



## Original Research Article

## Attitude and awareness of medical and dental interns towards collaborative practices in Davangere City- are we ready to head together?

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## ABSTRACT

**Purpose:** The interrelationship between oral and general health is proven by evidence considerably over the past decades. Thus collaborative health services for high-quality, patient-centred and holistic approach is essential for management of patients. The objectives of the study was to assess the attitude and awareness of dental and medical interns towards collaboration between medical and dental practices in Davangere city.

**Materials and Methods:** A cross sectional survey was conducted including 247 medical and dental interns of four colleges in Davangere city. An investigator designed, pilot tested questionnaire was used to collect data regarding demographic details and their attitude and awareness towards collaborative practices. The data was analysed and compared using Mann-Whitney U test.

**Result:** Out of 247 study participants, 139 (56.3%) belonged to medical fraternity and 108 (43.7%) were dental interns. 48.9% medical and 68.9% dental participants agreed for the similarity between dental and medical profession and 89.2% medical and 99% dental participants were aware that oral health is an integral part of general health. Majority (95.5%) of them agreed that collaborative services enhance quality of patient care and 91.0% of them suggested important role of government in medical and dental collaboration and about 33.09% medical and 58.33% dental interns were aware of collaborative services.

**Conclusion:** The awareness regarding the collaboration between medical and dental practices was considerably low. The efforts should be undertaken to spread the awareness and strengthen bridge in both the medical and dental field.

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## 1. Introduction

“Your mouth talks to your body and your body talks to your mouth”

Oral health is an integral and essential to general health and wellbeing at every stage of life.<sup>1</sup> The interrelationship between oral and general health is already proven by evidence considerably over the past decades.<sup>2</sup> An extensive

research publications have suggested that oral infections, especially periodontitis, are potential contributing factors to a variety of clinically important systemic diseases like cardiovascular diseases, premature and low-birth-weight babies and respiratory diseases.<sup>3,4</sup>

Oral health also shares common risk factors (e.g. poor diet, smoking, harmful alcohol use) with many chronic non-communicable diseases. There is a need for high-quality, patient-centred, collaborative health service by holistic approach for management of patients.<sup>5</sup> Increased

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awareness among medical and dental providers regarding the connection between oral health, systemic disease, and overall health and wellness has given rise to an emphasis on inter-professional collaboration.<sup>6</sup>

Inter-professional collaborative practice has been defined as a process which includes communication and decision-making, enabling a synergistic influence of grouped knowledge and skills.<sup>7</sup> It is a process in which different professional groups work together to improve health care.<sup>8</sup> Collaborative interactions exhibit a blending of professional cultures and are achieved through sharing skills and knowledge to improve the quality of patient care.<sup>7</sup> Inter-professional collaboration achieves greater resource efficiency and improves the standards, comprehensiveness, and continuity of care by reducing duplication and gaps in services.<sup>9</sup>

Dentists are the front-line medical professionals in the prevention, early detection and treatment of oral and systemic diseases. They should therefore play a leadership role within the oral health profession and in relation to other health professions to improve oral health and thereby contribute to the improvement of general health and quality of life for all.<sup>10</sup> Enhancing health care services through inter-professional collaboration between medical and dental practitioners is therefore important and even essential. A proposal of such collaborative initiative as "Bridge Course" has put forward by the Dental Council of India (DCI) under the Government of India (GOI) in 2017 to enable BDS graduates to pursue MBBS in the country. Therefore it is quintessential to understand medical and dental student's perception in this regard. There is scarcity of published literature to demonstrate the attitude and awareness of medical and dental professionals regarding collaborative practices. Hence present survey was aimed to assess the attitude and awareness of dental and medical interns towards collaboration between medical and dental practices in Davangere city.

## 2. Research Question

What is the attitude and awareness of dental and medical interns towards collaboration between medical and dental practice in Davangere city?

### 2.1. Methodology

A cross-sectional survey was conducted to assess the attitude and awareness of dental and medical interns towards collaboration practices in Davangere city. The proposal for the present survey was reviewed and ethical clearance was obtained from the Institutional Review Board. The data was collected during the months of November and December, 2015 among all medical and dental interns of two premium dental and medical colleges in Davangere city.

Permission for conducting the survey was obtained from the principals of all the respective colleges and the heads of all the departments after appraising them about the study. The list of medical and dental interns was obtained from the administrations of the respective colleges. A written voluntary informed consent was obtained from the study participants before the start of the study after explaining them about the purpose of conducting the study and procedure of collecting the data through participant's information letter.

The survey instrument employed was an investigator-designed, self-administered, close ended questionnaire which was pre-tested for clarity and ambiguity. It comprised of 21 questions in three sections:

1. Section 1: Contains 6 questions to collect the demographic details of the participants like name, age, gender and fraternity they belong to.
2. Section 2: Contains 14 questions regarding attitude of medical and dental interns towards collaborative practice.
3. Section 3: Contains single question regarding awareness towards collaboration between medical and dental practice and a follow-up question to indicate their perceived link of dentistry and medical disciplines.

The questionnaire was distributed to the participants at their respective clinical departments by the investigator and the questions were explained to avoid any ambiguity. Participants had given 20 minutes to mention their responses. The filled questionnaire was collected on the same day or the next day.

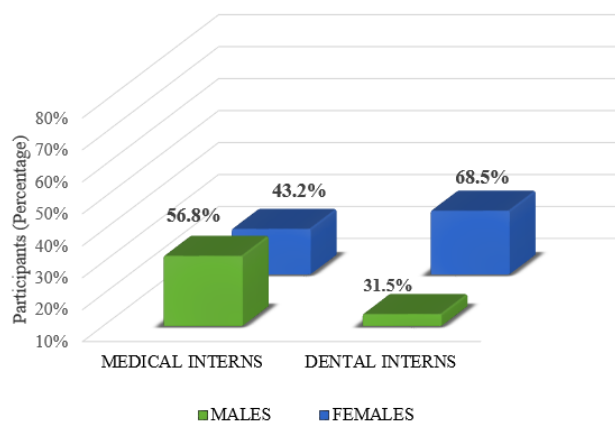
### 2.2. Statistical analysis

The data was analysed using Statistical Package for Social Sciences software (SPSS version 20). The attitude and awareness scores of interns were analysed separately. The attitude scores of the students were calculated from their responses for question 7 to 20. Each "Yes" and "No" answer was given 1 and 0 mark respectively for question 7 to 20. This would add up to a sum which ranged from 0 to 8 marks in total. The students' attitude scores were categorized into three groups which were poor (scored 0-4), average (scored 5-9) and good (scored 10-14). The level of significance was set at 5%. Descriptive analysis and analytical statistics were employed in the data handling. Data was non-normally distributed, hence Mann-Whitney U test was used to compare the responses of medical and dental participants.

## 3. Results

The present survey targeted all the 247 subjects out of which 139 (56.3%) belonged to medical fraternity and 108

(43.7%) were dental interns. The demographic profile of participating interns is represented in Figure 1. The response rate was 100%. Those who returned a blank questionnaire were not considered as participating.



**Fig. 1:** Distribution of study participants by gender

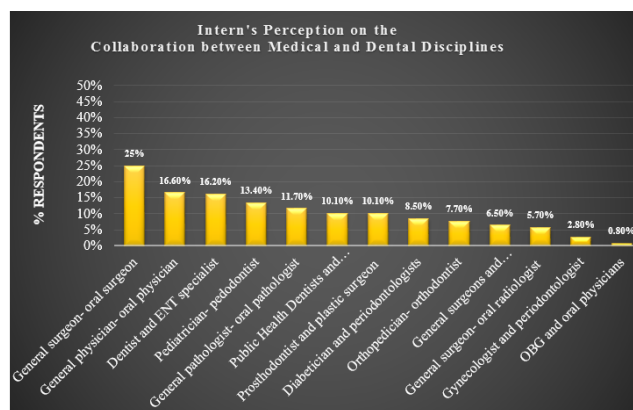
The data regarding the participating interns' profiles and concurrence of items relating to their attitude and awareness to collaboration between medical and dental practice is presented in Table 1. Most of the medical (89.2%) and dental interns (99%) agreed that oral health is an integral part of general health but many did not agree that medical students should have a rotation in dentistry (42%) or vice versa (36%). All dental interns considered that medical-dental collaboration enhances quality of a patient care.

All of respondents of both fraternity had good attitude (score 10–14) toward collaboration between medical and dental practice. The mean attitude score of medical and dental interns were  $11.22 \pm 2.44$  and  $12.57 \pm 1.36$  respectively. There is a statistical significant difference in the mean attitude score between medical and dental interns ( $p < 0.001$ ) as depicted in Table 2. Dental interns were having more positive attitude towards collaboration than medical interns.

The overall awareness was less among the study participants as only 44% were aware of such inter-professional collaborations existing in practice. The results of present study reflected that dental interns ( $n=63$ , 57.79%) were more aware of the collaboration between medical and dental practice than medical interns and the difference was statistically significant ( $p < 0.001$ ). Many interns have recognized that dentistry has a close link to general surgeons, physicians and ENT practices but few recognized its link to obstetrics and gynaecology (Figure 2).

#### 4. Discussion

In today's health care environment, Health care professionals increasingly utilize interdisciplinary



**Fig. 2:** Intern's perception on the collaboration between medical and dental disciplines

approach to reach optimal decisions regarding patient care. Collaborative health care teams are part of patient care in most health care services. Inter-professional collaboration achieves greater resource efficiency and improves the standards, comprehensiveness and continuity of care by reducing duplication and gaps in services.<sup>11</sup> Recent scientific studies show strong correlations between oral and systemic disease, indicating a need for increased collaboration between the medical and dental professions. In this context a questionnaire survey was conducted to evaluate the attitude and awareness of medical and dental interns toward collaboration between medical and dental practices in Davangere.

The questions used in this study were adapted from the questions used by Hendricson and Cohen<sup>12</sup> and Migliorati and Madrid.<sup>13</sup> The questions of these studies were wide - ranging in medical-dental collaboration and education. We selected specific questions that related to the collaboration between medical and dental practice.

Most (95.5%) of the participants favored that medical and dental collaboration enhance quality of services rendered to patients. Similar opinion was also reported from the participants of the study done by Brame JL et al.<sup>14</sup> Majority of the participants (85.82%) agreed that dental students should have medical rotation which Hendricson and Cohen<sup>12</sup> considered as beneficial and essential factor. Majority of respondents (89.5%) agreed that medical-dental collaborative practices will affect professional education, training, work teams, work flow, patient care and outcomes. These results were in accordance with the study done by Bridges DR et al.<sup>7</sup> In this study dental interns were having more positive attitude and awareness about the collaborative practices than medical interns. ( $p=0.00$ ). These study findings were collinear with the study done by Zanget al.<sup>11</sup> This study implied the interns did not have a complete understanding of the depth of the collaboration between medical and dental practice. Once the depth of that link is

**Table 1:** Responses of study participants to the items related to attitude and awareness towards collaboration between medical and dental practice

Questionnaire	Response		Profession		Total
	Yes	No	Medical	Dental	
Oral health is an integral part of general health	Yes 124 (53.67%)	No 15 (93.75%)	124 (53.67%)	107 (46.32%)	231
Is the medical-dental collaboration enhances quality of a patient care	Yes 128 (92.08%)	No 10 (7.19%)	128 (92.08%)	108 (100%)	236
Can dentists be responsible for advising patients on systemic health	Yes 104 (74.82%)	No 35 (25.17%)	104 (74.82%)	102 (94.44%)	206
Can physicians are responsible for advising patients on oral health	Yes 111 (79.85%)	No 28 (20.14%)	111 (79.85%)	91 (84.25%)	41
Should dental students have a rotation in medicine	Yes 111 (79.8%)	No 28 (20.14%)	111 (79.8%)	17 (15.74%)	202
Should medical students have a rotation in dentistry	Yes 73 (52.51%)	No 66 (47.48%)	73 (52.51%)	101 (93.51%)	45
Should government provide a direct attention and resources to strengthen medical and dental collaboration	Yes 122 (87.76%)	No 16 (11.51%)	122 (87.76%)	7 (6.48%)	212
The medical-dental collaborative practices will affect things such as professional education, training, work teams, work flow, patient care and outcomes	Agree 17 (12.23%)	Disagree 119 (85.61%)	17 (12.23%)	29 (26.85%)	152
Do you feel the medical and dental school education a critical factor to strengthen the medical-dental collaboration	Yes 20 (14.38%)	No 106 (76.25%)	20 (14.38%)	103 (95.37%)	95
Is there a need of common stage for seminars and conferences between members of both faculties	Yes 33 (23.74%)	No 119 (85.61%)	33 (23.74%)	5 (4.62%)	225
Does the medical-dental collaboration give cost effective services	Yes 119 (85.61%)	No 20 (14.38%)	119 (85.61%)	99 (91.66%)	21
Do you consider changing the medical or dental culture of education and practice to be a significant step in this innovative collaboration	Yes 123 (88.48%)	No 16 (11.51%)	123 (88.48%)	9 (8.33%)	26
Is changing the medical or dental culture of education and practice will improve the patient care in general	Agree 129 (92.80%)	Disagree 10 (7.19%)	129 (92.80%)	99 (91.6%)	218
				9 (8.33%)	29
				97 (89.81%)	203
				11 (10.18%)	44
				93 (86.11%)	212
				15 (13.88%)	35
				98 (90.74%)	221
				10 (9.25%)	26
				107 (99.07%)	236
				1 (0.92%)	11

**Table 2:** The attitude score of study participants regarding collaboration between medical and dental practices

Profession	Frequency (n)	Mean± S.D.	p-Value
Medical	139	11.22± 2.44	0.00**
Dental	108	12.57± 1.36	

n=number of participants

\*\* p= statistically highly significant (mention the p value for dental in Table 2)

**Table 3:** The awareness score of study participants regarding collaboration between medical and dental practices

	Yes n (%)	No n (%)	Total	Chi-square value	p- Value
Medical	46 (42.20%)	93 (67.4%)	139	15.70	0.00**
Dental	63 (57.79%)	45 (32.6%)	108		
Total	109 (44.1%)	138 (55.9%)	247		

n=number of participants

\*\* p= statistically highly significant (mention the chi square value and the pvalue for dental in Table 3)

understood, the need for collaboration between medical and dental practice by both professionals would be more precise and effective. They should realize collaboration between medical and dental practice can involve any discipline not just pertaining to those related to the oral cavity. Patients with common systemic conditions, such as diabetes mellitus and pregnancy, often experience dental complications and 40 to 45 per cent of all cancers pertained to the oral cavity alone. Currently, India counts only 0.77 physician per 1,000 people,<sup>15</sup> indicating that more qualified medical professionals are needed. Therefore the proposal of Bridge course by the GOI is effective strategy for the severe shortage and imbalance in the distribution of MBBS doctors particularly in the rural areas.

Thus it become significant to establish an essential groundwork for nurturing medical-dental teamwork, which is vital for improving resource efficiency in terms of economy and finance and to raise the standards of health care. Continuing education courses for instance, introducing bridge courses to strengthen the bond between medical and dental profession, conducting CD programs, workshops, lectures, hands-on courses, and others should be invigorated as they highlight the importance of inter-professional practice. Introducing interdisciplinary branch into the curriculum of medicine and dentistry could be beneficiary. Medical-dental collaboration can be facilitated by medical and dental professional bodies, which should develop guidelines for the indications, timing, protocols, and responsibilities of referral and consultation among physicians and dentists. Public awareness should also be awakened by conducting camps, speeches, outreach programs so that patients and the community understand the relationship between oral and systemic health. Further studies are recommended in this arena to explore the barriers to be overcome in implementing Inter-professional collaboration in education system as well as in rendering healthcare services.

## 5. Conclusion

In an effort to assess the awareness of inter-professional collaboration, a descriptive cross sectional survey was conducted in Davangere city. It has come to light that the medical and dental interns have demonstrated good attitude but less awareness regarding collaboration in medical and dental practice.

## 6. Clinical Implication

Today patients have complex health needs and typically require more than one discipline to address regarding their health status, where mutual exchange of knowledge and experience will help in rendering good service. Inter-collaborative practice has enhanced the introduction of new clinical educational experience for students in each profession. This has raised the necessity to develop a concrete educational foundation coupled with inter-professional clinical immersion to fully incorporate and sustain integrated oral-systemic care system.

## 7. Conflict of Interest

The authors declare that there are no conflicts of interest in this paper.

## 8. Source of Funding

None.

## References

- Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century—the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol.* 2003;31(1):3–23.
- Grossi SG, Genco RJ. Periodontal disease and diabetes mellitus: a two-way relationship. *Ann Periodontol.* 1998;3(1):51–61. doi:10.1902/annals.1998.3.1.51.
- Li X, Kolltveit KM, Tronstad L, Olsen I. Systemic Diseases Caused by Oral Infection. *Clin Microbiol Rev.* 2000;13(4):547–58.
- Migliorati CA, Madrid C. The interface between oral and systemic health: the need for more collaboration. *Clin Microbiol Infect.* 2007;13(4):11–6.

5. Lo ECM. Enhancing health care services through close collaboration between medical and dental professionals. *Hong Kong Med J*. 2014;20(2):92-3.
6. Tracye A. Moore, improve outcomes with inter professional collaboration. *Dimens Dent Hyg*. 2015;13(8):28-31.
7. Bridges DR, Davidson RA, Odegard PS, Maki IV, Tomkowiak J, et al. Inter professional collaboration: three best practice models of inter professional education. *Med Educ Online*. 2011;16. doi:10.3402/meo.v16i0.6035.
8. Hepp SL, Suter E, Jackson K, Deutschlander S, Makwarimba E, Jennings J, et al. Using an interprofessional competency framework to examine collaborative practice. *J Interprof Care*. 2014;29(2):131-7.
9. Green BN, Johnson CD. Interprofessional collaboration in research, education, and clinical practice: working together for a better future. *J Chiropr Educ*. 2015;29(1):1-10. doi:10.7899/JCE-14-36.
10. Cooper D, Kim J, Duderstadt K, Stewart R, Lin B, Alkon A, et al. Interprofessional Oral Health Education Improves Knowledge, Confidence, and Practice for Pediatric Healthcare Providers. *IFront Public Health*. 2017;5:209. doi:10.3389/fpubh.2017.00209.
11. Zhang S, Lo EC, Chu CH. Attitude and awareness of medical and dental students towards collaboration between medical and dental practice in Hong Kong. *BMC Oral Health*. 2015;15(53):1-6.
12. Migliorati C, Madrid C. The interface between oral and systemic health: the need for more collaboration. *Clin Microbiol Infect*. 2007;13(4):11-6.
13. Chu CH, Lo EC. Patients' satisfaction with dental services provided by a university in Hong Kong. *Int Dent J*. 1999;49(1):53-9.
14. Brame JL, Mitchell SH, Wilder RS, Sams LD. Dental and allied dental students' attitudes towards and perceptions of intra professional education. *J Dent Educ*. 2015;79(6):616-25.
15. Kumar R, Pal R. India achieves WHO recommended doctor population ratio: A call for paradigm shift in public health discourse! . *J Family Med Prim Care*. 2018;7(5):841-4.

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