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Competency Based Activities Conducted by the Departments of Public Health Dentistry Across India: A Cross-sectional Study

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Abstract

Background & Objective: Presently there are internationally prevailing competency statements for Public Health Dentistry and it would be important to know how the activities of public health dentistry departments in India are matching with these competencies. Hence, the present study was conducted with an aim to assess the activities carried out in the Departments of Public Health Dentistry of different dental colleges across India, as per the competency document for public health dentistry stated in a similar survey by Mascarenhas AK and Altman D.[2]

Methods: A cross-sectional survey was conducted among the post-graduate students of department of Public health Dentistry studying in India. Evaluation of competency statement was assessed by the questionnaire administered through Google form via E-mail & whatsapp. The questionnaire was developed from the article by Mascarenhas AK[2] with necessary changes to suit the requirements of the study.

Results: 47 students belonging to 41 dental colleges across India responded to the survey. The most followed competency among the students was Communicating on oral and public health issues, conducting research, planning & implementing oral health program with 79%, 77% & 62% respectively. The least followed competency was advocating for oral health policy with 40%. The major domain of oral health programs implemented by the department were health education programs followed by preventive & treatment programs with 62%, 23%, & 9% respectively.

Conclusion: The competencies which require additional attention are, advocating for oral health policy, ethical decision making in practice of Dental Public Health, evaluating health care delivery system and integrating social determinants of health into oral health.

Keywords: Dental public health; Competencies; Competency based dental curriculum.

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INTRODUCTION

The term competency as defined by Dental Licensure Canada, "It is most often used to describe the skills, understanding and professional

values of an individual ready for beginning independent dental or allied oral health care practice".[1] Competency is "the ability or a skill of an individual to do a job properly". It encompasses knowledge, skills, ability the behaviour essential to fulfil certain job.[2] These competency statements help the students to define & state what exactly is expected from them and what are the skills to be developed by the end of a program.[3] Besides, it helps the faculty to appropriately design the curriculum and select suitable assessment methods in order to evaluate the desired outcome. Competency document also helps in communicating with other stakeholders like institutional administrators, future employers and public at large about the kind of skills that can be expected of any student successfully completing the course.

Countries like USA, Europe, UK[4] and Korea have already inculcated competency-based curricular design in their dental education. Whereas, not long ago,in the year 2019 National Medical Commission of India had introduced the competency-based undergraduate curriculum for MBBS course across the country.[5] As such there is no reference for the development of competency based dental curriculum in our country. The first Competency statement for DPH came into existence in 1978[6], which were updated in 1998 and 2018 by The American Board of Dental Public Health (ABDPH) with 10 core competencies for the 21st century Public Health Dentists.[7-9] Presently, Indian Association of Public Health Dentistry (IAPHD) is working on a competency document in public health dentistry for the undergraduate and post-graduate curriculum.[10] Contemplating this issue IAPHD had also organized its 25th National conference in November 2019 based on the theme "Redefining Dental Public Health Competencies in India".[11] While it is likely that a competency document for dental public health may be developed &implemented by regulatory bodies in our country in the future, it would be good to know how the present activities are matching with the internationally prevailing competency statements. Hence, the present study was conducted with an aim to assess the activities carried out in the Departments of Public Health Dentistry of different dental colleges across India, are in line with the globally prevailing competencies a Public Health Dentist should have.

METHODOLOGY

A cross-sectional descriptive study was conducted among post-graduate students of Department of Public health dentistry across India. The study protocol was submitted to the Institutional Review Board of S.D.M College of Dental Sciences and Hospital, Dharwad and ethical clearance was thus obtained for the study by the Institutional Ethical Committee. A convenient sampling method was applied for the study as the aim of the study was to assess competency based activities of Department of Public Health Dentistry across India, therefore all the post-graduate students of Department of Public Health Dentistry studying in India were part of the study.

Questionnaire was partly adopted from the article by Mascarenhas AK *et al*.[2] with necessary changes with addition of few questions to suit the requirements of the study. The questionnaire consisted of 22 multiple choice questions which were divided into three sections. The first section contained questions about demographic data related to participants' Email, age, gender, Place of studying Post graduation and year of post-graduation. The second section of the questionnaire consisted of one question with 10 DPH competencies items. The third section was about the activities based on the competency statements involved by the student's respective department. The questions were subjected to face validity and necessary corrections were made. The questionnaire was sent via e-mails and whatsapp messages to the target groups. Frequent reminders were sent to those who did not respond to the questionnaire for the first time. Study participants were informed about the purpose of the study & implied consent was considered as the questions were administered through online/digital platform. Students were assured about the confidentiality of the data.

Participant's response were collected and downloaded in spreadsheet from Google Forms. The response to each question was numerically coded & data entry was done in Microsoft Excel. Statistical analysis was done in Microsoft Excel. Descriptive statistics was performed and the results were expressed in form of percentages.

RESULTS

There are at present 79 dental colleges offering MDS in Public Health Dentistry and responses were obtained from 43 dental colleges across India.[12] Distribution of study participants according to four zones, North, South, East and West. Maximum responses were obtained from Southern part of India 62%, followed by North and West *i.e.*, 30% & 6% respectively. Least response was from Eastern

part of India *i.e.*, 2%. The mean age of study participants was 27.19± 2.38

Table 1: Demographic details

Variables		N (%)
Gender	Male	14(30%)
	Female	33(70%)
Year of studying Post-graduation	First year	25(53%)
	Second year	20(43%)
	Third year	2(4%)

Practices (KAP) of the people regarding oral heal care (32%), followed by surveys to determine oral health care needs of the population (28%), the extent of oral disease distribution in the population (26%) and 11% of the surveys were targeted to identify social determinants of oral health.

Most of the camps conducted by the participant's respective department concentrated on both urban and rural areas with 55% followed by 36% of camps which were only targeted to rural people and 9% of camps were conducted in urban areas. The most common mode of health education that

Table 2: Competency practices of the students/ teachers among post-graduates.

Competencies	Yes	No
Communicate on oral & public health issues to the public	79%	21%
Conduct research to address oral public health problems	77%	23%
Plan and implement oral health program for population	62%	38%
Lead collaborations on oral & public health issues	57%	43%
Design surveys & surveillance system to measure oral health status & its determinants	55%	45%
Critically appraise evidence to address oral health issues	53%	47%
Integrate the social determinants of health into Dental Public Health	51%	49%
Evaluate system of care that impact oral health	51%	49%
Demonstrate ethical decision making in practice of dental public health	45%	55%
Advocate for oral health policy	40%	60%

Table 2 shows the percentage of students who have witnessed or were involved in any of the above mentioned competencies either by themselves or any of the staff members of their department. The most followed competencies were communication of oral & public health issues to public (79%) followed by conducting research (77%), planning and implementing oral health program (62%). The least followed competency was advocating for oral health policy with 40% and following ethical decision making practices in our work with 45%.

The major type (62%) of oral health programs implemented by the department were health awareness and education program followed by preventive programs with 23% and only 9% of departments implemented treatment programs. In order to know if the students respective departments were involved in evaluation of health care services, they were asked how was health system evaluated. There was varied response to the question, but the most common answer was Summative evaluation (36%). The maximum number of surveys conducted by the departments were to know the Knowledge, Attitude and was followed was lectures (45%), followed by power-point presentations (36%), skits/role play (15%) and Radio talk (4%).

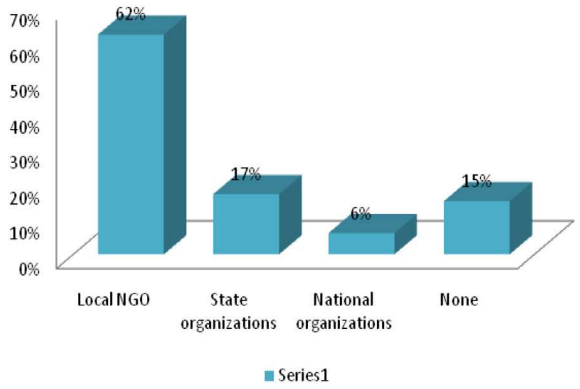

Fig. 1: Intersectoral collaboration by the departments

Fig 1 describes inter-sectorial collaborations of the department at various levels. 62% Public Health Dentistry departments in India had collaborations with local NGOs for conducting oral health programs while 17% of departments had state

level collaborations & only 6% of departments had national level collaborations for conducting oral health programs. 60% of the participants responded that the oral health schemes launched by the central and state government are functional in their respective colleges. The major type of research work conducted by the department were based on descriptive study designs (45%), followed by experimental studies (32%) and very less analytical study design (23%).

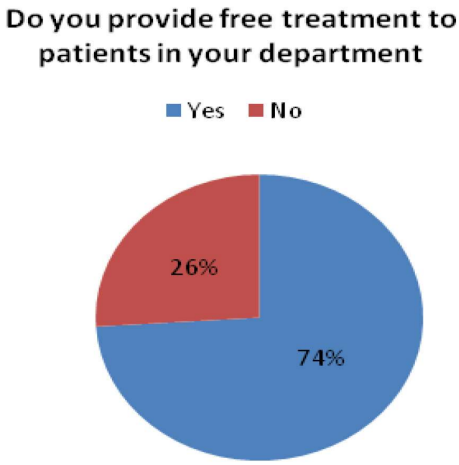

Fig. 2

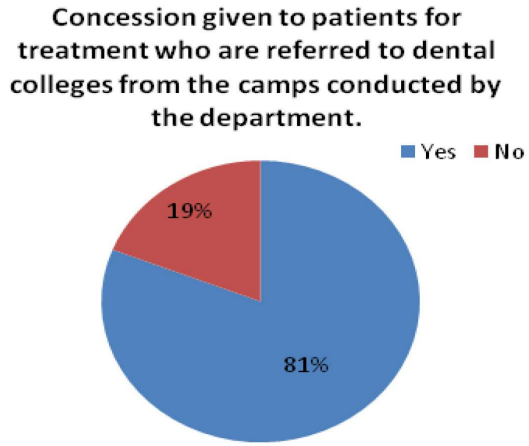

Fig. 3

Fig. 2 & 3 Shows the type of health care facility available for the general population at the college. 74% respondents said that, they provide free treatment to patients in the department of public health dentistry in their respective colleges & 81% of respondents said that their institution provides concession to the people who have been referred from the dental camps conducted by the department.

When the participants were asked about the training for providing tobacco cessation counselling 72% of them said they have been trained to provide Tobacco Cessation counselling for the patients.

DISCUSSION

Competency statements are a consensus of what is expected from a post-graduate student by the end of their training program in dental public health.[8] In health profession education, "competency" means the behaviour expected of beginning independent practice. This behaviour incorporates understanding, skills values in an integrated response to the full range of circumstances encountered in general professional practice.[13] These present-day competency statements not only define the specialty of Public Health Dentistry but also serve as a guide to colleagues in other fields, educators, policy makers, employers future specialists.[8]

The competency statement by American Board of Dental Public Health were used in the present studybecause, thecompetency statement for Indian Public Health Dentists ispresently in the draft stage of development. These competencies of American Board of Dental Public Health may not be completely relevant to Indian context as the health care needs of people, extent of diseases and the resource like manpower and money may vary but the objectives and motive remain same. Besides, the aim of the present study was to assess the activities carried out in the Departments of Public Health Dentistry in India, are in line with the globally prevailing competencies a Public Health Dentist should have.

Paramount response to the questionnaire was obtained from southern part of India (62%) as maximum number of the dental colleges are present in the southern part of our country in the states of Karnataka and Tamil Nadu.[14] The most followed competency among the study participants in our study was the ability to communicate on oral & public health issues to the public (79%). The rationale being, health education which has become an integral and inseparable part of public health dentists, as they are involved in educating people on health related issues throughvarious modes like lectures, radio talk, newspaper article, counselling, skit, street play & so on. The results are similar to study conducted by Aboubakr *et al*[15], to assess

dental public health competencies among dental interns and dental practitioners of different dental specialties in Egypt found that, the most competent skill among the participants was their ability to communicate on oral and public health issues. This is contrary to study conducted by Khangar *et al*[16] 56.5% of participants said they were less competent in providing oral health education.

In the present study it was also noted that more than 50% of the students witnessing or being a part of other competencies like conducting research to address oral public health problems, Planning and implementing oral health program for the population, Leading collaborations on oral and public health issues, Designing surveys and surveillance system to measure oral health status and its determinants, critically appraising evidence to address oral health issues, Evaluating oral health care delivery system and Integrating the social determinants of health into Dental public Health. The aspects of competencies with less than 50% of participant's involvement are Demonstrating ethical decision making in practise of Dental public health and Advocating for oral health policy.

This is in accordance to study conducted by Khangar et al[16], where 56.5% of respondents said that they are less competent to take up initiative to promote lobbying and apply ethical and moral standards while carrying out epidemiological researches. The results are also similar to study conducted by Al Agili *et al*[17] in Saudi Arabia as a part of needs assessment for the development of a post-graduate program in DPH as part of the Faculty of Dentistry at King Abdulaziz University (KAUFD) in Jeddah, Saudi Arabia. Greater involvement of public health dentists in advocacy and lobbying and more comprehensive training regarding these competencies is warranted. These important aspects of globally accepted public health competencies seem to be needing higher emphasis in implementation.

62% of the respondents in our study said that health education & awareness programs were carried out more frequently when compared toonly 23% of preventive programs & 9% of treatment programs. As the definition of Public Health Dentistry goes "The science and art of preventing oral disease…." Stated by American Association of Public health dentistry, preventive dentistry becomes an indispensible part of public Health Dentistry, hence our focus should be on both creating awareness among people as well preventing oral diseases. With the increase in the burden of oral diseases we are left with no choice apart from preventing diseases. One of the possibilities for reduction of preventive and treatment services may be the COVID-19 pandemic which has limited most of the outreach program & confined us to health education.

The focus of the surveys conducted by the participants respective departments mainly focussed on the Knowledge, Attitude and Practices (KAP) of the people regarding oral heal care (32%), followed by surveys to determine oral health care needs of the population (28%), the extent of oral disease distribution in the population (26%) and only 11% of the surveys were targeted to identify social determinants of oral health. With rapid globalization ensuing profound inequalities in health, sustainable improvement in the status of health can be achieved byreducing health inequalities and addressing social factors which lie at the core of disease causation.[18] Hence equal importance should be given to address social determinants of oral health.

62% Public Health Dentistry departments in India had collaborations with local NGOs for conducting oral health programs while only 17% and 6% of departments had state and national level collaborations with various institutes. For any health program to be successful it requires collaborations with various sectors of the society. Most of the oral health programs that are conducted are with the collaborations of different sectors like schools, village panchayat, health sector, local NGOs and so on. Intersectoral coordination is also accepted as one of the strategies and principles of Primary health care.

74% respondents said that, they provide free treatment to patients in the department of public health dentistry in their respective colleges & 81% of respondents said that their institution provides concession to the people who have been referred from the dental camps conducted by the department. Majority of study participants said that they promote oral health by providing free treatment or concession to the patients at their respective departments. Due to lack of oral health care services at government level (Community Health Centre and District hospitals) in the most part of the country, it becomes hard for the rural and lower socioeconomic group people to avail health services. Hence providing oral health services to the rural population through mobile dental clinic and encouraging them to utilize the health services by providing free or concession in the cost for the necessary treatment would be a good choice.

Although questionnaire-based studies are considered as one of the efficient tools for competency evaluation, it also comes with the inherent limitations of any questionnaire study like false response. Sample size estimation for the present study was not done and the questions were not subjected to content validity which could be the major limitations of the present study. Hence a study with proper sample size, sampling method and validation would be appropriate.

CONCLUSION

In the present study the major competency based activities followed by the participants in their respective department were creating health education and awareness, conducting research and planning, implementing oral health program. Whereas activities like advocating for oral health policy, ethical decision making in practice of Dental Public Health, evaluating health care delivery system and integrating social determinants of health into oral health were among the least followed competency by the respective students department.

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