Original Article

Impact of interprofessional education module on attitudes of health-care providers involved in maxillofacial rehabilitation: A cross-sectional study

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Abstract

Purpose: Rehabilitation of maxillofacial deformities is a challenging task because it involves not only a lot of skills and expertise but also many disciplines working in unison for optimum outcome. However, more often than not a prosthodontist is not a member of tumor board and consulted after surgery which affects the prognosis of the rehabilitation adversely. There was a perceived need to create awareness among referring surgeons and physicians, and interprofessional education (IPE) initiatives were deemed necessary to improve this collaboration.

Methodology: Four-hour IPE module was developed involving residents and faculty from three disciplines. The change in attitudes was evaluated quantitatively using Attitudes toward Health Care Teams questionnaire both before and after the module. Semi-structured interviews with selected participants provided the qualitative feedback.

Results: The questionnaire consisted of 14 questions answered on 5-point Likert scale (1–5). The mean score of pretest was 44.2 and of posttest was 49.1. Difference was statistically significant ($P < 0.05$). Higher score indicates better attitude.

Conclusion: A brief IPE program can improve interprofessional attitudes and collaborative behavior of health-care professionals involved in maxillofacial rehabilitation. It enables the professionals to understand interact and share viewpoints regarding most critical issues faced by them and find solutions to achieve best possible patient care.

Key Words: Health-care team collaboration, interprofessional education, maxillofacial rehabilitation

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INTRODUCTION

Maxillofacial prosthetics is a branch of prosthodontics that deals with congenital and acquired defects of the head and neck. Maxillofacial prosthetics integrates parts of multiple specialties including head and neck oncology, ear, nose, throat (ENT), plastic surgery, speech, and other related disciplines.

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A comprehensive treatment planning involving all disciplines is mandatory for successful rehabilitation of patients. However, prosthetic consultation always comes last in the segment, and therefore, it becomes difficult to treat such patients with artificial prosthesis having predictable prognosis and improvement in quality of life. A survey conducted by Alani *et al.* indicated that only in 30% cases, a restorative dentist was a member of the multidisciplinary team treating patients with oral cancer.[1]

Research has long suggested that interprofessional collaboration improves coordination, communication, and ultimately, the quality and safety of patient care. It utilizes both the individual and collective skills and experience of team members, allowing them to function more effectively and deliver a higher level of services than each working alone.[2]

Therefore, an interprofessional education (IPE) module was developed to provide insights in maxillofacial prosthetic rehabilitation for various other team members to facilitate understanding of each other's role as well as limitations and expectations. The impact was evaluated using standard Attitudes toward Health Care Teams (ATHCTS) questionnaire[3,4] both before and after the module. This study was aimed to evaluate the impact of IPE module on attitudes of health-care providers involved in rehabilitation of maxillofacial defects.

METHODOLOGY

After approval from the Institutional Review Board, an IPE module was designed and peer validated [Figure 1]. It was conducted as a 1-day activity since participants expressed their inability to manage time for extended module spread over several days due to busy clinical schedule.

It consisted of three presentations on following topics:

1. Malignancies of maxillary jaws and paranasal sinus – Etiology, prevalence, and surgical management
2. Malignancies of mandibular jaw – Etiology, prevalence, and surgical management
3. Prosthodontic rehabilitation of resulting residual deformities – Timing of obturators, mandibular guide flange prosthesis, surgical modifications to enhance prosthodontic prognosis, various materials, and advanced techniques.

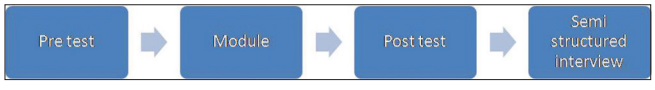


Figure 1: Methodology

It was followed by a discussion on various clinical cases of jaw malignancies and their rehabilitation.

Evaluation tool was quantitative in nature done using ATHCTS questionnaire both before and after the module.

In addition, semi-structured interviews were conducted with ten participants who willingly gave consent for the same. In the present study, author with previous experience of conducting such interviews and handling qualitative research and qualified (MDS) female prosthodontist, working as an associate professor at the present institute where the study was carried out conducted the interviews. Interviews were preceded by observation, informal, and unstructured interviewing to develop a keen understanding of the topic of interest necessary for developing relevant and meaningful semi-structured questions. Later, a prevalidated interview guide with open-ended questions was used. Participants were explained regarding her occupational status as well as research background before the interviews began. The participants were selected by convenience sampling. Interviews were carried out face–face. Ten participants agreed for this and forty refused to cite the reason of busy schedule. The data were collected at workplace and recorded by taking notes. On an average, one interview lasted for 15 min and data saturation was discussed. Repeat interviews were not carried out. Data were not coded. Qualitative content analysis was performed to extract information from the data. Major themes were reported.

Information regarding this activity was sent to three dental colleges and medical colleges in the city. Totally, fifty members from following departments including faculty and residents from three different institutes, viz., two dental and one medical, consented to participate:

1. Department of ENT
2. Department of Oral Surgery
3. Department of Prosthodontics.

Primary research question was "whether participation in IPE module changes the attitudes/perceptions of health-care professionals involved in maxillofacial rehabilitation?"

RESULTS

Results were compared using repeated measures ANOVA ($P \leq 0.05$) for primary analyses and *post hoc* differences in statistically significant ANOVA findings using Bonferroni procedure, using SPSS software (version 10), IBM Inc., USA.

The questionnaire consisted of 14 questions answered on 5-point Likert scale. It was administered both pre- and post-module. Scoring was done on 1–5 scale. The mean score of pretest was 44.2 and of posttest was 49.1. Difference was statistically significant ($P < 0.05$). Higher score indicates better attitude.

The results are given in Table 1.

There was significant difference between the pre- and post-test scores of question numbers 2, 5, 6, 8, 11, 12.

Questions linked with following themes [Table 1 and Graphs 1-6]:

1. Collaboration and role perception: Question numbers 2, 5, 6, 8, 11
2. Quality of patient care: Question numbers 12.

In the interview, participants expressed the view that this module provided them a common platform for interaction which is not possible in routine practice they understood the role of other professions better. However, regarding the content, they mentioned that not all parts of program had met the needs of their specialty due to differences in subject knowledge. All participants expressed their view that scope of maxillofacial prosthetic rehabilitation was understood better after this module.

DISCUSSION

Health is a state of complete physical, mental, and social well-being and not merely absence of disease or infirmity.[5] Health issues need to be addressed comprehensively to achieve the optimum outcome. Healthcare cannot occur in isolated set-up limited to any one specialty. All the professionals belonging to medicine, dentistry, physiotherapy, nursing, social workers, etc., have to work together in order to give maximum benefits to the patient. Today, there is a need for collaborative practice of health professionals to meet challenges of modern lifestyle. IPE is an approach to develop health-care students for future interprofessional teams. Students trained using an IPE approach are more likely to become collaborative interprofessional team members who show respect and positive attitudes toward each other and work toward improving patient outcomes.[6]

Working effectively with other disciplines is an important and necessary skill for health-care practitioners. Academic institutions can provide educational experiences that can begin to foster the prerequisite competencies needed to collaborate successfully with other health-care professionals.[7] Medicine and dentistry are two such intertwined specialties, where in many instances both have to coordinate and collaborate to facilitate improved health-care outcomes for patients. There have been few studies on IPE modules on topics such as women's oral health, prenatal oral health, diabetes and oral health, multidisciplinary teamwork in managing and temporomandibular disorders reporting effective use of IPE for better patient outcomes.[8-11]

If this process of sensitizing involved health-care workers regarding managing any disease/disorder is started early in

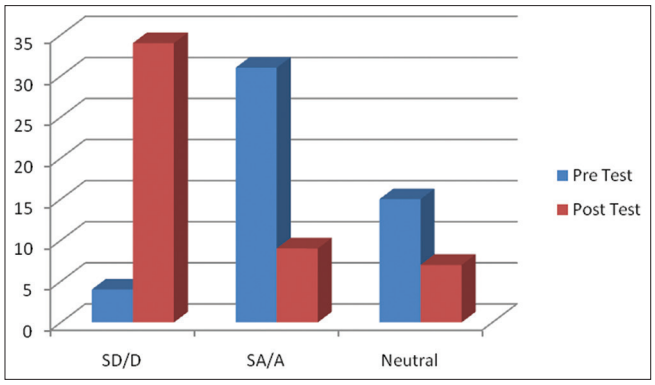
Table 1: Participants' perceptions using ATHCTS questionnaire

Statement	SD		D		N		A		SA	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Patients/clients receiving interprofessional care are more likely than others to be treated as whole persons	-	-	-	-	-	-	43	45	07	05
Developing an interprofessional patient/client care plan is excessively time consuming	-	11	4	23	15	7	31	9	-	-
The give and take among team members helps them make better patient/client care decisions	-	-	-	-	-	-	39	43	11	07
The interprofessional approach makes the delivery of care more efficient	-	-	-	-	-	-	43	44	07	06
Developing a patient/client care plan with other team members avoids errors in delivering care	-	-	-	-	42	12	8	35		03
Working in an interprofessional manner unnecessarily complicates things most of the time	3	26	22	18	-	6	15	-	10	-
Working in an interprofessional environment keeps most health professionals enthusiastic and interested in their jobs	-	-	-	—	-	-	33	41	17	09
The interprofessional approach improves the quality of care to patients/clients	-	-	-	-	42	11	05	23	03	16
In most instances, the time required for interprofessional consultations could be better spent in other ways	34	35	16	15	-	-	-	-	-	-
Health professionals working as teams are more responsive than others to the emotional and financial needs of patients/clients	-	-	—	—	-	-	37	39	13	11
The interprofessional approach permits health professionals to meet the needs of family caregivers as well as patients	-	-	-	-	26	07	15	10	09	33
Having to report observations to a team helps team members better understand the work of other health professionals	-	-	-	-	41	22	08	14	01	14
Hospital patients who receive interprofessional team care are better prepared for discharge than other patients	-	-	-	-	34	31	06	09	10	10
Team meetings foster communication among team members from different professions or disciplines	-	-	-	-	07	05	32	35	11	10

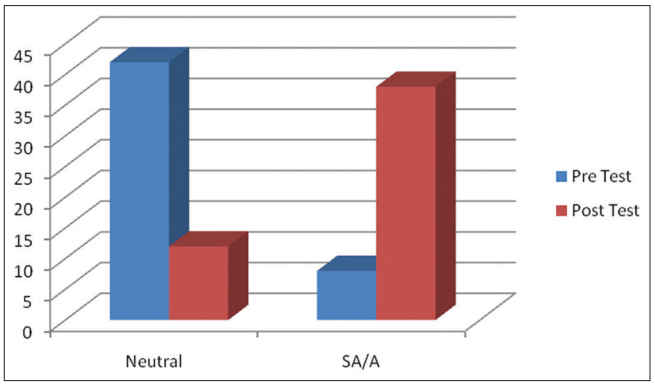
postgraduate training period, it can improve the teamwork among young professionals when they enter private practice. With this in mind, the participants for this study involved not only residents but also faculty members.

In cases of patients requiring maxillofacial rehabilitation due to loss of hard and/or soft tissues of jaws due to malignancies, trauma, or developmental defects, team approach is extremely important. Schneider[6] explained that removal and restoration of oral/dental tumors require multidisciplinary treatment planning. Rafter[12] did a preliminary survey of IPE and concluded that many health-care setting models in the future will include dentists as part of an interdisciplinary health-care team.

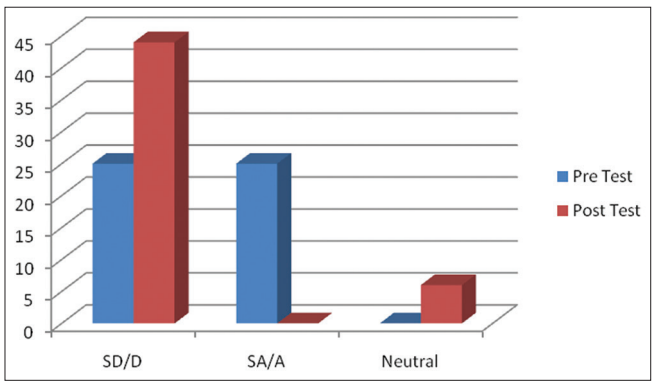
Khan[13] in their article investigated cancer curricula of dental schools and it was found that deficits in "oncologic dentistry" education included failure to provide practical clinical oncology experience in diagnosis, the decision-making process, referral procedures, management



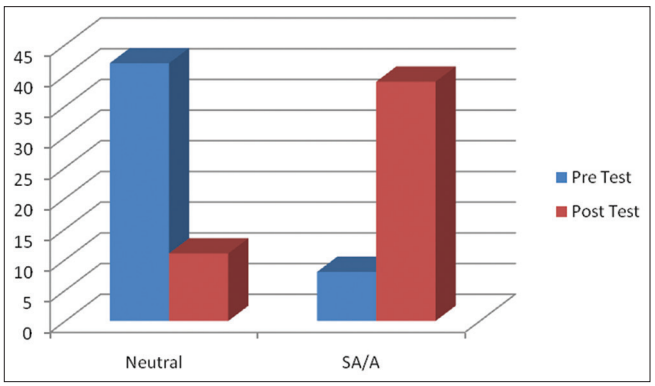
Graph 1: Q2-Developing an interprofessional patient/client care plan is excessively time-consuming



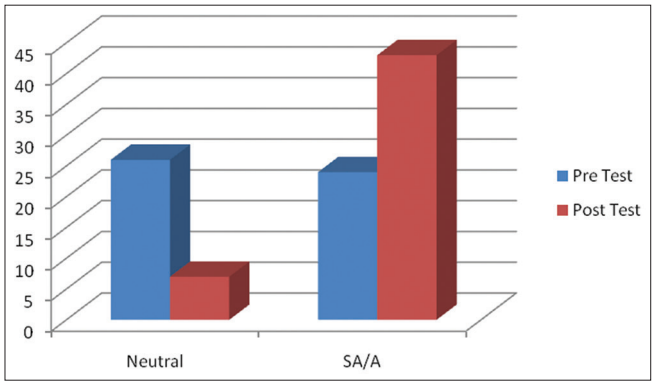
Graph 2: Q5-Developing a patient/client care plan with other team members avoids errors in delivering care



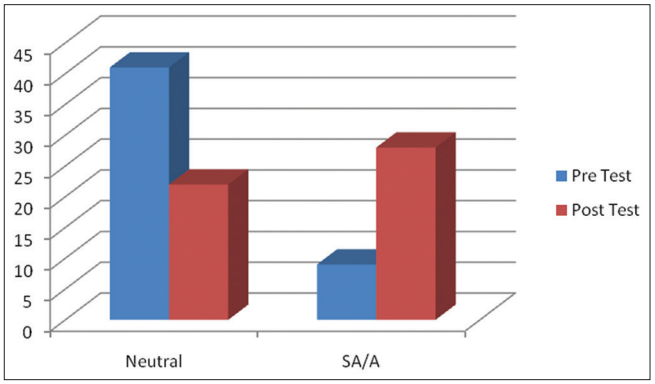
Graph 3: Q6-Working in an interprofessional manner unnecessarily complicates things most of the time



Graph 4: Q8-The interprofessional approach improves the quality of care to patients/clients



Graph 5: Q11-The interprofessional approach permits health professionals to meet the needs of family caregivers as well as patients



Graph 6: Q12-Having to report observations to a team helps team members better understand the work of other health professionals

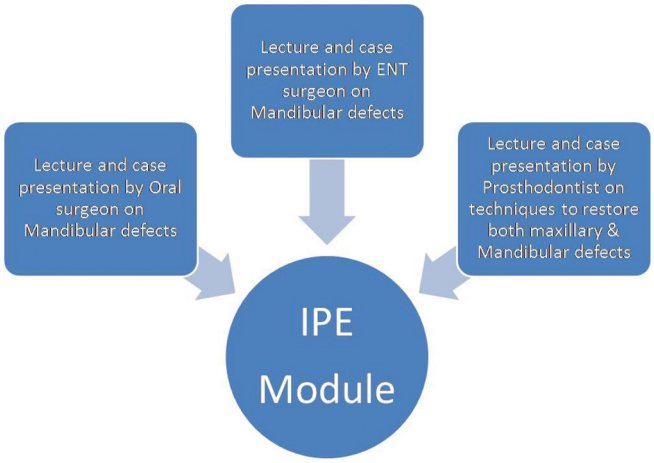


Figure 2: Interprofessional education module

of oral complications of cancer therapy, maxillofacial rehabilitation, and psychosocial training in oncology.

Team involves many specialists, but surgeons and prosthodontists are the main pillars behind success of every case, and their coordination during planning and execution phase is of paramount importance. The other supporting branches also include radiologist, speech therapist, psychiatrists, and social worker.

Taking this into account it for the ease of conduction was decided to include surgeons and prosthodontists in the first phase of developing interprofessional module. Rest of the specialties will be included in subsequent modules in future.

The module was designed in such a way that all information right from basic to advanced techniques in management of jaw malignancies surgically was presented [Figure 2]. Modern ways of maxillofacial rehabilitation including advances in materials and retentive techniques were discussed. Advantages and limitations of surgical and prosthetic reconstruction as well as modifications during surgery to enhance the prosthodontic prognosis were emphasized giving clinical case examples. The role of prosthodontist early at treatment planning stage was outlined with its effect on final outcome. Small group discussions were carried out to answer pertaining to doubts raised by participants.

Regarding the scores of the evaluation done using ATHCTS questionnaire both before and after the module, there were statistically significant differences in answers to questions linked with following themes [Graphs 1-6]:

1. Collaboration and role perception: Question numbers 2, 5, 6, 8, 11
2. Quality of patient care: Question number 12.

Interpretation of this points toward the fact that there were improved attitudes toward perception of each other's role in maxillofacial rehabilitation after participation in the module. Furthermore, positive effect of better teamwork on patient care was perceived by greater number of participants in posttest as compared to pretest.

The interviews also revealed that the participants perceived this intervention in a positive way.

Overall, the results are in accordance with the opinions of Hammick *et al.*,[6] who observed that IPE is generally well received and useful for enhancing outcome of interdisciplinary care.

The module well received and was successful in improving the outlook of participants regarding collaborative practice during maxillofacial rehabilitation.

CONCLUSION

Rehabilitation of maxillofacial is a challenging task. The success depends on not only the skills of team members but also their communication and working as one cohesive unit understanding each other's strengths as well as limitations.

The present IPE module regarding maxillofacial rehabilitation was generally well received, enabling knowledge, and skills necessary for collaborative working to be learned. In the context of quality improvement initiatives, this module can be used as a mechanism to enhance the development of collaborative practice and improvement of services.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Alani A, Owens J, Dewan K, Summerwill A. A national survey of oral and maxillofacial surgeons' attitudes towards the treatment and dental rehabilitation of oral cancer patients. Br Dent J 2009;207:E21.
2. Hammick M, Freeth D, Koppel I, Reeves S, Barr H. A best evidence systematic review of interprofessional education: BEME guide no 9. Med Teach 2007;29:735-51.
3. Curran VR, Sharpe D, Forristall J, Flynn K. Attitudes of health sciences students towards interprofessional teamwork and education. Med Educ

2007;41:892-6.
4. Robben S, Perry M, van Nieuwenhuijzen L, van Achterberg T, Rikkert MO, Schers H, *et al.* Impact of interprofessional education on collaboration attitudes, skills, and behavior among primary care professionals. J Contin Educ Health Prof 2012;32:196-204.
5. World Health Organization. Preamble to the Constitution of the World Health Organization as Adopted by the International Health Conference. Official Records of the World Health Organization; 1948. p. 100. Available from: http://www.who.int/about/definition/en/print.html. [Last cited on 2012 May 04].
6. Bridges DR, Davidson RA, Odegard PS, Maki IV, Tomkowiak J. Interprofessional collaboration: Three best practice models of interprofessional education. Med Educ Online 2011;16.
7. Schneider R, Roberts D. When teamwork is the best way. J Dent Technol 2012;29:36-40.
8. Price SS, Funk AD, Shockey AK, Sharps GM, Crout RJ, Frere CL, *et al.* Promoting oral health as part of an interprofessional community-based women's health event. J Dent Educ 2014;78:1294-300.
9. Jackson JT, Quinonez RB, Kerns AK, Chuang A, Eidson RS, Boggess KA, *et al.* Implementing a prenatal oral health program through interprofessional collaboration. J Dent Educ 2015;79:241-8.
10. Dounis G, Ditmyer M, Vanbeuge S, Schuerman S, McClain M, Dounis K, *et al.* Interprofessional faculty development: Integration of oral health into the geriatric diabetes curriculum, from theory to practice. J Multidiscip Healthc 2013;7:1-9.
11. Klasser GD, Gremillion HA. Past, present, and future of predoctoral dental education in orofacial pain and TMDs: A call for interprofessional education. J Dent Educ 2013;77:395-400.
12. Rafter ME, Pesun IJ, Herren M, Linfante JC, Mina M, Wu CD, *et al.* A preliminary survey of interprofessional education. J Dent Educ 2006;70:417-27.
13. Khan Z, Farman AG. The prosthodontist's role in head and neck cancer and introduction – Oncologic dentistry. J Indian Prosthodont Soc 2006;6:4-9.