Strengthening Pharmacy Education in Bangladesh: The Role of Early Academic Screening

Mozahidul Islam, Anay Sarker, Motiur Rahman Nayem, Himel Kabir
Department of Computer Science
American International University – Bangladesh
(23-51293-1, 23-51371-1, 23-51380-1, 23-51481-1)@student.aiub.edu

ABSTRACT

This study shows how student selection practice and early academic preparedness affect the quality of pharmacy education in Bangladesh. Pharmacy is a health-based and the competence of future pharmacists is closely linked to the patient's safety and healthcare. The purpose of this research was to learn student's satisfaction level, practical practice, and opinions about the present education system, also a focus on improving quality rather than quantity.Primary data were collected by an online structured survey using Google Forms, where responses from 59 undergraduate pharmacy students were taken. Descriptive statistics were used to examine their state of practical training and overall learning experience. It is found that many students feel less satisfied and not sure about their professional goal, mainly due to limited practical practice and weak admission system. A large number of students supported stricter admission requirement and early academic termination. The study suggests that improving the student selection and adding early screening can help build a more solid pharmacy workforce and contribute positively to public health outcomes in Bangladesh.

Keywords: Pharmacy Education, Bangladesh, Undergraduate Pharmacy Students.

INTRODUCTION

Problem Background:
Pharmacy education is an important part of both the education system and the healthcare system. Pharmacists play a direct role in medicine safety, proper use of drugs, and patient centered care. Over time, the pharmacy profession has changed from a product focused role to a more clinical and patient based role. Because of this change, the quality of pharmacy education and the skills of students have become very important (Islam et al., 2014). Poor training or weak professional practice in pharmacy can harm healthcare quality and public safety, which has also been highlighted by the World Health Organization.
Studies from developing countries show that pharmacy education in Bangladesh is still mostly based on theoretical and classroom learning. This system produces students who know the theory but lack practical skills and patient focused experience (International Pharmaceutical Federation [FIP], 2014; Anderson et al., 2009). This situation is especially serious because pharmacy is a

health related subject, and poor professional skills can negatively affect patient safety and healthcare quality (World Health Organization, 2016). In addition, Islam et al. (2014) reported that more than 90% of the BPharm curriculum in Bangladesh focuses on product oriented knowledge, with very little emphasis on clinical pharmacy. This creates concern about whether graduates are truly ready for professional practice.

As a result, increasing the number of pharmacy students has not led to better educational quality or competent graduates. There are no strong systems to check whether students are suitable for pharmacy education or ready at an early stage. This leads to waste of educational resources and limits the contribution of pharmacy graduates to the healthcare system. Therefore, improving student selection and academic preparedness is very important for enhancing pharmacy education quality and supporting public health and sustainable healthcare development in Bangladesh.

Related Studies & Research Gap:

Previous studies on pharmacy department in Bangladesh focus on curriculum structure, teaching methods, infrastructure limitations, and practical lack and clinical practical works. This research gives a view that pharmacy programs remain largely theory and concept based also product-focused, producing graduates who are only academically knowledgeable but insufficiently prepared for professional and patient-based roles Mohiuddin, A. K. (2020).International reports also reviews that weak experiential learning and limited practice integration reduce professional competence and healthcare quality.

However, existing studies gives little attention to student-related problems such as admission quality, motivation, and early academic preparedness. There is a significant lack of experience based research examining how the current admission system allows academically underprepared or uninterested students to enter pharmacy programs and how this affects learning quality, laboratory performance, and peer outcomes Wong, G., Maragha (2025). This study addresses this gap by focusing on student selection practices and early academic filtering as key determinants of pharmacy education quality in Bangladesh.

Research Objectives & RQs:

The main objective of this study is to understand how student selection system and early academic performance effect the quality of pharmacy education in Bangladesh. This study mainly try to focus on quality more than quantity in a health related subject like pharmacy. Pharmacy is very sensitive subject, so student quality is very important.

RQ1: What things show that students are not satisfied with the present pharmacy education system in Bangladesh?

RQ2: Does the current pharmacy education system really prepare students for health related professional work?

Beneficiaries of the Study:

Students who cannot cope well with pharmacy study may get chance to change their field early. This will help them to save time and reduce stress and frustration in study life. Students who are motivated and capable will get better learning environment. Lab performance will improve and they will get more chance for professional growth. Teachers and universities can also benefit because they can focus more on quality students. Most importantly, when only motivated and well prepared students continue in pharmacy education, the pharmacy sector in Bangladesh will

improve in quality. This will help to ensure better patient safety, better professional performance, and overall improvement in public health.

RESEARCH METHODOLOGY

First, we consulted scholarly articles, reports, and research studies on pharmacy education and career trends to ensure that we asked questions that addressed genuine gaps.

Selection Of Data Collection Method :
For conducting the study, primary data was obtained using an online structured survey. This allowed us to understand what people involved in pharmacy educational and practical settings in Bangladesh know about the existing system. Google form was used to create the questionnaire and distributed to the students from pharmacy department. Personal devices were also used to get response from the students.

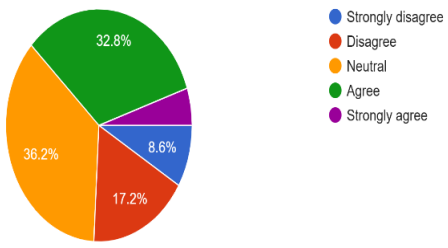
Description of the Data Collection Method :
This online study was carried out using Google Forms. The participants consisted of undergraduate. The sampling technique that was applied is a type of convenience sampling. These responses were then coded according to their respective stakeholders. For quantitative data, we used descriptive statistics and cross-tabulation. We employed the use of Microsoft Excel and SPSS software to analyze the responses. This approach is clearly outlined, allowing others to replicate it. The use of widely accepted tools and techniques strengthened the validity of the findings and supported meaningful interpretation of students' experiences and opinions regarding pharmacy education in Bangladesh.

Ethics Statement :
In this study, the focus was on the difference between pharmacy education and practice in Bangladesh. The primary aim was to help improve pharmacy practice realistically. We carefully followed the basic principles of ethics. Participants of the study willingly took part. Their names were not divulged. They gave their data only for academic as well as research use.

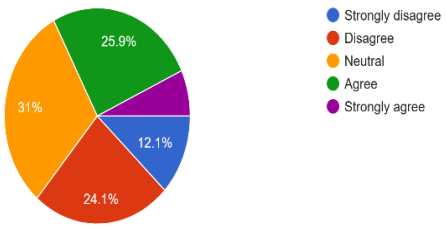
RESULTS AND ANALYSIS

This section dives into the heart of the study, turning raw survey data into a clear picture of the student experience. We explore how personal motivations and academic hurdles shape the way future pharmacists learn and grow in Bangladesh. By listening to these student voices, we can identify the practical changes needed to build a more successful and professional healthcare future.

1.Does the current pharmacy syllabus meet the healthcare needs of people in Bangladesh?
58 responses

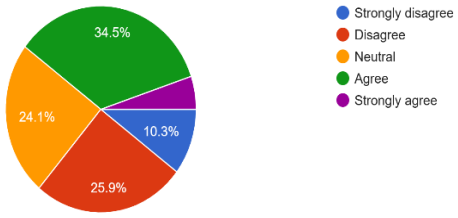


2. Does undergraduate pharmacy education give enough importance to clinical pharmacy and patient care?
58 responses



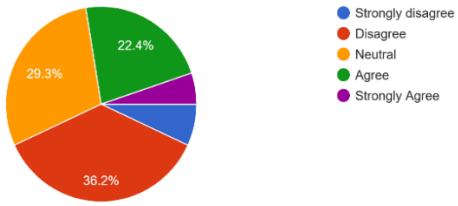
3. Do you receive enough training in research methods and scientific writing during your pharmacy studies?

58 responses



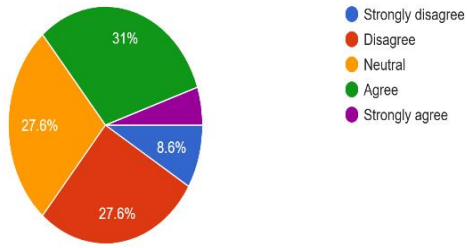
4. Is the pharmacy syllabus updated regularly based on international standards (such as WHO and FIP)?

58 responses



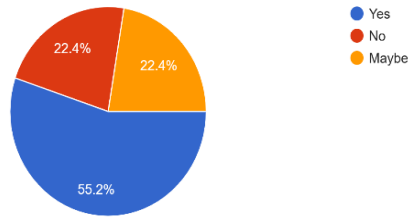
5. Do you get enough practical training in hospitals during your studies?

58 responses



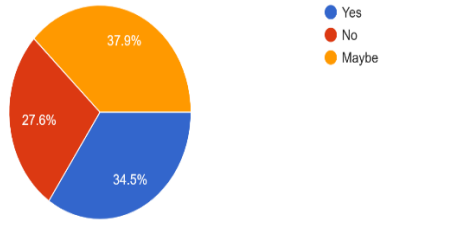
6. Does training in industries and hospitals help you gain real-life professional skills?

58 responses



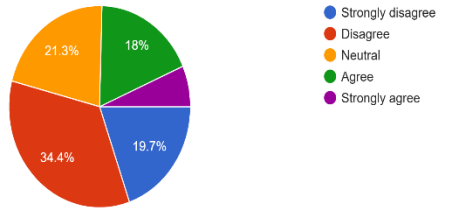
7. After graduation, do you feel ready to take part in clinical decisions for patient care?

58 responses



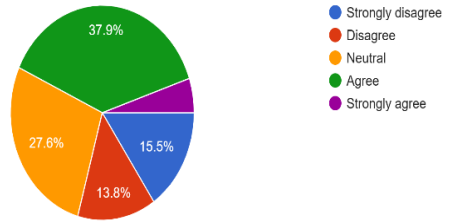
8. Do universities in Bangladesh provide enough facilities and financial support for pharmacy research?

61 responses



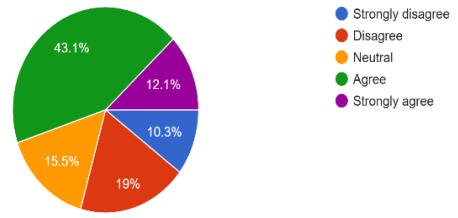
9. Is research done together with teachers good enough to be published in well-known international journals?

58 responses



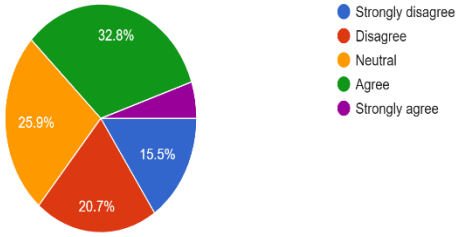
10. Does cooperation between hospitals and universities improve the quality of pharmacy research?

58 responses



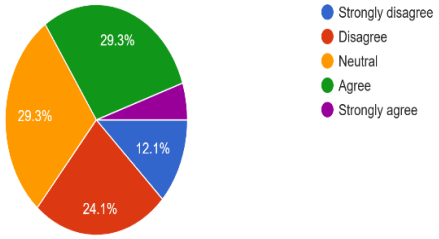
11. Do pharmacists have a clear and respected role in drug regulation and drug safety in Bangladesh?

58 responses



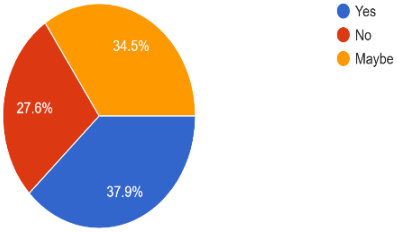
12. Do pharmacy graduates receive enough training to work in regulatory affairs and health policy organizations?

58 responses



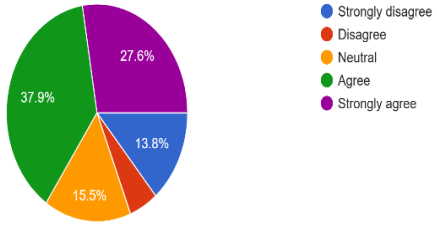
13. Does pharmacy education prepare graduates for digital health, artificial intelligence, and data-based pharmacy work?

58 responses



14. Do you think strong policy changes are needed to improve the pharmacy profession in Bangladesh in the long term?

58 responses



This study analyzed survey responses from 59 pharmacy students in Bangladesh to understand their views about the quality of education, practical training, and readiness for professional work.

Overall, the results show that many students are not satisfied and feel unsure about the current pharmacy education system. Although 55.9% of students said that industrial and hospital training helps them gain real-life skills, only 30.5% felt that they receive enough hospital-based practical training during their studies. Many students either disagreed or stayed neutral, which means that practical exposure exists but is not enough to make students confident.

When asked about clinical readiness, only 35.6% of students said they feel ready to take part in clinical decision-making after graduation. On the other hand, 27.1% said they are not ready, and 37.3% were unsure. This shows that many students lack confidence in their clinical skills, which is worrying because pharmacy is directly related to patient safety and healthcare.

Regarding preparation for future pharmacy roles, such as digital health, artificial intelligence, and data-based pharmacy work, student opinions were mixed. While 39% believed that the current curriculum prepares them for these new areas, 27.1% disagreed and 33.9% were unsure. This indicates that the curriculum is not clearly aligned with modern healthcare needs.

Analysis and Discussion:

This section analyzes the findings of the survey and links them with the questions of the research to identify key problems existing in pharmacy education in Bangladesh. It concentrates on student motivation to remain enthusiastic, their preparation level, learning quality, and efficiency of the current selection procedure. With findings of this research, solutions are provided to bring improvements to education quality and performance outcomes.

RQ1: What factors indicate dissatisfaction with current pharmacy education in Bangladesh?

From the above results, the major dissatisfaction categories identified include insufficient hands-on practice experience, lack of confidence in professional skills, as well as confusion about skills for development in the pharmacy profession. From the survey answers, some respondents were represented as either being 'neutral' or negative in their answers.

These findings are consistent with previous research. Pharmacy education in Bangladesh is normally more theoretical than practical; hence, students complete their degree program feeling inadequate after graduation.

RQ2: Does the current system adequately prepare students for health-related professional roles?

The statistics indicate that the current education system does not prepare students effectively for employment in health care. About two-thirds of students indicated they are not ready or not sure if they will be involved in making clinical decisions. This implies that students can complete their training program without acquiring some significant skills in patient care. Pharmacists are integral to medication safety and health care; therefore, this is a challenge and possibly will impact health care delivery in Bangladesh.

Solution Validation

The proposed solution of introducing an early pre-curriculum with a benchmark requirement is practical and logically strong. The main purpose of this solution is to identify students who are not academically prepared or not suitable for pharmacy education at an early stage, before they progress further in a health-related discipline.

This type of system is already used successfully in other educational institutions. For example, BRAC University provides a pre-curriculum or foundation courses for students who are weak in English. Only students who successfully complete this stage are allowed to continue in the main academic program. As a result, the university is able to ensure that students have a minimum required skill level, and overall academic quality improves.

Applying a close approach in pharmacy education can help filter out underprepared students early. Those students who fail to meet the benchmark can shift to other fields where they may perform better, instead of completing a full degree without proper skills. At the same time, motivated and capable students will remain in the program, leading to better classroom interaction, improved laboratory performance, and stronger professional development.

This solution is consistent with the research findings, that show low confidence, weak practical readiness, and strong student support for stricter selection. Therefore, introducing a pre-curriculum and early academic screening is a valid and effective way to improve pharmacy education quality and ensure better healthcare outcomes in Bangladesh.

CONCLUSION

(A) Concluding Remarks

This study shows that pharmacy education quality in Bangladesh is strongly affected by how students are selected and how prepared they are academically. Many students join pharmacy programs due to external pressure, while weak practical training and poor admission screening reduce learning quality. The study highlights the need to focus on selecting motivated students and supporting them through early academic evaluation and better laboratory training to ensure competent pharmacy graduates.

(B) Limitation of the Study

The study used an online survey, so the results reflect personal opinions and may not represent all pharmacy students. The sample size was limited, and faculty or policymakers were not directly involved, which may affect the depth of the findings.

(C) Future Research Scope

Future studies can include larger samples, interviews with teachers and policymakers, and follow-up studies to assess the impact of stricter admission and early filtering systems. This will help further improve pharmacy education in Bangladesh.

REFERENCES

World Health Organization. (2012). World health statistics 2012. Available at https://www.who.int/docs/ world-health-statistic-reports/world-health-statistics-2012.pdf

University Grants Commission of Bangladesh (2024). Available at https://ugc.gov.bd. Accessed on 20 December 2025.

Anderson, C., Bates, I., Brock, T., & Brown, A. N. (2009). *Needs based education in the context of globalization. American Journal of Pharmaceutical Education*, 73(4), 1–7.

Islam, M. A., Gunaseelan, S., Khan, S. A., Khatun, F., & Talukder, R. (2014*). Current challenges in pharmacy education in Bangladesh: A roadmap for the future. Currents in Pharmacy Teaching and Learning.*

Islam, M. A., Khan, S. A., Gunaseelan, S., & Talukder, R. M. (2018*). Physician perceptions of integrating pharmacists into healthcare in Bangladesh* 48(4), 328–333.

Micallef, R., & Kayyali, R. (2020). *Why we should create uniform pharmacy education requirements across different countrie*s 12(5), 499–503.

Mohiuddin, A. K. (2020). *Prospect of Tele-Pharmacists in Pandemic Situations: Bangladesh Perspective. Journal of Health Care and Research,* 1(2), 72–77.

Mohiuddin, A. K. (2020). *Tele-pharmacists' prospects in pandemic situations: A Bangladesh scenario*. **International Journal of Coronaviruses**, *1*(1). ISSN 2692-1537.

Wong, G., Maragha, T., Taheri, A., & Yeung, J. (2025). *Student perspectives on challenges and success in experiential pharmacy education*. **American Journal of Pharmaceutical Education, 89**(12), 101887.