Leveraging Pharmaceutical Expertise for Public Health Crisis Management

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KEYWORDS

Public Health, Pharmacist, Pharmaceutical Care

ABSTRACT

The focus of pharmacy practice in pharmaceutical care has evolved from medication product orientation to patient orientation, with the goal of achieving specific outcomes that enhance patients' quality of life. Because patients see chemists increasingly frequently, they can be crucial in helping patients receive individualised care and, in particular, in effectively controlling the rising number of chronic non-communicable diseases (NCDs). In India, the lack of professional training and ongoing education in pharmacy, along with a deficiency in clinical knowledge and abilities, can result in poor self-esteem and negatively impact patient care. Community chemists should become more knowledgeable by learning new material on a regular basis, improving their abilities, and leaning more towards patient-centered services than just medication dispensing. Effective pharmaceutical care practices are not always implemented in the community; these obstacles must be recognised and removed through methodical research. The purpose of this study was to determine the level of training needed for community chemists, to train them and assess how that training affected their practices and services related to pharmaceutical care, and to ultimately assess the obstacles to pharmaceutical care in different contexts and make appropriate suggestions.

1. Introduction

According to Mikael et al. (1975), pharmaceutical care is "the care that a given patient requires and receives which assures safe and rational drug usage." Pharmaceutical care is primarily concerned with the "using" of drugs, with the primary goal being Quality of Life. Pharmacy practice originated in Europe as apothecaries, when the healthcare professional operated as a lone practitioner, diagnosing illnesses, preparing and delivering medications, and keeping track of patients' results [1]. This practice got laborious as the number of patients rose. As a result, healthcare practitioners separated these responsibilities into distinct but related professions—nurses, doctors, and pharmacists—based on the need for specific knowledge and abilities. Physicians were responsible for diagnosing, chemists for managing drug-related issues, and nurses for providing comfort and patient care [5]. Because they worked on all things related to pharmaceuticals, the chemists went by the nicknames Compounders, Chemists, and Druggists. Professional relationships amongst medical professionals were significantly impacted by the pharmaceutical industry's introduction into the healthcare sector. Pharmacists' only responsibilities are to dispense and read prescriptions [2]. Later, unable to communicate with the doctors in sufficient detail, people began to ask the chemists questions while they were filling prescriptions. A few queries also came up during the medication process. To meet the needs of the patients, chemists therefore began to acquire communication skills gradually. This conversation gave rise to a profession called "patient counselling."

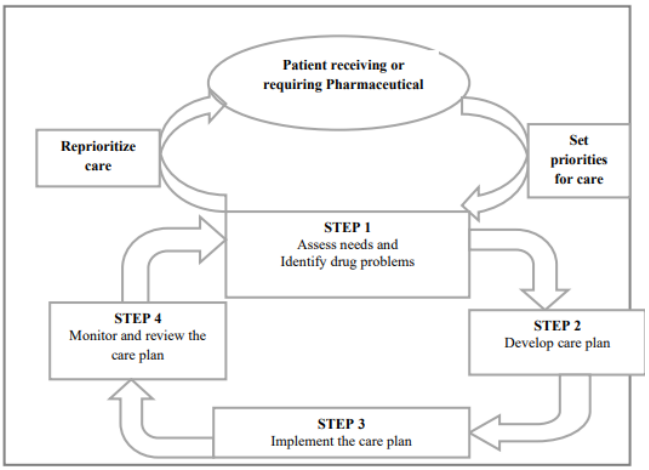

Figure 1. A Systematic Approach to Pharmaceutical Care

Despite the fact that community chemists claim their chemist's don't have enough PhC, they do intend to do so. According to study findings, there could be a reason for the difference between intended and actual practice.

- Physicians' low perception
- Low behavioral control
- Low self-esteem and self-confidence in the provision of PhC and
- Low availability of means necessary to provide PhC.

Low confidence to practise PhC is a result of several factors in the Indian context, including the absence of a clinical component in the curriculum, a lack of professional training or Continuous Pharmacy Education, and a lack of postgraduate or postemployment developmental programmes for pharmacists [7]. Inadequate clinical expertise and unsuitable clinical abilities negatively impacted the delivery of PhC [13]. Studies on the state of community pharmacy services in India are quite rare [3]. With this background in mind, the study was designed to determine the training needs of community chemists, provide them with training and assess the effect of that training on Pharmaceutical Care services, and then assess the obstacles to Pharmaceutical Care in different settings in order to make appropriate suggestions [16].

Pharmaceutical Care

Drug-food interactions, pharmacokinetic effects, and unanticipated adverse drug reactions occurred when contemporary medications got more sophisticated or, in some situations, difficult for patients to use and it became apparent that time could affect the drug effects they are provided. As a result, a demand for Pharmaceutical Care services emerged. If medicinal medications are not used according to the rules, there is a significant risk involved. As a result, it became the chemist's duty to advise patients on how to take their medications in a way that will maximise benefits while minimising hazards. Given the individual characteristics of every patient, tailored patient education becomes essential [4].

Overstretching pharmaceutical items while disregarding patient needs resulted in a business that was product-centric and negatively impacted healthcare outcomes [10]. The World Health Organisation is pushing patient-centric healthcare, which prioritises patients over products or processes, as a result of pervasive profit-driven practices. It was requested of chemists to oversee the overall results of therapies. So, instead of just administering medication, chemists now also consult patients and monitor the effectiveness of their treatments. A large void in the healthcare system has been filled by this PhC approach model [14]. PhC can significantly reduce the likelihood of causalities resulting from a lack of coordination among healthcare specialists. Different from other healthcare practitioners, chemists are distinctive in that they approach problems from a drug perspective because they specialise in medications.

Pharmaceutical Care process Steps

- Step 1. Establish professional contact and express commitment to the patient.
- Step 2. Collect, synthesize, and interpret Patient information, drugs, and disease data.
- Step 3. List, Define and prioritize the Patient's Drug-Related Problems (DRPS)
- Step 4. Quantitatively decide thedesired and measurable pharmacotherapeutic outcome.
- Step 5. Determine feasible pharmacotherapeutic alternatives for desired outcomes
- Step 6. Choose the best pharmacotherapeutic solutions and individualize the regimen
- Step 7. Design therapeutic monitoring plan: Monitor outcome & adverse effect
- Step 8. Implement & Document individualized regimen and monitoring plan.
- Step 9. The follow-up to measure success on an individual basis and long-term basis

The coordinated healthcare services of doctors, surgeons, chemists, and nurses have made healthcare safer in many affluent countries. There is no denying that using an evidence-based approach to pharmaceutical therapy is raising the standard of medical care. Pharmaceutical care entails the active involvement of chemists, patients, and carers in choices on drug therapy. In order to provide pharmaceutical care, chemists should act in the patient's best interest while also respecting their right to privacy and confidentiality. [6].

Pharmaceutical Care In India

In India, doctors oversee patients' therapy primarily with the assistance of nurses. Meanwhile, chemists' enormous potential for service is still being underutilised. India confronts significant obstacles in providing PhC, such as pharmacists' unwillingness to take on clinical responsibilities and doctors' and patients' negative perceptions of pharmacists in such a capacity. But in recent years, a lot of hospitals have started offering Pharmaceutical Care and clinical pharmacy services, thus this has started to change.Forty With the central government's consent, the PCI notified the PPR in January 2015, using the authority granted by sections 10 and 18 of the Pharmacy Act, 1948. A universal code of pharmacy ethics, a pharmacist's obligations to patients, the qualifications needed for a pharmacist's profession, the function of a community pharmacist, and other topics are outlined in the PPR 2015. According to the PPR, chemists shall provide services including patient counselling and adverse drug reporting in addition to dispensing medications and keeping track of the medications administered to patients. Even though the Pharmacy Council of India published the Pharmacy Practice Regulations (PPR), 2015 to improve the standing and practice of the pharmacy profession in the nation, more than 2.5 years have gone by, and many state governments still haven't taken any action to implement it [15].

Burden of diseases in India and Need for Pharmaceutical Care

Non-communicable diseases (NCDs) pose a significant threat to public health in the twenty-first century, both because of the pain they cause to individuals and the damage they do to the nation's socioeconomic advancement. Every year, NCDs cause the deaths of about 41 million people (71% of all deaths globally), of which 14 million are premature deaths, occurring between the ages of 30 and 70. Most early deaths from NCDs are avoidable.

If prompt actions for NCD prevention and control are not carried out, World Health Organisation (WHO) forecasts state that the overall annual number of deaths from NCDs will rise to 55 million by 2030 [8].

According to a 2015 WHO report, around 5.8 million Indians pass away from NCDs (cancer, diabetes, heart and lung diseases, stroke, and other illnesses) each year, meaning that 1 in 4 Indians will pass away from an NCD before they turn 70.

The Ministry of Health and Family Welfare (MOHFW), Government of India (GOI), published a report titled "India: Health of the Nation's States" in which it is reported that the percentage of deaths from NCDs (among all deaths) increased from 37% in 1990 to 61% in 2016. Additionally, the contribution of NCDs to the overall disease burden—or disability-adjusted life years (DALYs)—rose from 30% in 1990 to 55% in 2016. This demonstrates a swift shift in epidemiology and a growth in the burden of non-communicable diseases.

- ***Major NCDs and their risk factors***

Diabetes, malignancies, chronic respiratory conditions, and cardiovascular illnesses are the main NCDs. The primary behavioural risk factors for noncommunicable diseases (NCDs) include inactivity,

poor diets (rich in salt and fat, low in fruit and vegetables), tobacco use (smoking, secondhand smoke, and smokeless tobacco), and alcohol abuse.

They are linked to increased blood lipid levels (dyslipidaemia), elevated blood pressure (hypertension), elevated blood sugar (diabetes), and obesity. In terms of indoor and outdoor air pollution, which is mostly caused by burning solid fuels for cooking and heating in the home, air pollution is also a major risk factor for NCDs [9].

Despite the fact that the majority of illness and mortality from NCDs occur in adulthood, early childhood exposure to risk factors occurs. Thus, NCDs and the risk factors associated with them are extremely important to young people.

- ***Actions to beat non-communicable diseases***

The combination of risks has resulted in a widespread increase in burden across the nation, which strongly suggests that significant measures must be made to control their impact in each state before things completely spiral out of control. Treating the sick won't stop the NCD epidemic; healthy people also need to be protected by addressing the underlying causes. The main goal at the moment is to reduce the major risk factors for NCDs in order to stop NCD-related mortality. In order to avoid NCDs and contribute significantly to the nation's economic development, it is imperative that risk factors be addressed in addition to saving lives [17].

India is expected to become the "Diabetic Capital of the World" by 2025. About 40.9 million individuals in India have diabetes, according to the International Diabetes Federation's Diabetes Atlas 2006. If immediate preventive action is not taken, it is predicted to increase to 69.9 million by 2025. The phrase "Asian Indian Phenotype" describes distinct clinical and biochemical anomalies that are specific to Indians and that lead to insulin resistance, increased abdominal adiposity (higher waist circumference despite lower BMI), low birth weight, maternal malnutrition during pregnancy, decreased adiponectin, and elevated C-reactive protein.

The diabetes epidemic is rapidly expanding, particularly in poorer nations. According to the IDF Diabetes Atlas 9th edition 2019, there are 463 million adults worldwide who have diabetes at now, including 77 million in India, the country with the second-highest number of cases. By 2030, it is predicted that there will be 578 million adults with diabetes globally. The population of India is the highest, followed by China and the USA. Among the seven nations that make up the IDF SEA region is India.

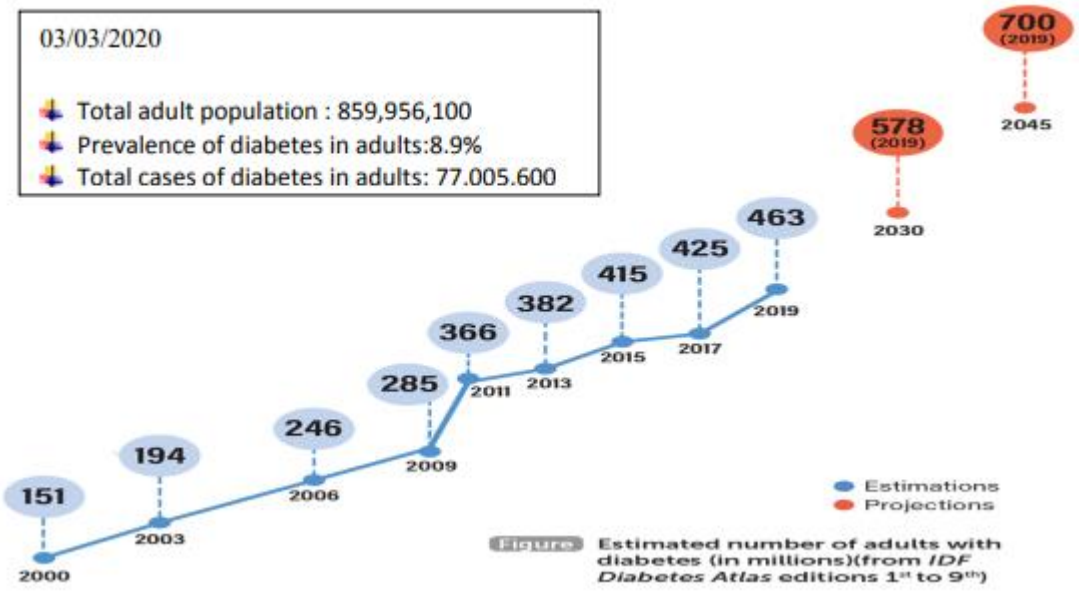

Figure 2. Estimated number of adults with Diabetes

Pharmacists need to be involved with diabetes. The health of their patients as well as the general public can be greatly impacted by pharmacists who specialise in diseases like diabetes and other chronic illnesses. PhC is linked to numerous favourable results connected to diabetes, such as enhanced clinical metrics, increased satisfaction among patients and carers, and enhanced cost control. Based on statistical evidence, patient education is the most effective strategy to lower the risk of problems related to diabetes. When patient education is carried out with the patient's KAP's understanding of the illness, it is effective [11]. In order to evaluate patient education needs, a diabetes KAP questionnaire would assist raise awareness, reduce risks, and avoid consequences. PhC administered by qualified chemists may be crucial in managing diabetes, achieving therapeutic objectives, enhancing quality of life, reducing morbidity and mortality, controlling disease consequences, and delaying problems.

Issues in implementing Pharmaceutical Care

The role of chemists in patient care has to expand as professional and educational standards develop. The main obstacles to the provision of PhC have been identified as inadequate clinical knowledge, inadequate clinical education and training for chemists, lax application of current laws, and other healthcare professionals' failure to recognise the pharmacy as a separate but essential component of the healthcare profession.

India is a nation where drug abuse is a major issue. India's chemists must accept this shift and advance from managing medications to providing efficient, team-based pharmaceutical care [12]. They are required as knowledge workers to work in drug information centres, provide patient education materials, keep an eye on adverse medication reactions, and serve as knowledgeable personnel in labs. Government agencies, professional groups, regional forums like the SEAR Pharm Forum, and stakeholders would all need to be heavily involved in this lobbying and education [18].

All levels of education—trainers, managers, and pharmacists—must provide education in order to enhance the latter group's capacity to treat diseases. Indian chemists lack the education necessary to provide patient care. In general, clinical pharmacy services have not gained much traction. Instead, medical experts have been reluctant to acknowledge chemists' clinical roles. Furthermore, community

pharmacists are still primarily concerned with distributing medications, and pharmacists themselves are hesitant to take on clinical tasks and responsibilities. It is necessary to determine the obstacles to implementing PhC.

These barriers are of five categories:

- Lack of time
- Personnel limitations
- Lack of administrative support
- Low perception of PhC services by other healthcare professionals
- Lack of documentation systems

Pharmaceutical care also entails a sincere dedication to the well-being of patients, who are human beings in need of and deserving of the empathy, care, and mutual trust that chemists provide. Pharmacists frequently refuse to take on this heavy burden of treatment. They can so fail to sufficiently record, oversee, and evaluate the prescribed course of action. It is imperative that one accept this duty in order to practise PhC.

2. Results and discussion

There weren't many restrictions on how this study was carried out. Since there aren't many Indian studies on Training Need Assessment (TNA) for chemists published earlier, data from the Indian perspective could not be resorted to for the study's initial phase. While the pre- and post-educational intervention responses demonstrated a considerable improvement in the chemist's Knowledge, Attitude, and Practice, the second part of the study did not allow for the direct assessment of patient care quality based only on KAP ratings. In terms of actual practices, the results are primarily from community pharmacists and a small number of private hospital-based participants, as pharmacists from other government sector settings faced unavoidable obstacles that prevented them from successfully providing the necessary quantifiable PhC services. Even after receiving training, it is anticipated that PhC services must be provided consistently on a regular basis and practiced for the rest of one's life. As of right now, there is no ongoing system in place to evaluate chemists' procedures over an extended length of time following a study. Without formal mandates, monitoring systems, or regulatory constraints, this parameter is difficult to monitor.

Pharmacists must regularly construct and develop disease-specific pharmaceutical care training modules and Continuous Pharmacy Education (CPE) programmes for their lifelong learning. In order for all community chemists to achieve the necessary competencies, pharmaceutical care accredited courses must be created and put into place as an extra requirement. It is necessary to take the professional course completion credits into account when evaluating and promoting chemists across all environments. Regulatory and inspection bodies should routinely keep an eye on and audit the processes. Patient care services might be compensated favourably or on a salary basis as a motivating factor. Pharmacists can be educated, trained, and periodically assessed on pharmaceutical care concepts and services through the development and implementation of online continuing professional education (e-CPEs) on a digital platform, all with an emphasis on ease of use and user-friendliness. In order to develop a suitable solution and enable pharmacists in all settings to offer these services, it is necessary to conduct additional research on the obstacles that different pharmacists confront in each environment. This will ensure that the greatest possible benefit to patients is realized.

3. Conclusion and future scope

Even though community pharmacists have a very positive attitude, the first phase of study results showed that their knowledge and practice of patient care were at a low level. This confirmed that all

pharmacists, regardless of setting, urgently need to be trained in pharmaceutical care. The study's second phase found that, although chemists from all settings had considerably improved their knowledge and attitudes regarding pharmaceutical care as a result of the post-educational intervention, medicine dispensing remained the most common service in community practices. Most chemists were unconfident when it came to giving PhC services directly to patients. PhC procedures can be effectively improved by removing systemic impediments, creating and implementing strong, disease-specific structured training modules, and formulating developmental policies for community chemists

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