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Research Article

Evaluation of pharmacy technician training programs in different countries

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ABSTRACT

In recent years, there have been significant changes in pharmacy practices. There have been significant changes in pharmacy practice in recent years. These changes have been driven by the increase in chronic diseases and lifestyle-related illnesses. The changes in pharmacy practice have resulted in pharmacists being involved in a greater role in patient-centered health care and therefore requiring more time. In order to reduce this workload and provide pharmacists with the time they need; it is possible for pharmacists to work in coordination with pharmacy technicians. At this point, the competency of pharmacy technicians in their professions and the high quality of the education they receive play a key role in pharmacy management and pharmacy practices. In this study, the education of pharmacy technicians in other countries was evaluated. The similarity of pharmacy technician education is thought to make a significant contribution to the standardization of education. As a result of these studies, it is expected that the standardization of pharmacy technician education worldwide will contribute to the improvement of pharmacy practice and the quality of pharmacists and pharmacy health services.

Keywords: Pharmacy technician, Pharmacy technician education, Pharmacy management

1. INTRODUCTION

In the summary of the 2017 Pharmacy Technician Stakeholder Consensus, the agreed general definition of pharmacy support staff is as follows: Pharmacy support staff is a role that encompasses a wide range of roles, from staff with only various administrative tasks to staff who assist pharmacists in the performance of their professional tasks under the supervision of pharmacists (pharmacy assistants) [1]. In Türkiye, the definition of pharmacy technician was made in 2011; pharmacy technicians graduated from the pharmacy services program of vocational schools prepare prescribed medicines under the supervision of pharmacists and assist in pharmacy activities [2].

In recent years, there have been significant changes in pharmacy practice. The main reason for the changes is the increase in chronic diseases and lifestyle-related diseases in the society. Due to this increase, both community and hospital pharmacists assume more responsibility for patient-centered health care. The key role of pharmacists in providing both preventive and chronic health care has led to the transformation of pharmacy from dispensing medicines to providing health care. However, with the increasing demand for improved patient care, various problems arise for pharmacists, such as lack of time. In addressing these issues, the pharmacy technician's assistance to the pharmacist plays a key role [3]. In addition, the International Pharmaceutical Federation (FIP) argued in April 2024 advocated in April 2024 that investing in the pharmaceutical

workforce will benefit the development of health systems and contribute to achieving global health coverage by 2030, as previously stated in the United Nations Sustainable Development Goals [4].

Several studies have investigated the workforce support of pharmacy technicians to pharmacists. However, it is a fact that the scope of practice and work of pharmacy technicians is not clearly defined in many parts of the world as it is in our country. Furthermore, the practice scope of pharmacy technicians is reported to be a controversial issue. However, previous studies have shown that the support of pharmacy technicians to pharmacists will enable pharmacists to improve patient clinical care services. In addition, it has been reported that expanding their scope of practice with several tasks would be very beneficial for public health [5,6]. In addition, several studies have shown that pharmacists generally report that appropriately trained technicians add more value to the organization in which pharmacy technicians work. Furthermore, pharmacists have been reported to support expanding the pharmacy technician's role within certain limits [7,8]. Moreover, it has long been recognized that those who have been trained with a specific accreditation are more valued by their employers [9].

A survey of appropriately trained pharmacy technicians was conducted in the United States. In the surveys, 7 out of 17 reported an increase in their hourly wage after completing their certification program. Also, they reported feeling that their self-efficacy was higher after the training program [10].

In light of this information, the increasing population in our country and in the world and the increased responsibilities of pharmacists as pharmacy management and health professionals demonstrate the need for pharmacy technicians. In this regard, the workforce support of pharmacy technicians, who play a significant role in pharmacy management, is necessary for pharmacists to provide patient-centered healthcare services. At this point, working with pharmacy technicians who are appropriately trained and qualified in their respective fields allows the pharmacists to find more time as pharmacy managers and health professionals. In our country, the education of pharmacy technicians has undergone various changes over the years and has taken its current form. There is also a variety in the world definition of this sector; it varies from pharmacy technicians who ensure their professional adequacy with a comprehensive program, as in our country, to a situation that is not recognized or does not exist as a workforce. The point we will emphasize in this difference is the training curricula created by different institutions in many parts of the world, and the conditions required for pharmacy technicians to reach their competencies in their fields. Furthermore, it is also thought that the appropriate training of pharmacy support staff in their fields will increase their employment and support their need for training. At this point, Türkiye, the United States of America, the United Kingdom and France were selected as the four countries to focus on. The countries significantly differ from each other socially, culturally and economically. In addition, their main education systems are also significantly different from each other. It is considered that this situation will reveal the difference between the trainings more clearly.

2. MATERIALS AND METHODS

In March 2025, the countries to be included in the study were identified by searching key library databases using a comprehensive list of search terms. The various databases were searched using terms such as 'pharmacy technician' AND 'education' OR 'training'. Then, for each country, the organizations providing training for pharmacy technicians in that country were examined. In this way, the study is the result of an extensive literature review and organization research.

In order to be able to work as a pharmacy technician in Türkiye, as mentioned before, personnel must successfully graduate fromthe 2-year education of the Pharmacy Services program of the vocational schools affiliated to universities [2]. There are 112 institutions in Türkiye where there is a Pharmacy Services program and students must get the appropriate scores for the university conditions in order to receive education in these vocational schools and are placed in the university as a result

of the scores they receive [11]. In the Pharmacy Services Program, students are taught both theoretical and practical lessons, depending on the Vocational School they are affiliated with, such as Introduction to Pharmacology, Basic Anatomy, Basic Chemistry, Physiology, Medicinal Plant Products, Basic Microbiology lessons, Drug Information, Disease Information and Basic Pharmacy Practices in Pharmacy Services. The students are subjected to a midterm exam, midterm study (project, seminar, quiz, homework or a second midterm exam) and final exam for each course. The Midterm exam and midterm study, if available, contribute 40% to the success grade, while the final exam contributes 60%. The students must be successful in all the courses they have completed. In addition, the students must have at least 120 ECTS credits in the program and their GPA must meet the success requirements of the university they are affiliated with. The program also requires a 30-day internship. Students are entitled to graduate when they meet these conditions as a result of the education they receive for 2 years. Graduated students can be employed in the community or hospital pharmacies, pharmaceutical depots and pharmaceutical companies [12-14].

In the United States of America (USA), the education of pharmacy technicians has undergone a range of changes and has developed into what it is today. The Pharmacy Technician Accreditation Commission (PTAC), which was established to standardize and improve the quality of education and training programs for pharmacy technicians in the USA and to standardize education, published the Accreditation Standards for Pharmacy Technician Education and Training Programs in These requirements for accreditation were accepted by a protocol between the American Society of Health-System Pharmacists (ASHP) and the Accreditation Council for Pharmacy Education (ACPE) [15]. In addition to the accreditation conditions, a model curriculum was published for the institutions that will perform this certification, but it was stated that there is no obligation for the specified conditions, only an expectation in this direction [16]. In addition to these “entry-level” elements, pharmacy technicians who receive “advanced-level” training are expected to have a good knowledge of the drug research process, off-label drug use, chemotherapy drug preparations, and magistral drug manufacturing that does not require a high level of sterility [17]. The entry-level training program includes at least 400 hours of training over a minimum of 8 weeks, while the advanced training includes at least 15 weeks and 600 hours. These trainings consist of didactic, simulation and experiential training methods and the training hours are divided according to these training methods [17]. In January 2018, the Pharmacy Technician Certification Board (PTCB) announced several requirements for this training; candidates must have graduated from a pharmacy technician training program recognized by the PTCB or have at least 500 hours of work experience to be eligible to sit for the certification exam. Furthermore, the PTCB requires pharmacy technicians to complete at least 20 hours of training in pharmacy law and patient safety to renew their certification every 2 years. In addition, in-service training on various topics can provide them with another avenue for employment. A good example of this in-service training is the Compounding Sterile Preparation Technician (CSPT) training under the PTCB, an online training in sterile preparation for pharmacists and pharmacy technicians. Despite the breadth of training and opportunities, there is no obligation to attend training outside one state in the country and participation in pharmacy technician training is very low among pharmacy workers [18-20].

The training of pharmacy technicians in Great Britain was reviewed by the General Pharmaceutical Council (GPhC). And it was determined that there was no clear curriculum for pharmacy technician training in Great Britain. To work as a pharmacy technician, people must attend a GPhC-approved course and gain work experience under the direct supervision of a pharmacist or pharmacy technician for at least 14 hours per week for 2 years. They are then expected to pass a series of examinations demonstrating their competence against national standards. Although the training curriculum is not explicitly stated, pharmacy technicians are expected to have a basic knowledge of biology, chemistry, physiology, microbiology, and theoretical knowledge of topics such as pharmacy

science, pharmacy law, professional ethics, pharmacology, dispensing, patient communication, and pharmacy calculations. In addition, the GPhC has called for pharmacists and pharmacy technicians not to refrain from training and tutoring in setting training standards [21,22].

There are two different definitions in France: pharmacy technician and pharmacy assistant. Pharmacy assistants must first have worked in a pharmacy for two years to be eligible for certification. However, for pharmacy technicians, two years of pharmacy technician training is followed by a higher education diploma and the title of pharmacy technician. The pharmacy technician then undergoes one year of specialized training in a pharmacy or hospital and then receives the title of specialist pharmacy technician. This 2-year training for pharmacy technicians, which consists of an internship and theoretical courses, is usually provided by pharmacy faculties and pharmacy training centers. Furthermore, in order to graduate, the student must complete 120 ECTS credits and pass a continuous monitoring assessment. The curriculum is not sufficiently detailed, but the expectations of pharmacy technicians are similar to those in other countries [23,24].

3. RESULTS AND DISCUSSION

In this study, the training received by pharmacy technicians in Türkiye, England, the USA, and France was examined in detail. As a result of this examination, it was revealed that the training curriculum and expectations from pharmacy technicians were similar. The existence of these similarities creates a suitable area for standardizing the quality of education. On this point, the possibility of standardizing education will ensure that competent pharmacy technicians are trained in their fields and that their duties and responsibilities are also standardized. With the standardization of this education, pharmacy technicians will receive higher quality education and become more competent in their fields, which will increase the workforce support for pharmacists. This strategy also foresees that the pharmaceutical workforce, which is expected to be in short supply in the health system, will be strongly supported and the expected risk will be reduced. In addition to this standardization, the certification processes in the USA and the process of certificate renewal every two years and the lack of these conditions in our country, cause people to become monotonous and not to renew themselves in the profession. Creating an action plan by professional

Table 1. Comparison of different training conditions

	Türkiye	United States of America	Great Britain	France
Duration of Training	2 years	Entry-level- at least 8 weeks advanced-level- at least 15 weeks	2 years	2 years
Training organizations	Pharmacy Services Programs associated with Vocational Schools	Certification organizations	GPhC-approved courses	Faculty of Pharmacy, Pharmacy Education Centers
Conditions for Enrollment in the Training	To have a university entrance exam score suitable for the vocational school requirement	-	May vary based on the course provider. You may be expected to have the equivalent of four GCSEs at grade C or above, including math, English, science and one other subject.	Pharmacy assistants must have two years of professional activity in a pharmacy to be able to participate in a certification process.

boards and providing regular and compulsory in-service training will make a significant contribution to the competence of pharmacy technicians. Thus, it will improve the quality of support provided to pharmacists in pharmacy management.

3.1. Future Perspective for Pharmacy Technician Training and Workforce Support

By increasing the number of pharmacy technicians graduated from vocational schools in our country, the pharmacist's trust in the pharmacy technician who has received appropriate training will increase. This increase in trust will allow the role of pharmacy technicians to be expanded. The support of pharmacy technicians to pharmacists in pharmacy management will enable pharmacists to devote more time to patient-centered care services and provide adequate support to health institutions to further improve public health. However, the time allocated for pharmaceutical care provided to the patient will be sufficient and subsequently, the quality of pharmaceutical care will increase. Increasing the quality of pharmaceutical care will increase the patient's trust in the pharmacist and pharmacy. In addition, this will provide time for good pharmacy practices to provide the patient with the necessary incentives for rational drug use and patient education. Reduced health costs with the correct application of rational drug use will contribute greatly to the national economy. In order to achieve all these benefits and to realize this transformation, pharmacy boards, pharmacy professional associations, pharmacy technician professional associations, pharmacy universities and pharmacy services programs affiliated to vocational colleges should establish unity.

4. CONCLUSION

The curriculum and expectations of pharmacy technicians in Türkiye, England, the United States, and France are similar, but the practices and responsibilities of pharmacy technicians are different. It is a fact that the instructors who provide pharmacy technician training differ between countries. In the USA and England, the instructors are usually not pharmacists or pharmacy technicians, while in Türkiye, they are expert pharmacists or chemistry or biology experts who have completed a master's degree, and practical lessons are usually given by pharmacists. The fact that the definition and responsibilities of pharmacy technicians have not yet been standardized around the world causes their training to differ from each other.

Ethical approval

Not applicable, because this article does not contain any studies with human or animal subjects.

Author contribution

Conceptualization; B.T, Methodology, B.T; Software, B.T.; Validation, B.T.; Formal analysis, B.T.; Investigation, B.T. ; Resources, B.T. ; Data curation, B.T. ; Writing—original draft preparation, B.T. ; Writing—review and editing, B.T. ; Visualization, B.T. ; Supervision, B.T. ; Project administration, B.T. ; Funding acquisition, B.T. All authors have read and agreed to the published version of the manuscript.

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Conflict of interest

The authors declared that there is no conflict of interest.

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