Assessment of the efficacy of outreach programs on communication skill and confidence in Indian dental students

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Abstract

Background: Education is primarily aimed to improve the clinical competence in the students that further enhance the confidence of students. There is substantial evidence concerning the efficacy of medical outreach program in India with limited data on efficacy of dental outreach program, particularly in developing countries such as India.

Aim: The present study was aimed to assess the efficacy of outreach programs on communication skill and confidence in Indian dental students.

Methods: The present clinical study assessed 178 students from dental internship program that were divided into two groups of 89 subjects each where there was control group which was dental school based and outreach-based study group. A preformed self-administered questionnaire was used to assess change in communication skills and clinical confidence in two groups from baseline and after 3 months follow-up using test and transition judgement and global self-assessment test. Data were statistically analyzed.

Results: The study results showed that confidence level was higher in outreach-based group compared to dental school-based group using global assessment with $p<0.001$, whereas, on statistical analysis, baseline confidence was lesser in outreach program with $p=0.03$. Transition judgement showed and increased confidence significantly in outreach group with $p<0.001$. The Outreach program reported increased and better communication skill for transition judgement.

Conclusions: The present study concludes that the outreach program concept is an acceptable and efficacious program that can be incorporated in the existing dental curriculum for supplementation of the traditional school-based dental education system to supplement the traditional school-based dental education to attain an overall professional and trained dentists in developing countries such as India.

Keywords: clinical confidence, communication skills, dentistry, India, outreach programs

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Introduction

A vital objective of educational system in the healthcare sector is aimed at improving the clinical competence and to further enhance the confidence in the students. Competence has a concept pertaining to attitude, skills, abilities, and knowledge seen concerning the set of realistic professional tasks, whereas, confidence depicts the belief that one has ability to deal with the situations successfully or ability to do things well. To provide the effective oral health care for subjects from developing nation, confidence is considered vital factor for educational outcomes.[1]

Various studies have reported increased confidence which is linked to increased clinical competence, despite the relation in these two is not established well. Medical literature data reports that outreach program can be an efficacious alternative for better confidence gain along with increase in competence level of the students along with improved efficacy for implementing preventive service in the community and such arrangements are hence known as community, extramural, or outreach programs-based experiences. Tradition school-based dental education model being applied in dental office/general dental practice; however, it can make few students consider patients as items of treatment to be eliminated.[2]

Considering this, curriculum in various dental colleges is changing presently and increasingly use clinical experiences in primary care settings outside the traditional dental school environment by using outreach program in rural or urban settings aimed of preparing best dental school graduates for future career and independent dental practitioners. Hence, outreach programs where students take supervised practice on consenting patients away from the dental institute in primary care settings have enhanced performance and helped developing competence and confidence for future dental practice. Presently, Dental Council of India has directed Creation of Setup of the Satellite Clinics in Remote Areas for Internship compulsory requirement according to the recent revised Bachelor of Dental Surgery Course (3rd Amendment) Regulations, 2011.[3]

Despite these community-based outreach programs addressing few of perceived difficulties in conventional dental school programs, it is vital that these new programs must fit. As confidence cannot be assessed directly, self-reporting of perceived confidence by students is the most commonly used method. Despite the literature having substantial evidence from various medical assessment that hands-on outreach experiences do increase students' confidence in coping with clinical situations, there is limited literature data on outreach educational outcomes pertaining to dental education.[4] Hence, the present study was aimed to assess the efficacy of outreach programs on communication skill and confidence in Indian dental students.

Materials and methods

The present non-randomized study was aimed to assess the efficacy of outreach programs on communication skill and confidence in Indian dental students. The study subjects were from the Department of Community dentistry of the Institute. Verbal and written informed consent were taken from all the subjects before study participation.

The study assessed 178 dental students that are from the internship program of the dental institute. Based on internship posting schedule decided by DCI (dental council of India), subjects were included as either dental school-based group that served as control and finally had 89 students in each group in outreach group that served as study group making the final sample size of 178 subjects.

The inclusion criteria for the study were subjects undergoing internship program at the Institute during the defined study period, • students who had not been exposed to any of the outreach programs but had undergone at least 3 months of their clinical dental school-based postings (dental school based group only), and students who had been exposed to any of the outreach programs for at least 1 month and had undergone at least 3 months of their clinical dental school based postings (outreach group).

The students from outreach group had attended an outreach program such as underserved community camps, semi-urban camps, rural camps, rural health training centres, peripheral satellite centres, and other allied postings organized by the Department of Public Health Dentistry where students were given the independence to make their own clinical decisions, render health education to improve their communication skills, conduct certain oral health surveys and treat patients independently. Similarly, students from dental school-based group continued only normal dental school-based posting in various clinical departments. Self-administered, structured, and pre-tested questionnaire in English was given.

At baseline, communication skills and clinical confidence were assessed to match two groups using global self-assessment with its five-point Likert-style scale ranging from 'not at all confident' to 'totally confident'. At follow-up after 3 months, students' clinical confidence and communication skills were measured using global self-assessment of clinical confidence and communication skills at that present time, then-test for self-assessment of clinical confidence and communication skills before the posting, and transition judgements to assess the change from the past to the present level of clinical confidence and communication skills.

Collected data were subjected to statistical evaluation using chi-square test, Fisher's exact test, Mann Whitney U test, and SPSS (Statistical Package for the Social Sciences) software version 24.0 (IBM Corp., Armonk. NY, USA) using ANOVA and student's t-test. The significance level was considered at a p-value of <0.05.

Results

The present non-randomized study was aimed to assess the efficacy of outreach programs on communication skill and confidence in Indian dental students. The present clinical study assessed 178 students from dental internship program that were divided into two groups of 89 subjects each where there was control group which was dental school based and outreach-based study group. A preformed self-administered questionnaire was used to assess change in communication skills and clinical confidence in two groups from baseline and after 3 months follow-up using test and transition judgement and global self-assessment test. For baseline assessment of communication skills and self-rated clinical confidence in study subjects, at baseline communication skills and clinical confidence level in dental school-based and outreach group were comparable with p-value of 0.71 and 0.65 respectively (Table 1).

It was seen that concerning the student's self-rating scale for clinical confidence changes in dental school based and outreach program in study subjects, for transition judgement, it was significantly higher in transition judgement group compared to outreach group with p<0.001. Similar significantly higher confidence results were seen for outreach group using global assessment compared to dental school-based program with p<0.001. Using then-test, confidence was significantly higher in dental school-based group compared to outreach group with p=0.03 (Table 2).

The study results showed that for student's self-rating scale for change in communication skills in dental school based and outreach program in study subjects, using transition judgement at baseline was significantly higher in dental school-based groups compared to outreach group with p<0.001. Using then-test, communication skills were higher in outreach group, however, the difference was statistically non-significant with p=0.53. Using global assessment, communication skills were higher in dental school-based group compared to outreach group which was non-significant with p=0.09 (Table 3).

On assessing the perception of outreach program in the two groups of study subjects, the mean perception level in dental school-based group was 4.33±0.75 and for outreach-based dental program, mean perception of outreach program was 4.23±0.66. Despite the higher perception seen in dental school-based group. The difference was statistically non-significant with p=0.47 (Table 4).

Discussion

The present clinical study assessed 178 students from dental internship program that were divided into two groups of 89 subjects each where there was control group which was dental school based and outreach-based study group. A preformed self-administered questionnaire was used to assess change in communication skills and clinical confidence in two groups from baseline and after 3 months follow-up using test and transition judgement and global self-assessment test.

For baseline assessment of communication skills and self-rated clinical confidence in study subjects, at baseline communication skills and clinical confidence level in dental school-based and outreach group were comparable with p-value of 0.71 and 0.65 respectively. These data were comparable to the previous studies of Smith M et al5 in 2006 and Smith M et al6 in 2010 where authors assessed subjects with data comparable to the present study in their respective studies.

The study results showed that concerning the student's self-rating scale for clinical confidence changes in dental school based and outreach program in study subjects, for transition judgement, it was significantly higher in transition judgement group compared to outreach group with p<0.001. Similar significantly higher confidence results were seen for outreach group using global assessment compared to dental school-based program with p<0.001. Using then-test, confidence was significantly higher in dental school-based group compared to outreach group with p=0.03. These results were consistent with the findings of Harris RV et al7 in 2003 and Smith et al8 in 2006 where results reported by the authors for student's self-rating scale for clinical confidence changes in dental school based and outreach program were comparable to the results of the present study.

It was seen that for student's self-rating scale for change in communication skills in dental school based and outreach program in study subjects, using transition judgement at baseline was significantly higher in dental school-based groups compared to outreach group with p<0.001. Using then-test, communication skills were higher in outreach group, however, the difference was statistically non-significant with p=0.53. Using global assessment, communication skills were higher in dental school-based group compared to outreach group which was non-significant with p=0.09. These findings were in agreement with the results of Lennon MA et al9 in 2004 and Hunter LM et al10 in 2007 where results for student's self-rating scale for change in communication skills in dental school based and

outreach program comparable to the present study were also reported by the authors.

Concerning the assessment of the perception of outreach program in the two groups of study subjects, the mean perception level in dental school-based group was 4.33±0.75 and for outreach-based dental program, mean perception of outreach program was 4.23±0.66. Despite the higher perception seen in dental school-based group. The difference was statistically non-significant with p=0.47. These results correlated with the findings of Mofidi M et al11 in 2003 and Lynch CD et al12 in 2009 where results reported by the authors for assessment of the perception of outreach program in dental school based and outreach program were comparable to the results of the present study.

Conclusion

The present study, within its limitations, concludes that the outreach program concept is an acceptable and efficacious program that can be incorporated in the existing dental curriculum for supplementation of the traditional school-based dental education system to supplement the traditional school-based dental education to attain an overall professional and trained dentists in developing countries such as India.

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S. No	Variable	Dental school-based groups (n=89)	Outreach group (n=89)	p-value
	Communication skills	**4.01±0.59**	**3.96±0.63**	**0.71**
	Clinical confidence	**4.04±0.19**	**3.97±0.29**	**0.65**

Table 1: Baseline comparison of communication skills and clinical confidence between the two study groups

S. No	Variable	Dental school-based groups (n=89)	Outreach group (n=89)	p-value

	Transition judgement	**4.22±0.88**	**2.52±0.64**	**<0.001**
	Then-test	**3.40±0.73**	**3.70±0.70**	**0.03**
	Global assessment	**4.35±0.47**	**4.02±0.19**	**<0.001**

Table 2: Comparison of changes in clinical confidence between the dental school-based and outreach-based groups

S. No	**Variable**	**Dental school-based groups (n=89)**	**Outreach group (n=89)**	**p-value**
	Transition judgement	**4.06±1.16**	**2.54±0.64**	**<0.001**
	Then-test	**3.51±0.73**	**3.79±0.64**	**0.53**
	Global assessment	**4.24±0.53**	**4.04±0.52**	**0.09**

Table 3: Comparison of changes in communication skills between the dental school-based and outreach-based groups

S. No	**Variable**	**Dental school-based groups (n=89)**	**Outreach group (n=89)**	**p-value**
	Perception of outreach program	**4.33±0.75**	**4.23±0.66**	**0.47**

Table 4: Comparison of students' perceptions of the outreach programme between the two study groups