

Perceived Competence of Dental Graduates in General Practice amongst Interns of Mathura City, North India

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Abstract

Introduction: Dental school education must prepare their graduates for competence in general practice, which in turn will equip them to deal with the challenges of the future. The curriculum must encourage students to reflect on learning experiences and self-assessment. **Aim:** To assess the competence of dental graduates in general practice. **Materials & Methods:** A questionnaire study was conducted on 125 dental students of Mathura city who filled an 18 variable questionnaire which included variables to assess self-perceived competency for general dental practice. **Results:** The mean age of respondents was 25.4 years. The variable to render dental education proficiently had the highest mean score (4.80) while ability to manage an anxious patient on the dental chair had the lowest mean score of 2.80. **Conclusion:** Evidence based learning in dental education needs to be practiced to improve the competency among dental graduates.

Keywords: Competence; Curriculum; Dental practice; Interns

Introduction

Dental practice is both demanding and challenging. A better understanding of the disease process, advancements in technology and dental materials has further increased the scope of this profession. Effective communication skills form the foundation of successful dental practice. Treatments rendered by the dentist include a wide range of procedures from diagnosis to complex therapies.^[1]

Life style of people has improved with increasing awareness and better socio – economic status among the general population. People are adopting preventive, therapeutic, aesthetic and rehabilitative dental treatment moving beyond extractions. But the dental curriculum in India is not modified or changed much to accommodate for the newer treatment provision.^[2,3]

Competency is defined as possessing the necessary skill or knowledge to do something successfully. For a dental student it is described as having the necessary skills, understanding and professional values of an individual ready to start an independent dental or allied dental care practice.^[4,5]

Hence, competency of the dental students based on the present dental education in India was assessed for the professional effectiveness of good clinical practice.

Materials and Methods

The present study was a cross sectional, questionnaire study done to assess the competency of dental students' in general dental practice. Interns of a dental college from Mathura city formed the study population. The permission to carry out the study was taken from the Institutional Ethical Committee of KD Dental College, Mathura and informed consent of all participating interns was taken.

Dental education in India is rendered by 310 dental colleges. Uttar Pradesh has 32 dental institutions training students for dentistry. The city was chosen randomly. Sample size for the present study was empirically calculated to be N=164, at 5%

error, based on Rafeek et al^[6] and Prabhu S et al.^[7] Those interns who had completed internship and who willingly participated in the study were included as they were exposed to all clinical branches.

An 18 close ended, pre-tested, validated questionnaire was used to assess self-perceived competencies which were self-administered among interns of the chosen dental college. Students were briefly explained regarding the purpose of the study before the study, also ensuring confidentiality. The examiner obtained permission from each selected dental college principal/dean before conducting the study. The students were asked to fill the questionnaire after being seated in a classroom, and were instructed to not discuss among themselves in order to avoid any cross over effect. The examiner himself collected back the questionnaire once it was filled. Forms which were incomplete were excluded from analysis.

Total 5 domains were used for the questionnaire, with a total of 17 questions. Diagnostic and radiographic domain had 5 variables evaluated in it, like ability to complete a thorough medical/dental history, diagnose and treat dental caries and gingivitis, screen for oral cancer and pre-cancerous lesions, recognise and refer complicated cases and efficiency in shooting and interpreting radiographs.

Preventive domain included three questions like rendering dental health education, implementing infection control procedures and being able to function with dental auxiliaries effectively. Palliative domain had variables like managing medical emergencies in dental chair and ability to manage and control pain. Treatment domain elicited questions like

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How to Cite this Article: Ingle NA. Perceived Competence of Dental Graduates in General Practice amongst Interns of Mathura City, North India. *Ann Med Health Sci Res.* 2021;11:1293-1295.

Table 1: Perceived competency among dental interns towards general practice

Perceived competency variables	Mean	Sd
Complete a thorough medical history	4.12	0.70
Diagnose dental caries and gingivitis	4.51	0.50
Screen for oral cancer and pre – cancerous lesions	3.28	0.64
Recognise and refer complicated cases	3.80	0.74
Develop a comprehensive treatment plan	4.08	0.95
Shoot and interpret radiographs	4.10	0.53
Render dental health education and obtaining informed consent	4.80	0.40
Implement infection control procedures	4.49	0.50
Able to function with dental auxiliaries effectively	4.18	0.75
Manage emergencies in dental chair	3.09	0.54
Manage and control pain	3.60	0.81
Diagnose and treat periodontal condition	3.51	0.66
Diagnose and treat endodontic condition	3.32	0.64
Make and deliver complete denture	3.33	1.10
Make and deliver removable prosthesis	3.52	0.92
Overall preparedness for general dental practice	3.41	0.80
Handle practice management issues	3.72	0.90
Manage anxious patients	2.80	0.60

diagnosing and treating periodontal condition and endodontic lesions, to make and deliver complete dentures and removable prosthesis. Management domain elaborated variables like overall preparedness for general dental practice, handling practice management issues and to manage anxious patients.

All the variables were rated on a 5 point scale, with score 1 as not at all competent to score 5 as being very competent. The data collected was transferred to spread sheets and was analysed using SPSS 20.0 version. The mean scores of each category were calculated. Independent t test was used to assess the significance for various parameters between genders. For all the tests, $p < 0.05$ was considered to be statistically significant.

Results

A total of 136 interns were taken from the selected college. Out of the 136 surveyed, 125 students formed the study population, as the rest forms were excluded as they were incomplete. This brought the response rate to 92%.

The mean age of respondents was 25.4 years. 21% were males and 79% of the interns were females. Table 1 represents mean scores of the self-perceived variables for competency to general practice. The parameters which had the highest mean scores were to render dental education 4.80, diagnosing dental caries 4.51, implementing infection control measures 4.10, able to function well with dental auxiliaries 4.18 and recording case history 4.12. The items with the lowest mean scores were, management of anxious patients 2.80, management of medical emergencies in the dental chair 3.09, screening for oral cancer 3.28, diagnosis and treatment of endodontic conditions 3.32 and make and deliver complete dentures 3.33 [Table 1].

Discussion

This cross sectional study was done to assess competency in interns regarding dental practice. “Competency” – is the integrity of several entities. Clinical competency is defined as the behaviour expected from beginning independent practitioners. This behaviour should include understanding, skills and values as an integrated response to the full range of circumstances

encountered in professional practice.^[8]

Benner points out five levels of competence – novice, advanced beginner, clinically competent, proficient and the expert in the gradations of a dental practitioner. The novice is a professional with no experience of any situation and who simply abides by the rules, making him inflexible and skills limited. The advanced beginner formulates his own concept based on the limited experience he has, generally with the advice of a mentor or tutor. The clinically competent realises his long term goals and goes for conscious, abstract, analytical contemplation of the problem. This level is what is expected out of an undergraduate dental student after his or her completion. The proficient analyses the situation in a comprehensive manner and plans with modification of the conventional treatment, with speed. Lastly, the expert has mastered over the situation with his enormous experience and can even handle situations when it is even unexpected.^[9]

The current scenario of dentistry is that each year, approximately 30000 number dental graduates are added to the already existing manpower.^[10] A great majority of the dental graduates dream of establishing clinical practice, followed by aspirations to pursue post-graduation or to move to a foreign country.^[11]

Approximately, 80% of interns felt they were adequately prepared to obtain informed consent all by themselves which was in contrast to the study findings of Seldin.^[12] Informed consent serves as a tool to protect the professionals from any medico – legal issues and also enhances trust between the patient and dentist.

None of them, while 9.6% of the interns felt they were poorly prepared to perform endodontic treatments, which is in contrast to the study findings of McGrath et al.^[13] This probably could be attributed to the poor access and root morphology variation which raises difficulties for interns. But with increasing patient awareness and media exposure, people intend to save their natural teeth, which emphasises the need of endodontic competency in the undergraduate curriculum.

20.8% of the students felt well prepared for rendering complete dentures which is similar to findings of Prabhu S et al. [7] which reported 32.9% in students. This was contradictory to the study findings reported by Swathi et al [14] for competence in complete dentures to be 44%.

Dental students as grown up adults show self-directed, goal – oriented and practical problem solving capability, especially those exhibiting problem based and case based learning methods when compared to the traditional theoretical framework of learning. Problem based learning approach improves competencies of students as it encourage student centered learning, teamwork, critical analysis and self-evaluation. [15] The undergraduate dental teaching curriculum must emphasise on problem based learning approach for increased competency.

Conclusion

The deficiencies in the general dental practice competency must be addressed by making the necessary amendments in the undergraduate dental curriculum. Also, continuing dental education on general dental practice management must be conducted in the undergraduate course span to address these deficits.

Competing Interests

The authors declare that they have no competing interests. All the listed authors contributed significantly to the conception and design of study, acquisition, analysis, and interpretation of data and drafting of the manuscript, to justify authorship.

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