

Aspects of Indian pharmacy institutions' quality management: Techniques for improving their academic prospects

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Abstract: Over the past two decades, there have been significant transformations in the landscape of pharmaceutical education in India. While the first pharmacy college in Asia was established by the Portuguese in Goa in 1842, the foundations of modern pharmacy education in India were laid in 1932 when Banaras Hindu University was founded by Professor Mahadev Lal Schroff. Since then, numerous pharmacy schools have emerged across the country in response to the growing demand for pharmaceutical education. The pharmaceutical industry has always played a pivotal role in shaping the trajectory of health education in India. Many graduates have traditionally chosen to pursue careers in the industry. However, the educational path to becoming a pharmacist in India is relatively brief, typically spanning just over two years of schooling. This has resulted in a substantial portion of pharmacy practice being carried out by pharmacists with diploma-level training. Unfortunately, this emphasis on diploma programs has sometimes overshadowed the need for a comprehensive pharmaceutical practice curriculum. Nonetheless, there is a positive trend in Indian colleges and universities offering pharmacy degrees, including the introduction of a practice-oriented Doctor of Pharmacy (PharmD) program. Private institutions began offering this program in 2008. However, it's important to note that there is limited research available on the current state of pharmacy education in India, and curriculum deficiencies remain a significant concern. The purpose of this article is to shed light on these issues and chart the evolution of the pharmacy profession, particularly with the emergence of the PharmD program. The content is intended to spark discussions, critical thinking, and strategic planning aimed at enhancing pharmacy education in India.

Keywords: India Scenario, Pharmacy practices, Quality Management.

I. Introduction

Pharmaceutical education in India has a rich history, dating back to 1842 when the first pharmacy college was established in Goa by the Portuguese. India's pharmacy schools were initially governed by the Pharmacy Act of 1948, overseen by the Pharmacy Council of India (PCI). However, the evolution of pharmacy education in India has taken a unique path, influenced significantly by the pharmaceutical industry. This influence has resulted in a curriculum that has leaned more towards practical experience than analytical skills. To maintain competitiveness on a global scale and lead in the field, there's a pressing need to reassess the objectives of pharmacy education and reshape the curriculum accordingly. Over the past decade, technical education in India has seen substantial growth, necessitating alignment with international advancements in the profession.

In recent academic years, there has been a noticeable decline in student interest and enrollment in undergraduate pharmacy programs (B. Pharmacy). This shift can be attributed to the pharmaceutical industry's increased focus on research and marketing rather than manufacturing. In today's job market, knowledge plays a pivotal role in enhancing employability. Therefore, there's a critical need to revamp the curriculum and produce graduates who possess the professionalism and analytical skills required to tackle contemporary challenges.

India, a rapidly developing nation in South Asia with over 1.2 billion inhabitants, boasts a secular, autonomous republic comprising 28 states and 7 union territories. The first official pharmacy education program was introduced by Banaras Hindu University in 1937, focusing on pharmacological chemistry, analytical chemistry, and pharmacy, aimed at training experts in pharmaceutical quality control and standardization. However, this

program fell short in preparing graduates for pharmacy practice. Prior to India's independence in 1947, there were only three pharmacy schools in the country.

II. The Indian Pharmaceutical Profession

India is home to over a million pharmacists, with approximately 55% working in local pharmacies, 20% in hospitals, and 10% in businesses and government agencies. The foundation for pharmacy education in India was laid in 1937 when a three-year bachelor's degree program in pharmacy was introduced, leading to the award of degrees. Currently, India offers a range of pharmacy programs, including Bachelor of Pharmacy (B.Pharm.), Master of Pharmacy (M.Pharm.), Pharm.D., and Ph.D. To practice as a pharmacist in India, completion of a pharmacy school program and a minimum of a 2-year and 3-month internship are mandatory. The majority of Indian pharmacists hold a pharmacy degree, with thousands of graduates annually.

The Pharmacy Council of India (PCI), established in 1949, serves as the statutory body overseeing pharmacy practice and education in India. PCI continually enhances its curriculum to produce competent professionals capable of meeting society's and the industry's growing demands.

In 2003, former Indian President Dr. A.P.J. Abdul Kalam introduced the Pharma Vision 2020 charter, emphasizing the importance of maintaining professional standards, public education, and pharmaceutical research and education. Subsequent conferences, such as the 58th Indian Pharmaceutical Congress in 2006, have continued to focus on Pharma Vision 2020.

III. Educational Initiatives

Quality management is essential for Indian pharmacy institutions to improve their academic standing and provide top-tier education to students. Several key aspects of quality management can enhance the academic prospects of pharmacy institutions:

Accreditation: Accreditation by reputable bodies like the National Assessment and Accreditation Council (NAAC) and the Pharmacy Council of India (PCI) is critical for ensuring education quality. Accreditation helps identify strengths and weaknesses, paving the way for improvements.

Curriculum Development: Pharmacy institutions must regularly update their curriculum to align with industry needs. Collaboration with industry experts ensures curriculum relevance.

Faculty Development: Continuous faculty development programs are vital for improving teaching skills and staying updated with industry developments.

Student Engagement: Engaging students in internships, workshops, and seminars enriches their practical skills and industry knowledge.

Research: Promoting research activities among faculty and students contributes to advancements in pharmaceuticals and healthcare.

Infrastructure: Adequate infrastructure, including well-equipped labs and libraries, creates an optimal learning environment.

Industry Partnerships: Collaboration with industry fosters internships, placements, and research, providing practical experience.

IV. Indian Schools of Pharmacy

India's pharmacy education history is extensive, with over 2659 pharmacy schools today. The formal pharmacy degree program was initiated in 1937 by Banaras Hindu University, offering a 3-year Bachelor of Pharmacy (B.Pharm) program emphasizing pharmaceutical chemistry and analytical chemistry. This program aimed to prepare graduates for the pharmaceutical industry.

Pharmacy education's roots trace back to 1860 when Madras Medical College introduced the first pharmacy course, catering to those seeking medical degrees and those already holding apothecary or hospital assistant qualifications. In the 1870s, the college expanded to offer a "chemists and druggists" course, marking India's first dedicated pharmacy school. The University of Punjab followed in 1944, further solidifying pharmacy education in India.

V. Pharmacy Education Regulation Organizations

India faces a significant gap between formal pharmacy training and pharmacy practice. The education system has primarily emphasized physicochemical research, analysis, and pharmaceutical production, neglecting clinical aspects. This gap has resulted in a shortage of dispensing services and insufficiently trained pharmacists.

To improve the pharmacy profession, state drug enforcement agencies should expand their workforce to regulate drug distribution. The pharmacy curriculum should be enhanced to include clinical topics, making graduates competitive in healthcare.

A potential solution is bifurcating the undergraduate pharmacy curriculum into two courses: B.Pharm (Industrial) and B.Pharm (Clinical), regulated by the Pharmacy Council of India and the AICTE, respectively. This approach offers specialization options and equips students with relevant skills.

VI. Increasing Pharmacy Education

Public funding for higher education in India increased gradually until the mid-1980s. However, significant changes occurred afterward. In the early 1980s, only 11 universities and 26 institutions offered undergraduate and graduate pharmacy education. By 2007, this number had expanded to 854 schools with over 52,000 students enrolled in B-level programs.

Pharmacy education saw rapid growth due to pharmaceutical industrialization, privatization, and economic expansion in the late 1980s. Presently, private universities dominate the landscape, with approximately 91% of students admitted by private institutions. Despite the growth, several D.Pharm and Pharm.D programs have closed in recent years, and there are substantial regional variations in graduate numbers.

VII. Summary

Pharmacy education in India has witnessed substantial growth, with a predominant focus on the pharmaceutical industry and product-oriented careers. Graduates typically seek employment in the pharmaceutical sector, while only a small percentage pursue community or institutional pharmacy. Challenges persist, particularly concerning the employment prospects of postgraduates in pharmacy practice.

There is a pressing need for a comprehensive survey of the pharmacy workforce and an evaluation of pharmacy education programs in India. Moreover, considering separate pharmacy degree programs for industry and practice might be necessary to meet the increasing demand effectively. India offers diverse opportunities for aspiring pharmacists to pursue their academic goals in a dynamic environment.

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