

Filling the Void between the Existing Dental Education in Par with Dental Students and Dental Sign Language for Effective Clinical Practise

Chandrashekar BS¹, Preetam Kumar Khatua², Suchitha L³, Anieta Merin Jacob⁴, Shibu P⁵

ABSTRACT

Introduction: Across the dental colleges, one thing that the students are taught is the idea of 4 handed dentistry, behavioural dentistry with differently abled patients and ergonomics. However, if there is something that the pandemic has taught us it is that, no matter how hard we try to make the system more efficient we lack the basic structural foundation to establish it properly because the building foundation/ budding dentists of tomorrow have no idea or enthusiasm to embrace the newer mode of practices. Aim: Aim of the study is to assess the perception of dental students and patients regarding the usage of hand signals during dental procedure.

Materials & Methods: A total of 110 dental students were taken and randomly divided into groups of 2 ; Group A and Group B, consisting 55 students each. Also, a questionnaire study was undertaken among the dental students and patients. A test of 10 marks is conducted and a cross – sectional questionnaire was followed for both the groups and responses was compared. Again, a cross – sectional questionnaire was conducted among 110 patients seeking treatment in various departments of our hospital after demonstrating and using hand signals for communication during treatment. The questionnaire constituted questions based on difficulty in communication and attitude toward hand-sign usage. The data were subjected to Pearson's Chi-square statistical analysis.

Result: Better scores were achieved by students of Group – B who were given physical and verbal training about the hand signals and a greater acceptance was seen by them as compared to the students of Group – A. Majority of the patients preferred the usage of hand signals over interrupted talking for reducing their fear and anxiety during a treatment procedure. They also agreed to the point that these hand signals can improve dentist–patient rapport.

Conclusion: Hence training should be given to all the students in their curriculum regarding hand signals for them to inculcate a better communication with the patient as well as providing a good experience to the patient while treatment. Hand signals can provide a unique way to understand patient's discomfort and respond immediately to their discomfort. This can help patients to gain confidence on their dentists and they would approach the same dentist for further treatment requirements.

Keywords: Existing Dental Education, Dental Students, Dental Sign Language, Effective Clinical Practise

if there is something that the pandemic has taught us it is that, no matter how hard we try to make the system more efficient we lack the basic structural foundation to establish it properly because the building foundation/ budding dentists of tomorrow have no idea or enthusiasm to embrace the newer mode of practices. Now, in case, a doctor working in a PPE suit, the extraneous environment not only forces him/ her to limit their talking abilities but also their routine communication with the external people (especially assistant) gets reduced. The main idea of the kit is to maintain the social ambiguity in terms of distance forcing one to be receptive. Now in such cases how do one explain the patient or assistant about the treatment? How does the patient convince the doctor about his or her feelings? Although certain basic symbols are existent in practices across the world for the same nothing concrete has been established yet so far, yet even if it has, it has never trickled down our textbooks/ young dental students. Not only knowing basic hand signals helps one to communicate better within strenuous environment but also it makes the communication with patients much easier. Most of the dental schools do not place much emphasis on communication skill during student training and evaluation. Thus, the dentists graduate without appreciating how well the information is being received, understood, and applied during communication.⁸ In general, a clear gap in communication between dentists and patients leads to frustration on both sides.² Thus, it is suggested that dentists should be trained to enhance their communicative and informative skills. The treatment is obviously exercised

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INTRODUCTION

Across the dental colleges, one thing that the students are taught is the idea of 4 handed dentistry, behavioural dentistry with differently abled patients and ergonomics. However,

in the mouth, which is not only needed for verbal expressions but also in an area of the body that is extremely sensitive and highly charged with emotional significance.⁷ While performing the treatment in the mouth, the dentist focuses on the success of completing his/her immediately pressing work and not on maintaining verbal interactions with the patients except for information-gathering purposes that will affect the immediate treatment procedures.¹ Next matter of concern is communication between clinicians and patients during various dental procedure to reduce their anxiety and provide a successful treatment. Fear of dental procedures are prevalent and have a highlighting impact on the quality of life and the quality of dental treatment performed – both in terms of limiting attendance for treatment and in the nature of the dental treatment likely to be performed.⁹ Dental procedures can result in fear and anxiety, especially the more invasive ones. Caring for patients not only means treating their chief complaint and relieving them from pain, but also to handle and help them overcome their anxiety and fears.¹ There is no data regarding communication during the treatment procedure, which is the crucial point of communication breakage. Hence, we opt a different way in communication, i.e., hand signals.⁵

Objectives

1. To study whether the existing knowledge among the dental students is enough to inculcate hand signals in their clinical practice or they need to be taught, made aware and expertise about hand signals by conducting various sessions
2. To study the response and understanding of patients towards the usage of hand signals during dental treatment.
3. To assess the efficacy of usage of hand signals during dental treatment to manage patients in various departments, when a patient is having excoriating pain and when the patient is undergoing invasive procedures like RCT, extraction, minor surgeries.

MATERIALS AND METHODS

The study was conducted in two parts:

Part 1 - Testing and creating awareness among dental students about the importance of hand signals.

Part 2 - Checking further similar efficiency of dental signs within the clinical setup using patients.

PART 1 - A total of 110 dental students from 2nd, 3rd, 4th year and interns of our college were taken and randomly divided into groups of 2 consisting 55 students each. On the day of study, first group was invited and displayed around 10 – 15 hand signals using projector without any physical demonstration or prior training. After the demonstration, the students were asked to answer a multiple-choice questionnaire of 10 marks based on their understanding. Written consent was taken from each student and they were asked to fill a cross sectional survey form to analyse their understanding and acceptance. Next, one student was selected at random (excluding the 110 subjects) and was being given physical

and detailed training regarding the same set of hand signals by the principal investigator and named as the expert student. After that, the second group was called and the expert student now demonstrated and explained the set of hand signals in front of them. After the demonstration, the students were asked to answer the same multiple-choice questionnaire of 10 marks which was provided to first group. Written consent was taken from each student and they were also asked to fill the same cross-sectional survey form to analyse their understanding and acceptance and compare their score and responses with that of first group. The questionnaire clarity and time necessary for filling it up were traced in the pilot study, which was conducted before 10 days of main study taking 10 students from each group and following the same methodology.

PART 2- 110 patients between age group of 18 – 70 years, seeking treatment in various departments of our hospital were taken. A set of hand signals were first shown and demonstrated to them. Then they were instructed to use those hand signals to communicate with the dentist during the treatment. Post treatment, a cross-sectional questionnaire survey is conducted among them. The nature and purpose of the study were explained to the patients and a signed consent was obtain

The data were subjected to Pearson's Chi-square statistical analysis.

RESULT

At first, the scores secured by students of both Group A & B in the 10 marks multiple choice questionnaire were compared using the Mann-Whitney test. Mean score of Group A came out to be 5.56, with a standard deviation of 1.42 and median of 5.0, whereas Mean score of Group B came out to be 8.29, with a standard deviation of 1.54 and median of 9.0. Mean difference is -2.730. Higher mean score was recorded in Group B compared to Group A and the difference between them was found to be statistically significant ($P < 0.001$)

Next, the responses for individual questions by both the groups were analysed using Pearson's Chi-square test. When asked whether they have received any training regarding hand signals, from Group – A, 87% (n = 48) answered NO and 13% (n = 7) answered YES, from Group – B, 89% (n = 49) answered NO and 11% (n = 6) answered YES

When inquired of awareness about use of hand signals being a part of communication during dental checkup/ treatment and is used by dentists of many countries across the world, from Group – A, 45% (n = 25) answered NO and 55% (n = 30) answered YES, from Group – B, 47% (n = 26) answered NO and 53% (n = 29) answered YES.

When asked whether they agree that hand signals can be part of communication during dental treatment and patient can communicate with a better ease using hand signals during treatment, from Group – A, 73% (n = 40) answered NO and 27% (n = 15) answered YES, but from Group – B, 25% (n = 14) answered NO and 75% (n = 41) answered YES. Statistically significant association was found between the

Sore comparison	Group A		Group B	
	Mean	Median	Standard deviation	SE of mean
Mean	5.56	5.0	1.42	0.19
Median	5.56	5.0	1.42	0.19
Standard deviation	1.42	1.0	1.54	0.21
SE of mean	0.19	0.19	0.21	0.21
Responses to questions	Yes	NO	Yes	NO
Have you ever got any training regarding hand signals?	13% (7)	87% (48)	11% (6)	89% (49)
Are you aware that use of hand signals is a part of communication during dental check-up/ treatment and is used by dentists of many countries across the world?	55% (30)	45% (25)	53% (29)	47% (26)
Do you agree that hand signals can be part of communication during dental treatment and patient can communicate with a better ease using hand signals during treatment?	27% (15)	73% (40)	75% (41)	25% (14)
Do you think that using hand signals by the patients can reduce their anxiety or fear of not being able to address their concern while being examined?	56 % (31)	44% (24)	65 (36)	35% (19)
Are you going to inculcate the practise of use of hand signals in your routine dental practise?	31 % (17)	69 % (38)	53% (29)	47% (26)
Do you agree that dental students should be given training about use of hand signals and its importance in the academic curriculum?	31 % (17)	69% (38)	55% (30)	45% (25)
According to you, which better, hand signals or verbal communication in between dental procedures?	H 31 % (17)	V 69 % (38)	H 64% (35)	V 36 % (20)

Table-1:

Question	Yes, n(%)	No, n(%)
Do you feel uncomfortable, when your dentist expects a response from you with any instrument in your mouth?	68 (61.8)	42 (38.2)
Do you fear that you cannot express your pain or discomfort when any instrument is in your mouth during any dental procedure?	68 (61.8)	42 (38.2)
Do you think that use of hand signals by patients, during a dental procedure, can reduce above problems?	68 (61.8)	42 (38.2)
Was it comfortable for you during the treatment, when the doctor instructed you to communicate through hand signals?	76 (69.1)	34(30.9)
Have you ever visited any dentist before, who inculcated the practise of using hand signals (lifting of hands to stop etc)?	24(21.8)	86(78.2)
Do you think that the usage of hand signals should be made as a universal protocol?	76 (69.1)	34(30.9)

Table-2

groups and the responses received for the above question ($P < 0.001$). Higher number of respondents in Group A opted "No" as an answer, while higher number of respondents in Group B opted "Yes" as an answer.

When asked whether they think that using hand signals by the patients can reduce their anxiety or fear of not being able to address their concern while being examined, from Group – A, 44% ($n = 24$) answered NO and 56% ($n = 31$) answered YES, from Group – B, 35% ($n = 19$) answered NO and 65% ($n = 36$) answered YES.

When they were asked if they are going to inculcate the practise of use of hand signals in your routine dental practise, from Group – A, 69% ($n = 38$) answered NO and 31% ($n = 17$) answered YES, from Group – B, 47% ($n = 26$) answered NO and 53% ($n = 29$) answered YES. Statistically significant association was found between the groups and the responses received for the above question ($P < 0.05$). Higher number of respondents in Group A opted "No" as an answer, while higher number of respondents in Group B opted "Yes" as an answer.

When questioned that, do you agree that dental students

should be given training about use of hand signals and its importance in the academic curriculum, from Group – A, 69% ($n = 38$) answered NO and 31% ($n = 17$) answered YES, from Group – B, 45% ($n = 25$) answered NO and 55% ($n = 30$) answered YES. Statistically significant association was found between the groups and the responses received for the above question ($P < 0.05$). Higher number of respondents in Group A opted "No" as an answer, while higher number of respondents in Group B opted "Yes" as an answer.

Lastly, when asked according to them, which better, hand signals or verbal communication in between dental procedures, from Group – A, 31% ($n = 17$) answered hand signal and 69% ($n = 38$) answered verbal, from Group – B, 64% ($n = 35$) answered hand signals and 36% ($n = 20$) answered verbal. Statistically significant association was found between the groups and the responses received for the above question ($P < 0.01$). Higher number of respondents in Group A opted "verbal" as an answer, while higher number of respondents in Group B opted "hand signals" as an answer.

Analysis of the Patient's data (table – 2)

When questioned on discomfort in responding to dental

practitioner when there is an instrument in the mouth, 61.8% (n = 68) of the patients felt uncomfortable to communicate. About 61.8% (n = 68) of the respondents experienced fear, when they were unable to express their pain with instruments in their mouth during any dental procedure. 61.8% (n = 68) of the patients agreed that using hand signals during a dental treatment may help them to overcome the difficulty in communication and fear. When inquired about their comfortability and acceptance towards hand signals used during the treatment, 69.1% (n = 76) of the patients responded positively. When questioned about the usage of hand signals by any dental practitioner, 78.2% (n = 86) of the patient said that the previous dentists they have visited, did not advice any kind of hand sign to communicate during treatment. About 69.1% (n = 76) of the respondents agreed that it will be good to make hand signals as a universal protocol and should be followed by all the dental practitioners.

DISCUSSION

Effective doctor–patient communication is a central clinical function, and the resultant communication is the heart and art of medicine and a central component in the delivery of health care.¹ Fear of dental treatment and anxiety about dental procedures are prevalent and have an impact on the quality of life and the quality of dental treatment performed—both in terms of limiting attendance for treatment and in the nature of the dental treatment likely to be performed.² Research in the medical field on doctor–patient communication suggests that effective communication has the potential to help regulate patients' emotions, facilitate comprehension of medical information, and allow for better identification of patients' needs, perceptions, and expectations.³

A dentist is commonly busy with his/her job of providing effective oral health care. During this process, they tend to concentrate more into the oral cavity than to their surroundings and thereby fail to notice minor movements done by patients to show their discomfort. This can be overcome with the usage of hand signals through which a patient can effectively communicate with simple hand movements that can denote their discomfort easily. Such hand signals can be easily noticed by the dentist and thereby understanding patients' fear and anxiety making them comfortable for dental treatment.²

The interventive nature of dental procedures lends itself to short or long periods of nonverbal communication between dentists and patients because the procedure is exercised in the region, which is not only needed for verbal expressions but also that is extremely sensitive and highly charged with emotional significance.³ Patients undergoing restorative treatment (e.g., fillings, crowns, bridges, etc.) often have a rubber dam used for tooth isolation. This leads to long periods of mouth opening and an inability to verbalize. The lack of any dependable or recognized communication system during operative procedures can lead to misunderstanding, patient dissatisfaction, or an impaired patient experience.¹ Riley et al. further suggest that dentists can usually predict a satisfied patient's journey, they conclude that for improved

patient-centered care, dentists should seek to understand patient values.⁴ Most of the dental schools do not teach communication. Dentists, thus, graduate without appreciating how well the information is being received, understood, and applied during communication.⁵

In the above study, after evaluating the results, we observe that students who received physical and verbal training from someone who expertise the hand signals, performed well and scored better marks in the conducted MCQ test as compared to that of students who only visually witnessed those hand signals. Even, after receiving training, the acceptance of students towards hand signals increased by a great manner and they very well gave a positive response when inquired about the usage of hand signals in their daily practice. Hence a proper training can result in better understanding of students towards the concept of communication using hand signals. It can be well related to the example that when a topic is taught to the students by a professor, their understanding level is very high rather that when the students attempt to self – study the same topic.

Also, when the patients were given a brief idea and demonstration of hand signals, majority of them preferred it, to be a better mode of communication, which not only reduces their fear but also helps them to gain confidence towards the clinician during the treatment. During the above study, many patients who only understood local languages were subjected to clinicians not speaking the same language and the response of them was very positive as their fear of communication was reduced. Hence, hand signals can also help in overcoming the linguistic barrier. When different departments were taken into consideration, patients getting root canal treatment or patient undergoing extraction found the communication through hand signals very helpful as they were barely able to talk and usage of hand gestures helped them to convey their problems very easily. In the Department of Periodontics, as a part of aseptic protocol, all the subjects (patients) were treated where the clinician was wearing a PPE suit, face shield etc. Such physical barriers barely allow verbal communication between the patient and the clinician. This is a crucial scenario where hand signals come into picture. As per the response of following patients, it can be inferred that hand signals were extremely helpful for them to communicate with the doctor. Hence, in future, if any pandemic scenario occurs, amidst the use of certain self-protecting physical barriers, hand signals can surely aid into better communication and an effective treatment.

This questionnaire study was carried out in a relatively small sample size. Thus, carrying out the study on a larger population is intended. This study also gave us an idea about the suggestions from the dental students and general population (patients). Further, clinical studies are required to assess the efficacy of hand signals in reducing the anxiety and fear levels.

Recommendations

Although any dental practitioner can use any hand signal of his/her convenience, following a universal set of hand signals

can be helpful around the world. Raymond Cadden is the creator of the eight-sign method, the DentiSign. This method is designed to restore control to the patient during dental procedures, by creating a channel of communication with the dentist. DentiSign hand signals can be learned in <15 s and are suitable for all practices. The method can also have a positive impact on workflow and on practice referrals.⁶

CONCLUSION

So, we can conclude that, training should be given to all the students in their curriculum regarding hand signals, for them to inculcate a better communication with the patient as well as providing a good experience to the patient while treatment. Majority of the patients also preferred the usage of hand signals over interrupted talking for reducing their fear and anxiety during a treatment procedure. They also agreed to the point that these hand signals can improve dentist-patient rapport. Hand signals can provide a unique way to understand patient's discomfort and respond immediately to their discomfort. This can help patients to gain confidence on their dentists and they would approach the same dentist for further treatment requirements. Efficient dentist-patient relationship is required for successful treatment experience in a dental setting. Therefore, these hand signals, which are easy-to-use system, will benefit the patient by providing a clear unambiguous signal system. It will also benefit the dental team (dentist, nurse, hygienist, therapist) by providing a safe, reproducible, and convenient method of nonverbal communication during operative procedures. Hand signals can be any different signals that are easy to use and easily understood. Creating different hand signals which can help in the development of communication and standardizing them can help in making it a universal protocol in a global point of view.

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