for a limited number of statutory positions, such as director of public health (DPH) and in some health protection domains. Their unique contribution is Their exceptional technical knowledge and skill set, coupled with their leadership and managerial abilities, give them a special set of abilities that are crucial for enhancing population health and wellbeing. They possess the ability to interpret intricate data from several sources and communicate with a broad spectrum of viewers. Theycan address any issue pertaining to public health at the moment and act fast to address emerging risks. They Serve as system leaders for various organizations; they possess the credibility, knowledge, and ability to create new networks when required.(The Unique Contribution of Public Health Specialists 1 What Are Public Health Specialists? n.d.)n.d.)

Role of laboratory medicine in patient management

Improving lab findings is the responsibility of laboratory specialists, and this promotes collaborative healthcare. Patient engagement has increased due to the information and technology revolutions, which has also enhanced patient-centered healthcare. This paradigm is made possible by the usage of online health activities, such as scheduling appointments and obtaining medical information. To improve patient health management and promote informed decision-making, the core principles include information sharing, active participation, andaccountability. The collaborative efforts oflaboratory, nursing, pharmacy technician, and medical devices in patient management are critical. From Diagnosis to Treatment.

1.Assisting the patient's requirements

In 1978, the Alma-Ata Declaration—which promoted the participation of individuals and groups in the process of organizing and implementing healthcare initiatives—was formally acknowledged by the World Health Organization (WHO). In order to enable patients and their medical providers to make educated decisions together, primary health care encourages community involvement and self-sufficiency (World Health Organization, 2019). No two patients are the same or similar. More accountability for one's own health is being pushed for by everyone these days. However, many patients require lifelong learning to self-manage their health due to the large variety of chronic illnesses they suffer from.It is imperative to provide patients with assistance in understanding the terminology utilized while explaining test results. For example, what does "normal" mean? Does this fall inside the usual range for the subject in question or the general population? It is best practice to provide the patient with the exact reading or outcome and not just a description, or possibly both. Considering research demonstrating the importance of patients being informed of results, even if they are negative, this also includes giving a negative outcome (Gao et al., 2020). The electronic era makes it possible to share and discuss patient medical records, which is the greatest way to facilitate shared decision making in the healthcare industry. According to Watson et al. (2018), laboratory medicine specialists ought to help general practitioners (GPs) who utilize their services by offering educational support and putting patient-centered care policies into place. Patients can schedule appointments, purchase repeat prescriptions, examine electronic health records, and view clinical communication using online services that are accessible to all certified general practitioners. Less than 1% of patients actually use it, yet 60% of them are able to read their complete electronic health record. Patient safety and care quality may both be enhanced by this strategy. GPs do, however, face concerns including increased workload, litigation, inadequate benefit understanding, and problems related to confidentiality and privacy. It has been suggested that "responsible sharing" will increase the use of online services in general practice settings. Strong consent procedures, a help line, practice-based materials, various patient dialogues, reporting capabilities, finance for change management, and continuous support are all included in this. By offering instructional materials, reporting tools, access to interpretation and clinical liaison, and managed point of care testing (POCT), laboratory medicine specialists are crucial in creating and implementing "responsible sharing" (Watson et al., 2018).

1.2 supporting HCPs in their use of hospital laboratory services

Hospital physicians are key players in collaborative healthcare because they select the range of tests and investigations that a laboratory medicine service offers. The clinical specialties supported and the ratio of acute to non-acute care impact the repertoire. To improve the standard of care given by hospital physicians, close coordination between clinical leaders in each discipline and laboratory medicine specialists isnecessary. Working together will bring new perspectives to the compilation of works and strengthen the significance of

laboratory medicine for patients (Florkowski et al., 2017). The clinical laboratory should regard service delivery as a component of a tripartite collaboration. Intensive Care Unit (ICU), Accident and Emergency (A&E) department, and POCT implementation. The clinic might transmit patient results more quickly than the central laboratory. Clinical laboratory findings are expected to be precise and coherent by medical experts. A lot of people don't realize how important the pre-analytical stage is for guaranteeing quality, even though they have some control over it (Cornes et al., 2016). They might not be aware that variations in approaches could affect the ability to generalize the findings to new contexts and the acceptance of national clinical practice guidelines locally. As part of collaborative healthcare, laboratory medicine professionals should consult with hospital physicians regarding the standardization of procedures and the ability to monitor outcomes (Beastall et al., 2017). Senior medical staff members at hospitals are aware of the clinical value of laboratory data in their field. Younger doctors and other medical personnel might want assistance in evaluating results. Support could come in the form of professional laboratory commentary on reports, phone calls from the lab, and on-demand discussions of results. There is proof that interpretation enhances the promptness and caliber of diagnosis. An important competency is agreement on interpretation support details between hospital physician users and clinical laboratory users. Consistency in delivery must be agreed upon. When addressing important results, the lab should take the initiative (Piva et al., 2017). Effective communication is essential for clinical laboratories and hospital users to collaborate effectively. Experts in laboratory medicine are urged to join multidisciplinary clinical networks or teams so they may discuss policies and practices, examine case studies, and implement

Role of Technicians in Patient Management

Sharing and discussing patient medical data, enabled by electronic health technologies, is the most efficient approach to achieve shared decision-making in the healthcare industry. Medical device technicians are essential to maintaining the proper operation of therapeutic and diagnostic equipment, which has a direct impact on patient outcomes. The devices used for patient monitoring, diagnosis, and treatment are maintained, repaired, and calibrated by them, guaranteeing that medical teams have dependable instruments for providing precise care.(Abdullah Fares Abanami et al., 2022)

Role of Pharmacy technicians.

The absence of necessary education and training has prevented pharmacy technicians from playing a larger role, which has been driven by concerns for public safety. State licensure, registration, or certification requirements have increased in the last few years for those wishing to work as pharmacy technicians. Drugstore technicians now have more responsibilities because of these regulations growing. Research shows that pharmacy technicians can conduct screenings waived by the Clinical Laboratory Improvement Amendments (CLIA), administer vaccinations, and verify technician accuracy. Pharmacy technicians are being used for more creative purposes in addition to conventional ones, like gathering drug data in tele pharmacy and primary care settings. There is a lengthy history of pharmacy technicians working in the field. During World War II, in or around 1939, the first official position for pharmacy technician was created. Two except for employer-sponsored training programs, these technicians were high school graduates with no formal training, much like many pharmacy technicians today. Their primary responsibility was to support the pharmacists daily. Because they didn't want to pay for more staff and were afraid that pharmacy technicians would take their jobs, pharmacists were hesitant for a long time to hire more pharmacy technicians. Pharmacists in the health system started to take on a more clinical role in the 1960s and 1970s, and automation increased in pharmacy operations. Pharmacy technicians now have more structured roles because of these advancements, especially in hospital settings. Community-based pharmacy technicians now have different responsibilities and standards in each state. Pharmacy technicians must currently receive a license, certification, or registration from several districts, yet the qualifications for these titles vary across the US. Registration is defined as "making a list of pharmacy technicians in the state or of being enrolled in an existing list" by the Pharmacy Technician Certification Board (PTCB), while licensure is defined as "the process by which an agency of government grants permission to an individual to engage in a given occupation upon recognition that the applicant has attained the minimum competency necessary to ensure that the public health, safety, and welfare will be reasonably well protected. State-specific procedures and language nevertheless differ in order to hold these designations, even if these definitions aid in the national differentiation between registration and licensure. Roles like registered technician, certified technician, licensed technician, as well as entry-level and advanced technician, vary throughout states. Pharmacy technicians must complete education or training requirements in order to be registered in many states, which resemble licensing standards. For instance, pharmacy technicians must be at least eighteen years old, have a high school diploma or GED, submit to a criminal background check, and complete an approved education program in order to work in Indiana and Ohio. Despite sharing the same requirements, Ohio pharmacy technicians are referred to as "registered technicians," while Indiana pharmacy technicians are called "licensed technicians." In addition to the differences in qualifications for becoming a pharmacy technician, pharmacy technicians' jobs also vary. The conventional job in all states includes inputting prescriptions into a

pharmacy computer, calculating pills, and attaching labels.As pharmacy increases the function of the pharmacy technician, they are given non-traditional responsibilities such as taking called-in prescriptions, reviewing the work of other technicians, and providing vaccines. Allowing pharmacy techs to take on these non-traditional duties will allow pharmacists more time to conduct patient care activities not linked with dispensing and enhance revenue.

Pharmacy technicians as pharmacist extenders

Pharmacists should use pharmacy technicians as extenders to broaden the scope of their profession. As community-based pharmacists take on new tasks, they are expected to do more with less time by offering a greater range of health services while completing traditional dispensing for more patients. Pharmacists can spend more time with patients and provide clinical services if they make full use of pharmacy technicians. The term "technicians as pharmacist extenders" refers to the utilization of pharmacy technicians across their whole scope of practice to assist pharmacists in reaching more patients, improving clinical outcomes, and increasing revenue. Pharmacy technicians' full scope includes typical dispensing support as well as non-traditional tasks such as vaccination administration, technician accuracy monitoring, and facilitation of CLIA-waived testing. Studies have demonstrated that pharmacy technicians can execute these non-traditional jobs while being just as safe and precise as pharmacists, allowing pharmacists to spend more time in the clinical role. Pharmacy technicians have recently been given increased responsibility for two areas: providing vaccines and assessing technician accuracy. Currently, only three states, Rhode Island, Idaho, and Utah, allow pharmacy technicians to give all immunizations recommended by the United States Centers for Disease Control and Prevention (CDC). There are currently no studies that demonstrate the direct benefit of pharmacy technicians giving immunizations; nevertheless, the pharmacy profession can extrapolate anecdotal data from physician and other medical practice models. In these practice models, physicians frequently delegate vaccination administration to medical assistants and nurses who have comparable or less training than pharmacy technicians. While further research is needed to establish the real economic and clinical benefit of pharmacy technicians giving vaccinations, with millions of immunizations delivered to patients each year, the pharmacists' time saved is the greatest advantage. Another duty that is becoming more popular as part of a pharmacy technician's overall scope of practice is accuracy checking. Technician accuracy checking (TAC) is defined as using technology to verify someone else's job, such as an automated dispensing system or other technology-assisted filling equipment. One type of accuracy check is having a technician ensure that the current product and quantity were distributed by an automated dispensing unit. Currently, 20 states allow TAC, either through a pilot program or because it has been approved by the board, however 10 only allow it in outpatient settings. There have been 11 studies on TAC in the inpatient context, all of which reveal that technicians were as accurate, if not more so, than pharmacists in checking the accuracy of administered medication. Four studies in the community indicated that technicians are equally as accurate as pharmacists when it comes to accuracy checks. A study conducted by University of Wisconsin researchers discovered that technicians are 99.95% correct, whereas pharmacists are 99.74% accurate.9 Another study examining overall errors as well as administrative and patient safety issues discovered no statistically significant difference between pharmacists and pharmacy techs.10 In addition to technicians being equally precise as pharmacists, two studies indicated that by enabling technicians to check prescriptions, pharmacists had more time, equivalent to nearly 23 days a year, to conduct other direct patient care responsibilities during the day. The increased time in direct patient care allowed the pharmacist to spend much more time educating patients on medication and evaluating proper drug utilization.Helping pharmacists with the medicine dispensing procedure is one of a pharmacy technician's duties. They work closely with pharmacists to correctly measure, count, label, and package prescribed medications for patients. They make sure that the right drugs are delivered in the right dosage and package by adhering to stringent standards and criteria. Keeping Track of Stock and Placing Purchases Every pharmacy needs effective inventory management to run successfully. Pharmacy technicians are in charge of keeping an eye on stock levels, remembering when products expire, and placing orders for supplies when they run low. To guarantee a sufficient supply of drugs and other pharmaceutical products, they work with suppliers and pharmaceutical firms.Managing Customer Payments and Processing Insurance Claims Paying customers and managing insurance claims are frequent responsibilities for pharmacy techs. In order to accurately and quickly process claims, they collaborate closely with patients and possess extensive understanding of various insurance plans. They also offer advice on copayments and other payment options, as well as help clients comprehend their insurance coverage. Their expertise with insurance processes guarantees patients a smooth experience while meeting legal and billing obligations.they have a crucial role in Managing Customer Payments and Processing Insurance Claims, Paying customers and managing insurance claims are frequent responsibilities for pharmacy techs. Toprocess claims accurately and quickly, they collaborate closely with patients and possess an extensive understanding of various insurance plans. They also offer advice on copayments and other payment options, as well as help clients comprehend their insurance coverage. Their expertise with insurance processes guarantees patients a smooth experience while meeting legal and billing obligations. They are also responsible for Serving Clients and Responding to Questions, providing

outstanding customer service is a crucial part of a pharmacy technician's job description. They answer questions about prescription drugs, dosages, combinations, and over-the-counter items in their regular interactions with patients and medical professionals. Pharmacy technicians can deliver accurate and trustworthy information since they have a thorough understanding of pharmaceuticals.reate a welcoming and encouraging environment in the pharmacy by interacting with clients politely and professionally. In the healthcare sector, maintaining accurate records is essential, and pharmacy technicians are key players in the upkeep of patient profiles and drug data. They update patient data with great care, taking into account current drugs, allergies, and medical history. By doing this, it is made sure that pharmacists have the knowledge they need to decide wisely and avoid any negative reactions or drug interactions. When handling sensitive patient data, pharmacy technicians put privacy regulations first and prioritize maintaining confidentiality.There are several significant tasks and obligations that pharmacy technicians must perform. They play an essential role in supporting the overall operations of a pharmacy, helping pharmacists with medicine dispensing, inventory management, insurance claim processing, offering first-rate customer service, and keeping accurate records. The commitment and proficiency they possess help to guarantee that patients receive medications in a secure, effective, and dependable manner. Accuracy and meticulousness are crucial in the pharmacy industry. It is imperative that pharmacy technicians make sure patients receive the appropriate prescription and dosage. While competent technicians can help pharmacists identify potential errors, the pharmacist is ultimately the most important stakeholder. If this isn't done, patients may be in danger and face dire repercussions.According to a cross-sectional survey,A standardized questionnaire was used to administer a cross-sectional study to one hundred pharmacy technicians. Using a 3-point Likert scale, participants' involvement in pharmaceutical care practices was evaluated by descriptive analysis utilizing SPSS version 24.0. P was significant at 0.05.they found that 44 (60.3%) of the 73 (73.0%) PTs that took part in the study worked in hospitals. Nearly all seventy-nine (94.9%) had heard of PC before. Sources of knowledge were connected with site of practice ($p = 0.001$), highest degree ($p = 0.003$) and age ($p = 0.000$). Only a quarter 21 (28.8%) indicated it was patient centered. Most frequently helped with dispensing or counseling 62 (84.9%). More than half frequently started pharmaceutical care 43 (58.9%), helped manage patients' medication information 49 (67.1%), gave responsible guidance on over-the-counter medications 50 (68.5%), and responded to inquiries about drug interactions and side effects 40 (54.8%). Talking about potential changes in therapy 21 was the task that was completed the least frequently (34.2%). Significant variations were seen in the frequency of patient/client intake between community PTs and hospital PTs differed significantly in how often they saw patients/clients for PC ($p = 0.026$) and how often they helped with dispensing/counselling ($p = 0.018$).A variety of information sources were noted, and this was connected to particular sociodemographic. PTs frequently engaged in several PC tasks, and variations in these activities' application across practice areas were observed.(Taylor & Mehta, 2020)(Creative Inc & Design, 2010)(Abdullah Fares Abanami et al., 2022)

Role Of Nursing Technicians

The healthcare environment and the function of nurse technicians in the healthcare team are always evolving. There is no longer any belief that nurse technicians are just medical assistants. On the other hand, modern nurse technicians impact healthcare results in a major way and greatly enhance the overall patient experience. Because of their comprehensive approach, clinical knowledge, and empathy, nurse technicians have also become significant players in the delivery of patient-individualized care. Nurse technologists' evolving roles in patient care are characterized by increased autonomy and decision-making authority. Nowadays, nurse technicians are not limited to following precise standards but are actively involved in the planning, evaluating, and coordination of treatment.

Having nurse technician educators or learning programs, on the other hand, can help improve the responsibilities and contributions that nurse technicians make to the health team and communication techniques, which will ultimately improve the care that nurses' technicians provide.According to a study conducted in the UK by James et al. (2010), most patient observations were made by nursing assistants (technicians), who gave vital signs and early warning scoring systems significant weight during the assessment process. The study evaluated the nurse technician's contributions in the general ward setting as a recognizer, responder, and recorder using a pilot study (questionnaire, knowledge sheet). Approximately 50% of respondents believed that employing touch during the assessment process was necessary, while 42% of ward care members were distracted by the demands of other patients and 45% weren't. 83 percent of respondents felt that there was sufficient staffing to support this process, and the Early Warning Score (EWS) was utilized. The nursing technician seems to have misinterpreted the instrument's intended use, nevertheless.A constructivist methodology was used with the critical incident technique (CIT). Close patient proximity was something that both registered and practicing nurse specialists (Seaton et al., 2011) sought after because they believed it enhanced patient care continuity, their capacity to understand patients' needs, and their ability to provide holistic care. The use of nurse assistant technicians in the provision of direct patient care has been shown to limit the intimate proximity between nurses and patients, so adversely affecting the development of patient rapport and communication. LPNs and RNs were also under pressure because they believed they were unable to provide patients with the care they required.Dahlke and

Baumbusch's (2015) study used qualitative analysis based on data collected from two hospital facilities in western Canada to explain how nurses cared for hospitalized older adults within nursing teams. It also showed that nurse technicians could and should contribute in different ways to the nursing team, with the general consensus being that their primary responsibility was to perform physical tasks that did not need to be completed during a shift, unlike registered nurses. Educating teams about roles and communication strategies can also help the nursing care team, and educators and leaders can help the nursing care team reevaluate their collaborative methods in order to improve nursing care. It was challenging for the nursing technician to determine which nursing tasks were exclusively within their responsibility. They said that their main duty was to support regulated nurses, or registered nurses and practitioner nurses. The commitmentState that they felt it was acceptable to put off the duties they were performing without jeopardizing the patients' safety. Dahlke and Baumbusch (2015). Multidisciplinary healthcare teams require nurse technicians as vital members. Their ability to effectively collaborate and communicate with other medical specialists ensures seamless care coordination and promotes continuity across settings. Nurses act as their patients' advocates by encouraging communication and ensuring that patients' views are taken into consideration when making decisions. This collaborative approach raises the bar for overall care delivery and fosters a patient-centered culture.Since nurse technicians work under the supervision of nursing specialists and support them, there aren't many studies that highlight their role. However, their presence in a facility has a favorable influence on patient care and improves the quality of care since more healthcare providers provide different roles for nurses in the care process, although there is conflicting evidence about any detrimental effects on rising patient intervention costs. The members of the nursing team found it difficult to distinguish themselves from one another and identify their roles. All nurses acknowledged that the RN had the most responsibility, nevertheless. Registered Nurses believed that their work closely related to giving patients safe, thorough treatment. In the minds of nurse technicians, their work was routine.(Sahen Alanazi et al., 2022)(Abdullah Fares Abanami et al., 2022)

Role of Health Education Specialist

Health education is the primary and, at the same time, essential component of complementary health promotion. Health education assumes that inter-subject variability has a substantial impact on individual and community health, which can be positively influenced by educational interventions. Transferring knowledge, influencing attitudes, and acquiring skills can help patients cope with health difficulties, leading to improved well-being and recovery. Patient education benefits both clinical and social outcomes, making it a crucial component of providing high-quality healthcare. Health education is a key role in shaping long-term health policies, perhaps leading to cost savings in healthcare. Recently, there has been a growing emphasis on preventive and instructional healthcare practices. Family medicine has a crucial role in fostering health-oriented attitudes within an organized system. Patients believe that medical personnel are the finest and most dependable source of health information. Primary care physicians play a crucial role in promoting health and preventing disorders in society. Modern health education aims to foster change and empower individuals and groups to take independent health actions at many levels of society. Health-related education is not new. Poland has been implementing preventive programs in schools since 1982, following standards developed by experts. Health education programs are effectively implemented in schools, taking into account experience and protection techniques. The health-Friendly School aims to promote healthy attitudes and reduce disease occurrence in society. Health education is now integrated into all health and strategy programs at all levels of society, including families, schools, workplaces, towns and cities, regions, and worldwide communities. Examples of national health programs include the White Paper - Together for Health (2007-2015), the National Health Programme against Diseases of Affluence, the National Health Program for Fighting Cancer, the Strategy of Development of Healthcare in Poland, the Strategy of Changes in Healthcare, and UNESCO's recommendation for comprehensive health education in schools. In affluent countries, there is a growing emphasis on preventive and educational healthcare due to the challenges of fast expanding health problems. The education for change model considers multiple causes of disease, including behavioral, social, economic, and political factors. It emphasizes the need for educational health programs at three levels: individual, community, and society. Family medicine plays a crucial role in developing health-related behavior. Medical professionals are trusted to provide accurate health information. Primary care physicians play a crucial role in promoting health and preventing disorders in society. In healthcare contracts, a family physician's job extends beyond treating to preventing and educating patients. Adding these responsibilities to family medicine's competency is becoming increasingly important, particularly in the context of long-term health policies. Obstacles such as healthcare organization, patient collaboration, and time constraints make it challenging for family physicians to perform their instructional function. Health education and preventive measures are increasingly important in healthcare management methods due to the current state of society's health and demographics. Educating patients offers clinical and societal benefits. Transferring knowledge, influencing attitudes, and acquiring skills might help patients cope with health issues, leading to improved mood, satisfaction, and recovery [15,16]. Health education is seen as essential for providing high-quality healthcare. Research shows that health education, together with other health promotion measures,

can reduce healthcare expenses. This has significant implications for healthcare management, particularly given the ongoing paucity of funding for medical services and rising expenses associated with chronic disease prevalence. Patient education is a key challenge for healthcare, particularly in improving effectiveness. Primary care physicians play a crucial role in educating patients about their health and molding their attitudes towards it. The increased emphasis on health education and promotion in modern healthcare systems highlights the importance of prevention over cure as a determining factor for future medicine. Patient education is a key challenge for healthcare, particularly in improving effectiveness. Primary care physicians play a crucial role in educating patients about their health and molding their attitudes towards it. The increased emphasis on health education and promotion in modern healthcare systems highlights the importance of prevention over cure as a determining factor for future medicine.(Przybylska et al., 2014) Health educators, often known as health education specialists, teach individuals about healthy habits. They create and put into action plans aimed at enhancing the well-being of people, families, and communities. Instruction and Practice, Health educators hold a bachelor's degree at the very least. Many are certified or hold advanced degrees. A person who has fulfilled the eligibility requirements and passed the competency-based examination proving their skill and knowledge of the Seven Areas of Responsibility of Health Education Specialists—the credential's foundation—is designated as a Certified Health Education Specialist (CHES®). The master's level certification, MCHES®, has a set of additional qualifying standards. Health educators are responsible for determining what social and health services communities and individuals need. They Create materials, programs, and policies that enhance both individual and population health using evidence-based research. Assess initiatives, offerings, and resources to enhance patient care and save costs, Gather, examine, and present facts, Provide information on coping with and managing current medical conditions, as well as help people access resources, Take the lead in coalitions and community-healthcare partnerships, Create, and oversee projects supported by grants, Provide community health workers and other professionals with training, Manage employees who promote health, and Promote better health policies and resources. In addition to their role in Health literacy and health communications; program design and management; coalition building, policy, and system change; curriculum development and training; behavior change techniques, motivational interviewing; program design and management; capacity building at the institutional or societal levels (Complementary-Roles-of-HES-and-CHW, n.d.) .Despite the crucial role of health educators, they have many obstacles, according to the cross -sectional study implemented at Saudia Arabia .A cross-sectional methodology was employed, and data were gathered by a self-administered questionnaire with four sections covering demographic information, health educators' duties, challenges they face, and views toward those roles. The survey included 234 health educators who were employed by public schools in Riyadh. The data was analyzed using a Chi-square test and descriptive statistics. The findings indicated that the participants' mean age was 40.31 years. While there was a statistically significant difference between elementary, middle, and secondary schools in performing most of these roles, there was no statistically significant difference between males and females in performing the majority of roles related to implementing health education activities in their schools. Health educators in public schools have numerous challenges in their work, but overall, they have a positive attitude about it (mean score of 2.58 ± 0.28). The results showed that health educators in public schools have numerous challenges while putting health education programs into practice, which has a detrimental effect on schoolchildren's health promotion. Since health educators have a positive attitude and seem to like their work, further training programs are necessary to ensure they are well-prepared to carry out their duties. A profession is the combination of one or more disciplines with a skill set that includes complex knowledge in certain situations. Al Sayah et al. (2014) state that the profession is worthy of pay and elevates one's social standing. (Abdullah Fares Abanami et al., 2022) (National Library of Canada Bibliothèque Nationale Du Canada Acquisitions and Acquisitions et Bibliographie Services Services Bibliographiques, n.d.)(Complementary-Roles-of-HES-and-CHW, n.d.)

CONCLUSION

In the medical field, improving medication safety requires cooperation between pharmacy technicians, lab medicine specialists, nursing technicians, and health educators. To guarantee the precision, efficacy, and safety of pharmaceutical usage throughout the many phases of patient care, each of these jobs provides a special skill that enhances the abilities of the others. Pharmacy technicians are essential to the management and dispensing of medications because they verify and handle prescriptions precisely, which lowers error rates. Critical diagnostic information from laboratory experts informs treatment choices and the proper administration of medications. While health educators provide patients with vital information about their therapy, encouraging adherence and safe practices, nursing technicians make sure that medications are administered and monitored correctly. As a member of an integrated healthcare team, in addition to preventing prescription errors, these experts also enhance patient outcomes, which emphasizes the necessity of ongoing interprofessional collaboration and communication initiatives.

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