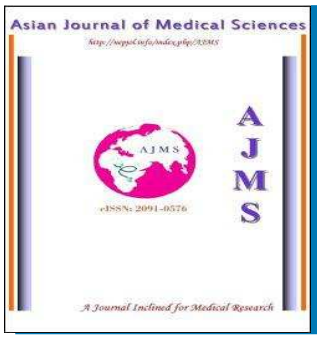

PHARMACOLOGY CURRICULUM AND CAREER OPTION IN DENTAL AND BASIC MEDICAL SCIENCES: GRADUATING DENTAL STUDENTS' PERSPECTIVE UNDER KATHMANDU UNIVERSITY IN NEPAL

ORIGINAL ARTICLE, Vol-5 No.2

Asian Journal of Medical Science, Volume-5(2014) http://nepjol.info/index.php/AJMS

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"On students' view, pharmacology curriculum is sufficient for graduating dental students under Kathmandu University and students have more preference in dental sciences (75%) for post graduation."

ABSTRACT

Objective: Present study was aimed to obtain the graduating dental students' view on current pharmacology curriculum for Bachelor of Dental Surgery (BDS) under Kathmandu University (KU) and their perspective on preclinical and dental sciences as future career opportunity.

Materials and Methods: This was questionnaires based observational study among BDS students. Forty eight completed questionnaires were collected and analyzed. Chi square test was used whenever applicable and level of significance was set at 5%.

Results: Student views showed that present pharmacology curriculum under KU is enough (62.5%, P<0.001) though the relevance of the course is variable. Significantly higher number of students opined that pharmacology should be taught beyond first and second years (54.2%, P<0.001). More students wanted to pursue post graduation in dental sciences (75%, P<0.001). Subject of choice in preclinical science was forensic medicine (37.5%, P<0.001) followed by pharmacology (25%, P<0.001) whereas it was orthodontics and prosthodontics (20.8%, P<0.05) followed by conservative dentistry and endodontics (16.7%, P<0.05) in dental sciences.

Conclusion: On graduating dental students' view, current pharmacology curriculum is enough and inclusion of pharmacology subject beyond first and second years can be considered. Their career option was 75% in dental sciences and 12.5% in basic medical sciences for post graduation.

Keywords: Bachelor of Dental Surgery, dental education, feedback, Kathmandu University, Pharmacology.

INTRODUCTION

Pharmacology course is one of the staple subjects of preclinical Bachelor of Dental Surgery (BDS) curriculum in Kathmandu University. There are many colleges in Nepal under Kathmandu University, Tribhuban University and B P Koirala Institute of Health Sciences which run BDS programs. Pharmacology subject is being taught during first and second academic years in these universities. Under KU, Kantipur Dental College Teaching Hospital and Research Center (KDCTH) was the first college in Nepal to get affiliation to start the BDS program.[1] So, during the conduct of this study, KDCTH was the only KU affiliated college in which students had entered the clinical phase after completion of two years preclinical sciences course. Additionally, KU started bridge course for BDS graduates so as to make them be qualified for the post graduation in preclinical sciences (basic medical sciences) on 1 April 2011.[1] So in this study students who finished their second academic year were enrolled. Graduating dental students have the career options in both master of dental surgery in dental sciences (oral medicine and radiology, conservative dentistry and endodontics, periodontics, pedodontics, orthodontics, oral and maxillofacial surgery, prosthodontics, forensic odontology, oral pathology and community dentistry) and doctor of medicine in preclinical sciences in anatomy, biochemistry, forensic medicine, pharmacology, physiology and microbiology. Students may have their own views on pharmacology subject, its content and relevance, way of teaching, years of teaching and methods of evaluation. Similarly, their subject of choice in postgraduate study may differ from student to student.

In any type of education, students' feedback is an essential component. Effective feedback reinforces good practice and has a motivating effect on the learners, teachers and the policy makers and it helps to know the students' views on different aspects.[2,3] So, this study focused on the students' perceptive on current pharmacology curriculum for BDS students and their views and preferences on the post graduation both in preclinical and dental sciences by questionnaire based feedback system.

MATERIALS AND METHODS

To get the effective, unbiased and clear feedback from the students, a structured and pretested questionnaire was designed. The questionnaire contained 12 open and close ended questions- seven close ended , four mixed (closed ended with option to write their answer) and one open ended questions. Students were instructed to fill up the forms without disclosing their identity and feel free while responding the questionnaire as it didn't have any bearing with their class performance, student-teacher relationship or future exam scores so as to obtain genuine, valid and frank responses. [3,4-7] Institutional ethical clearance and students' verbal consent was taken before starting the study and was conducted in May 2012. Fifty six questionnaires were distributed to the students at the end of their second year when all the pharmacology classes were over at KDCTH and only 48 completed questionnaires were returned. Level of significance (P value) was set at or less than 5% and Chi square test with Yates correction was applied as test of significance wherever applicable by using Epi Info Version 6 StatCalc.

RESULTS

Students were 19 to 24 years old (20.48±1.2SD) with 14 (29.2%) males and 34 (69.8%) females. Figure 1 shows students' view on pharmacology curriculum, relevance of pharmacology course and addition or removal of any topic or system from the existing curriculum. Sixty two and half percent (P<0.001) students considered that existing pharmacology curriculum was 'enough' for them. Similarly, 79.2% (P<0.001) and 91.6% (P<0.001) opined that any addition or removal of the topic was not required from existing pharmacology curriculum respectively under KU though 20.8% percent suggested for the addition of reproductive system in the curriculum. However, contradictory views were obtained on relevance of the pharmacology course for them (Figure 1).

Students' responses on mode of teaching and academic years for pharmacology course have been shown in figure 2. Liquid Crystal Display (LCD) projector (58.3%, P<0.001) and 'board and marker' (33%) were the most favored mode of teaching aids. Majority of students (54.2%, P<0.001) wanted the pharmacology subject to be taught in other years also besides 1st and

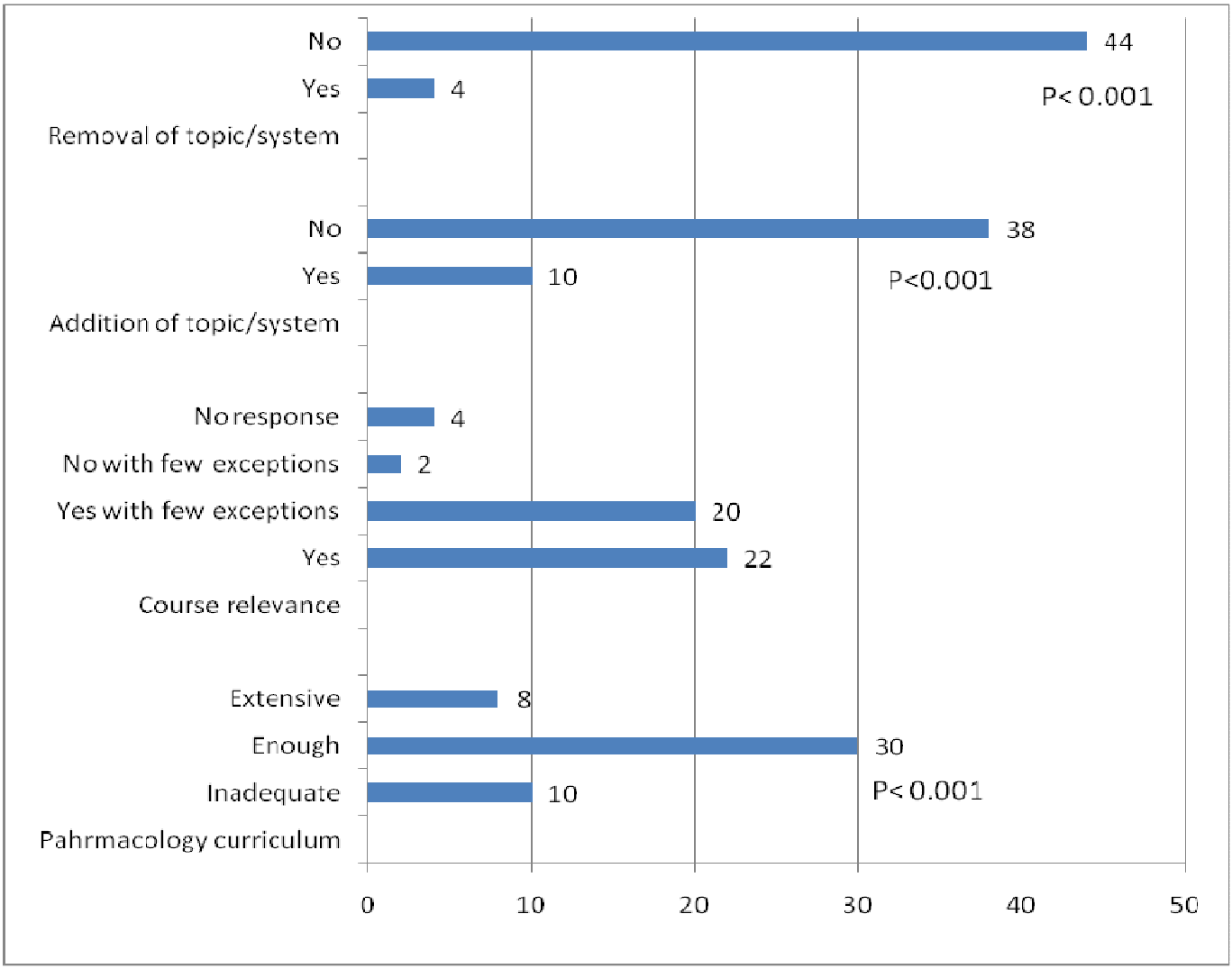

Fig 1: Students' view on pharmacology curriculum, relevance of pharmacology course and addition or removal of any topic or system from the existing curriculum.

2nd years.

Students' responses on pattern of tests and types of questions in pharmacology examination have been presented in figure 3. Significantly higher number of students opted for the frequent assessment (after each topic- 29.1% and after each system- 62.5%, P<0.001) and combinations of Short Answer Questions (SAQs) and Multiple Choice Questions (MCQs) for the assessment modality (87.5%, P<0.001).

Four percent of students did not know that they can pursue post graduation in preclinical medical sciences Significantly higher number of students (75%, P<0.001) wanted to do post graduation in dental sciences whereas only 12.5% students opted for post graduation in preclinical sciences (Figure 4).

Subject choice for the post graduation was highest for forensic medicine (37.5%, P<0.001) followed by pharmacology (25%, P<0.001) and least for physiology, microbiology and biochemistry (4.2%) in preclinical sciences where as highest for orthodontics and prosthodontics (20.8%, P<0.05) followed by conservative dentistry and endodontics (16.7%, P<0.05) and least for pedodontics (4.2%) in dental sciences (Table 1).

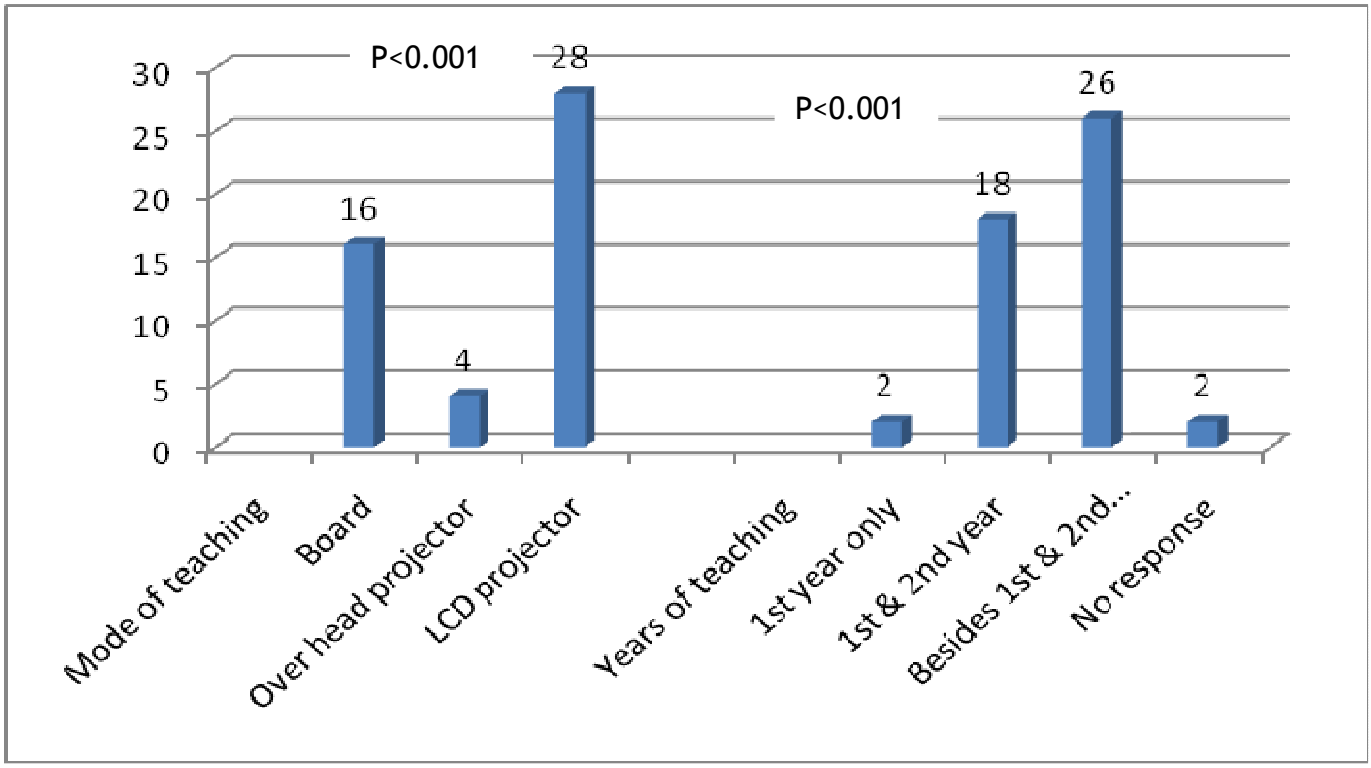

Fig 2: Students' responses on mode of teaching and academic years for pharmacology course. LCD- Liquid Crystal Display

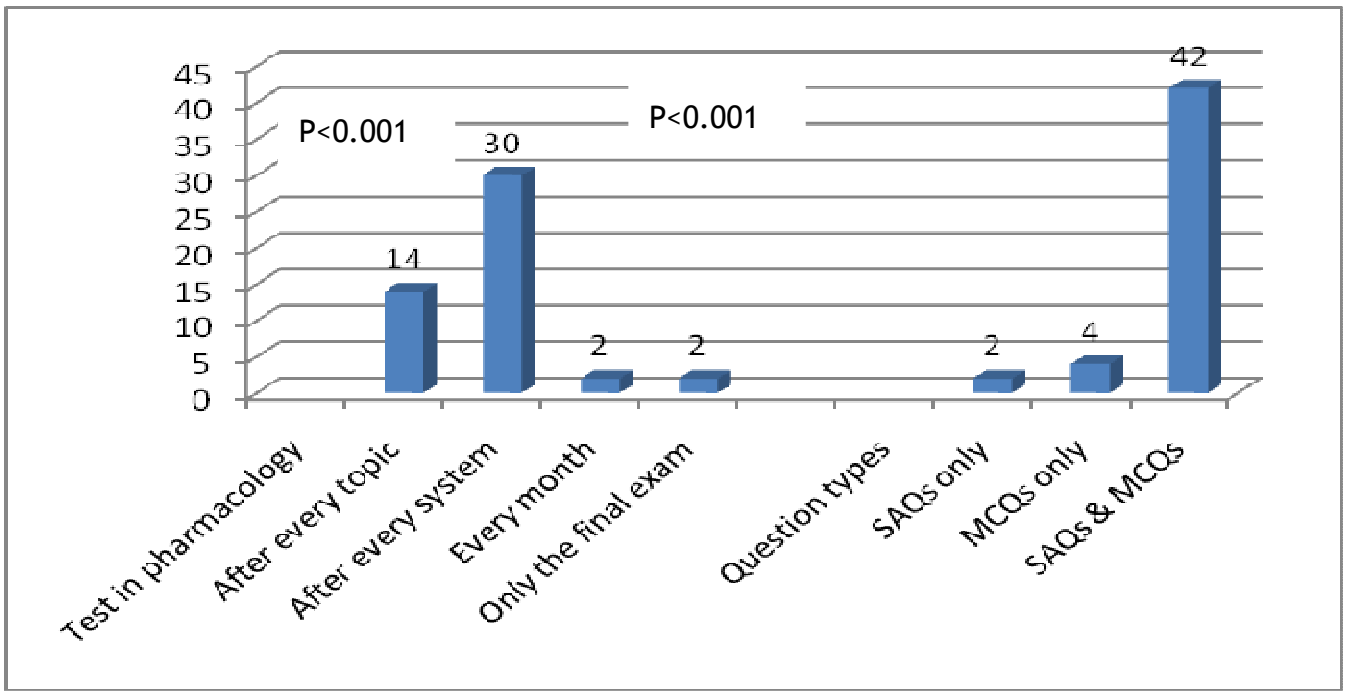

Fig 3: Students' response on pattern of tests and types of questions in pharmacology examination. SAQs- short answer questions, MCQs- multiple choice questions.

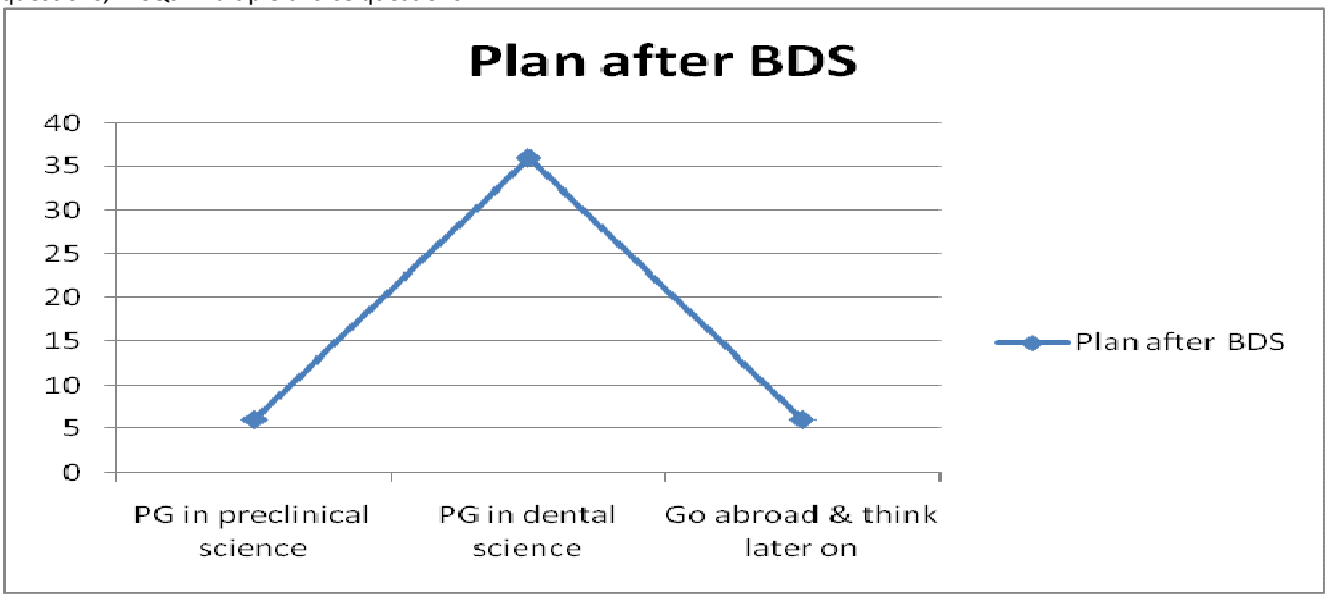

Fig 4: Students' plan after the completion of graduation in dentistry. PG- post graduation, BDS- Bachelor of Dental Surgery.

Table 1: Students' subject of preference for post-graduation in preclinical medical and dental sciences

Preclinical Medical Sciences			Dental Sciences		
Subject	Frequency (%)	P value	Subject	Frequency (%)	P value
Forensic Medicine	18 (37.5)	0.000*	Orthodontics	10 (20.8)	0.002*
Pharmacology	12 (25.0)	0.000*	Prosthodontics	10 (20.8)	0.002*
Anatomy	4 (8.3)	0.053	Conservative Dentistry & Endodontics	8 (16.7)	0.005*
Microbiology	2 (4.2)	0.494	Oral Surgery	6 (12.5)	0.026*
Biochemistry	2 (4.2)	0.494	Pedodontics	2 (4.2)	0.494
Physiology	2 (4.2)	0.494	More than one subject	12 (25)	0.000*
No response	8 (16.7)	0.005*	No response	0	NA

* P<0.05, NA- not applicable

DISCUSSION

Regarding the pharmacology curriculum for BDS course under KU, present findings suggest that majority of the students are satisfied with the course content. However, there was no uniformity pertaining to the relevance of pharmacology curriculum as 45.8% students opined that the course was relevant whereas 41.6% responded to 'yes with few exceptions' and 4.2% said the course was irrelevant with few exceptions (Figure 1). Such a variation might be due to students' attitudes, intelligence levels, feelings, experiences, perceptions and students and teachers perceptions of both positive and negative attributes. [6,8] Majority of the students preferred for LCD projector (58.3%, P<0.001) and 'board and marker' (33%) during lecture hours and the reason for this needs further exploration. This finding is in consonant with previous study done in Nepal on B Sc Nursing students (Bachelor of Science in Nursing) in which 95-100% students preferred LCD mode of

presentation.[9] Similarly, significantly higher number of students (54.2%, P< 0.001) wanted pharmacology subject to be taught for them in other years also besides 1st year 2nd years and reason for this opinion was not explored in the present study.

As far as evaluation system is concerned for BDS students, findings showed that students want frequent assessments and both SAQs and MCQs as the tool of evaluation. Till 2011 academic session, KU has adopted only SAQs for the assessment tool both for BDS and Bachelor of Medicine and Bachelor of Surgery (MBBS) students. However, MBBS students who enrolled in 2011 academic session under KU are being assessed on the basis of MCQs, SAQs and Problem Based Questions. [10] As per the findings, MCQs can be included in evaluation tool to assess the students' cognitive domain though both SAQs and MCQs can't test the affective domain effectively. [11] Previous findings on students' feedback have shown that attempting MCQs required student's critical thinking, experience and practice. Moreover, MCQs are more cost effective means for the students' cognitive domain assessment .[11]

Ninety six percent graduating dental students under KU were aware of the fact that they could pursue their career in preclinical sciences and 12.5 % want to do post graduation in preclinical sciences. However, similar figure (12.5%) opted to go abroad after completion of BDS course. Significantly higher number of graduating dental students (75%, P<0.001) wanted to stick to their field by choosing dental sciences for their career option in the future. This showed different predilection for the future career plans by BDS students, and post graduation in preclinical sciences is also one of the options for them. The order of preference for preclinical science was forensic medicine (37.5%), pharmacology (25%), anatomy (8.3%), microbiology (4.2%), biochemistry (4.2%) and physiology (4.2%). Similarly, the order for preference for dental sciences was orthodontics and prosthodontics (20.8%, P<0.05) followed by conservative dentistry and endodontics (16.7%, P<0.05), oral surgery (12.5%) and least for pedodontics (4.2%). Different reasons for the selection of different subjects by the students need to be studied further.

Limitations of the study include small sample size, failure to take students' attitudes, intelligence levels, feelings, perception and experiences into consideration which may affect the responses.[8] Although students age and sex has been reported during study, it is not considered in association with the responses. However, questionnaire has been adopted from the different models designed for nursing, dental and medical students so as to obtain the valid and reliable responses. [3,4-7,12,13]Additionally, students studying at other universities in Nepal have not been included in the present study.

CONCLUSION

On graduating dental students' perspective, present pharmacology curriculum under KU is enough though the relevance is variable. Seventy five percent of students opted masters degree in dental sciences whereas 12.5% opted for preclinical sciences. Subject of choice in preclinical science was forensic medicine followed by pharmacology. And, subjects of choice in dental science were orthodontics and prosthodontics followed by conservative dentistry and endodontics.

Acknowledgement

We would like to extend our sincere thank to the students at KDCTH who participated in this study to give their valuable comments and responses.

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Authors Contributions:
KRP: Concept, design, data collection, analysis, manuscript preparation and finalization.
MS: Data collection, manuscript preparation, proofreading.

Conflict of Interest: None

Date of Submission: 15.9.2013
Date of Peer review: 22.9.2013
Date of submission of revised version: 25.9.2013
Date of peer review: 25.9.2013
Date of Acceptance: 25.9.2013
Date of Publication: 10.1.2014