

# Evaluation of the Weightage on Dermatological Pharmacotherapy in Undergraduate Pharmacology Education of Bangladesh

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## ABSTRACT

**Background:** The aim of pharmacology education is to make graduate competent enough to prescribe safely and effectively. So it is expected that pharmacology education would incorporate all the important aspects of prescribing. Skin diseases are associated with a considerable disease burden in Bangladesh and mostly treated in primary care settings by junior doctors.

**Materials and methods:** This descriptive cross-sectional study was conducted to analyze the undergraduate pharmacology curriculum and written question papers (SAQ) of MBBS curriculum of 07 different universities (Bangladesh University of Professionals, University of Dhaka, University of Chittagong, University of Rajshahi, Shahjalal University of Science and Technology, University of Science and Technology, Chittagong and Gono Bishwabidyalay) of Bangladesh in last 10 years (January 2010 to November 2019). The evaluation was conducted through searching certain key phrases.

**Results:** In Pharmacology & Therapeutics portion of the MBBS curricula, there was not a single hour to teach dermatological pharmacotherapy. Highest presence of dermatological pharmacotherapy related question was observed in Bangladesh University of Professionals (BUP) followed by University of Rajshahi (RU). And statistically significant difference ( $p < 0.00001$ ) was observed among seven universities.

**Conclusion:** Current study revealed negligible presence of dermatological pharmacotherapy in undergraduate pharmacology education of Bangladesh over 10 years period.

**Key words:** Dermatological pharmacotherapy; Medical education; Pharmacology education; Written question papers.

## Introduction

Skin diseases are among the most common health problems worldwide and are associated with a considerable burden. The burden of skin disease is a multidimensional concept that encompasses psychological, social and financial consequences of the skin disease on the patients, their families and on the

society.<sup>1</sup> A community-based study in the USA found that a third of the population had a skin condition needing a single visit to a physician.<sup>2</sup> Infections and infestations are more common in the developing countries whereas, owing to a particular skin type, skin cancers are more prevalent in the developed countries. Skin diseases account for a higher proportion of outpatient department in developing countries including Bangladesh.<sup>3</sup>

The goal of undergraduate medical education is to prepare learners who are skilled enough to prescribe safely and effectively.<sup>4</sup> A fair understanding of pharmacology is needed for prescribing rationally.<sup>5,6</sup> Although World Health Organization (WHO) urges for outcome-based learning in pharmacology, focusing on practice rather than on theory, researchers found growing concerns about inadequacy of pharmacology education to prepare future physicians as rational prescribers.<sup>7-10</sup>

Bangladesh, a highly populated and resource constraint country, has been trying to provide quality education and training facilities for future physicians through taking initiatives for curricular transformations. Our medical education program was inherited from colonial British and then the Pakistan period. The first documented curriculum was developed in 1988 by Center for Medical Education, which was supposed to

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Date of Submission : 21st November 2022  
Date of Acceptance : 10th December 2022

be community oriented and competency based.<sup>11</sup> Later, Undergraduate curriculum 2002 was developed and implemented with the aim to provide the graduates with proper knowledge, skills and attitude.<sup>12</sup> After a decade, MBBS curriculum 2012 has been implemented from session 2012-13.<sup>13</sup> Several studies were conducted in Bangladesh to evaluate pharmacology education (curriculum, textbooks and question papers) from different perspectives.<sup>14-21</sup> In this backdrop, current study was conducted to evaluate pharmacology curriculum and written question papers of last 10 years with the attempt to find out the weightage and trend of dermatological pharmacotherapy in undergraduate pharmacology curricula and written assessment system.

### Materials and methods

A descriptive cross-sectional study was designed to meet the study objective and was conducted from January 2021 to March 2021. Ethical approval was taken from the Institutional Review Board (IRB) of Combined Military Hospital (CMH) Bogura, Bangladesh.

### Selection of Key Phrases Relevant to Dermatological Pharmacotherapy

In order to review the curricula and written question, the principle of conceptual mapping was applied by a panel of experts (3 senior pharmacologists) and the following key phrases were identified: dermatological pharmacotherapy, drugs used in dermatology, drugs used in skin diseases, infective skin diseases, non-infective skin diseases, drugs used fungal skin diseases, drugs used in acne, drugs used in scabies, drugs used in allergic skin diseases. Methodology of current research was adopted from a similar study conducted in Bangladesh.<sup>18</sup>

### Undergraduate Pharmacology Curriculum (MBBS)

An undergraduate pharmacology curriculum was searched for the mentioned key phrases in the soft copies of curricula and then the area was identified, where the key phrases were mentioned.

### Written Question Papers of Undergraduate Pharmacology

Pharmacology written question papers (SAQ) of last 10 years (January 2010 to November 2019) of all 7 universities offering MBBS degree (Bangladesh University of Professionals, University of Dhaka, University of Chittagong, University of Rajshahi, Shahjalal University of Science and Technology, University of Science and Technology, Chittagong and Gono Bishwabidyalay) were collected and included in the study for analysis. Total 131 question papers were collected for review. Same key phrases were searched and the number of occasions they appeared in question papers was calculated and weightage given in written

question papers were assessed. The Pharmacology written question papers (SAQ) contain total 84 marks with options, where students need to answer a maximum of 70 marks. Weightage was calculated as the number reflecting dermatological pharmacotherapy question out of 84 marks.

Data were compiled, presented and analyzed using Microsoft Excel 2007, and was expressed as mean percentage (Standard deviation). One Way Analysis of Variance (ANOVA) was done to determine the significance of difference between the mean percentages. Statistical analysis was performed at a 95% confidence interval and significance was determined at  $p < 0.05$ .

### Results

Table I showed that out of total 200 hours of teaching in Pharmacology and Therapeutics portion of the MBBS curricula, not a single hour was allocated to teach dermatological pharmacotherapy.

**Table I** Allocated Teaching Hours for the Topics Those Mentioned Selected Key Phrases in Undergraduate Pharmacology Curriculum

Key phrase	Teaching learning strategies (allocation in hours)			
	Lecture	Tutorial	Practical	Clinical case reports
Dermatological pharmacotherapy	100	30	50	20
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Total 131 SAQ papers of undergraduate pharmacology written question papers dated from January 2010 to November 2019 were analyzed. Mean percentage of marks allocated for dermatological pharmacotherapy was  $0.68 \pm 1.1$  over last years. Highest presence of dermatological pharmacotherapy related question was observed in Bangladesh University of Professionals (BUP) followed by University of Rajshahi (RU). And statistically significant difference ( $< 0.00001$ ) was observed among seven universities (Table II).

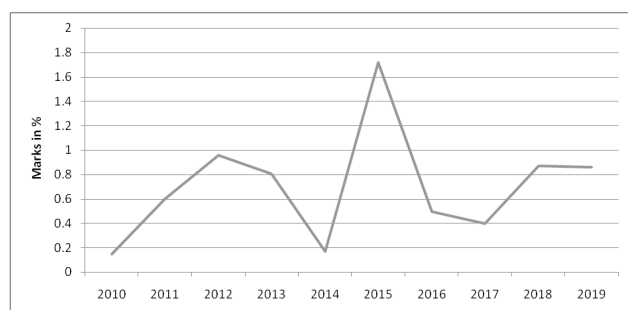
**Table II** Weightage of Dermatological Pharmacotherapy in Written Question Papers of Undergraduate Pharmacology

DU (Mean $\pm$ SD)	CU (Mean $\pm$ SD)	RU (Mean $\pm$ SD)	SUST (Mean $\pm$ SD)	USTC (Mean $\pm$ SD)	GB (Mean $\pm$ SD)	BUP (Mean $\pm$ SD)	Total (Mean $\pm$ SD)	p value
0.67 $\pm$ 1.2	0.00 $\pm$ 0.00	1.1 $\pm$ 1.6	0.1 $\pm$ 0.3	0.3 $\pm$ 1.1	1.0 $\pm$ 1.6	1.6 $\pm$ 1.9	0.68 $\pm$ 1.1	< 0.001

Data expressed as mean percentage (SD) and analyzed by One Way Analysis of Variance (ANOVA),  $p < 0.05$ -Significant.

Figure 1 represented the trend of dermatological pharmacotherapy (i.e. mean percentage) in pharmacology written question papers throughout the last ten years.

There was gradual increase of weightage but sharply declined from 2013-14, later a spike was observed in 2015 and again declined.



**Figure 1** Trend of weightage on dermatological pharmacotherapy in written question papers

### Discussion

Undergraduate medical education is quite unique in its own way as it makes foundation for future prescribers. Curriculum is the roadmap for medical education which directs aims and objectives, contents, learning methods and assessment.<sup>22</sup> As assessment sets learning priorities, it's crucial to ask questions about required competencies for practical life.<sup>23</sup> Current study was conducted to assess the weightage and trend of dermatological pharmacotherapy in undergraduate pharmacology education of Bangladesh for last 10 years.

Skin conditions are one of the most common chief complaints encountered in the primary care setting.<sup>24</sup> Current study found that there was not a single teaching hour is allocated for dermatological Pharmacotherapy in 200 teaching hours of undergraduate pharmacology. Absence or insufficient teaching hours for important topics of prescribing in pharmacology education was also revealed in previous studies conducted in Bangladesh.<sup>16,18,19</sup> Negligible presence of questions related to dermatological pharmacology in written assessment of professional exams of different universities was observed in this study, and this finding was similar to relevant studies conducted in our country.<sup>14,15</sup> Interuniversity variation in weightage of dermatological pharmacotherapy was also found, and this finding is concordance with published literatures which showed interuniversity variation of pharmacology question papers in regards to curricular objectives, content coverage, nation health priorities and problem-based problem.<sup>20,21</sup>

Skin diseases comprise a certain percentage of patient bulk in outdoor department of primary care in Bangladesh and treated by MBBS doctor.<sup>24</sup> So appropriate weightage on dermatological pharmacotherapy might improve quality of healthcare as well as quality of life of a large group of patients.

### Conclusion

Current study showed negligible presence of dermatological pharmacotherapy in undergraduate pharmacology education in last 10 years and inter-university variation of weightage was observed.

### Disclosure

All the authors declared no competing interests.

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