

Using digital devices to improve communications between clinicians and patients during implant-prosthetic treatment: A clinical study.

Mario Imburgia, DDS, PhD¹ and Christian Coachman, DDS, CDT²

¹Private practice Palermo, Italy; Visiting Professor "City of London" Dental School, London, UK | ²Private practice "Well Clinic", Sao Paulo, Brazil



Scan to download a copy of this poster to your smartphone

Topic: Implant therapy outcomes, prosthetic aspects

BACKGROUND AND AIM

Communication with the patient and within the dental team is a critical factor that can influence treatment outcomes, especially in complex and multidisciplinary dental treatments. Indeed, effective communication, especially when not focused on marketing but on proper assessment of the intra-oral situation of the patient, can improve the patient's acceptance of the protocol and his/her satisfaction with the treatment. Better communication within the dental team can improve the final result and reduce the time needed to reach it.¹⁻⁹

Thanks to widely available technological devices such as a tablet, new visual tools can be introduced when communicating with the patient and the dental team. Use of facial, dento-labial and dental aesthetic analysis of the patient and its application to various clinical steps are likely not only to improve the predictability of the esthetic outcome but also to reduce the number of the usually required clinical sessions. The aim of this study was to evaluate the influence of a tablet as a visual communication tool on patient satisfaction in the context of an implant-prosthetic treatment.

METHODS AND MATERIALS

31 patients needing implant- or tooth-supported restorations (6 single tooth, 21 partial, and 4 full arch restorations) were enrolled in the study. All patients were asked to complete two questionnaires.

QUESTIONNAIRE 1 was designed to assess patient expectations, anxiety and oral health perception, and it was administered twice during the first visit. The first administration was after verbal explanation of the patient's oral health status and potential treatment. The second was after an additional explanation using a Smile Designer PRO application, which allows photo editing to demonstrate the anticipated esthetic outcomes of the proposed treatment.

QUESTIONNAIRE 2 was designed to assess patient satisfaction with treatment outcomes. It was administered twice, once at the conclusion of the treatment and a second time following a discussion using the tablet to review the pre- and post-operative clinical pictures, summarizing the clinical steps and highlighting the details of the restored region.

Questionnaire 1

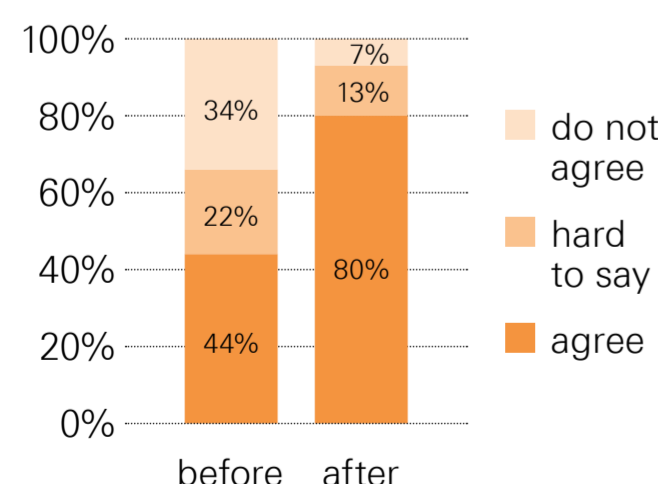
	Agree	Hard to say	Do not agree
After the visit today I know the condition of my mouth.			
After the visit today I have a good idea of what is going to happen with my teeth during the next visit.			
The dentist told me today all I wanted to know about my dental problems.			
I really felt my dentist understood me.			
I felt that the dentist accepted me as a person.			
The dentist was thorough in performing the procedure.			
I was satisfied today with what the dentist did.			
The dentist seemed to know what he/she was doing during my visit.			
I could talk about anything with the dentist.			
I don't feel anxious before the next visit.			

Questionnaire 2

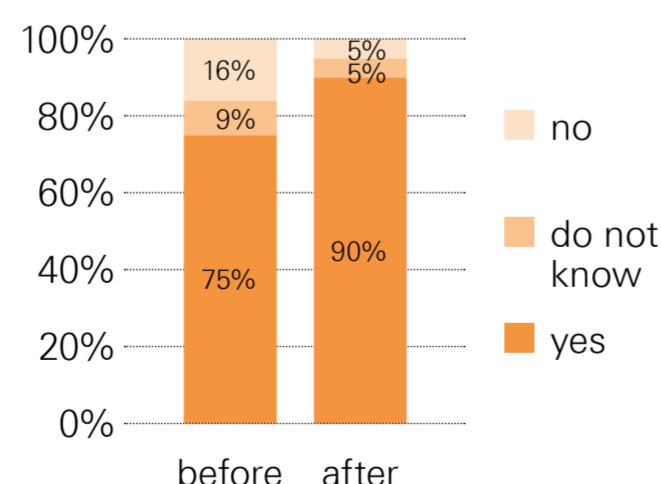
	Yes	Do not know	No
If before the treatment began, you had known what to expect from it, would you have gone through with it anyway?			
Would you recommend the treatment you have received to a relative or close friend?			
Would it have been better if you hadn't begun the treatment at all?			
Would you take the same treatment again if it were necessary?			
Did you receive enough information about the treatment before the treatment began?			
Do you think you have gotten enough information about how to take care of your teeth?			
Do you think the cost of treatment was appropriate?			
If the treatment had been twice as expensive, would you have gone through with it anyway?			
Do you think that your oral health has been optimized?			

RESULTS

Satisfaction with care (Questionnaire 1)



Satisfaction with treatment outcomes (Questionnaire 2)



Statistical descriptive analysis revealed that patients were significantly more satisfied in the second administration of each questionnaire, indicating that visual interactive communication influenced patient satisfaction with treatment outcomes.

RESULTS



Figure 1: Pre-operative view.

Figure 2: Smile Design Pro application can highlight the facial landmarks that drive the proper tooth shape, dimension and position.

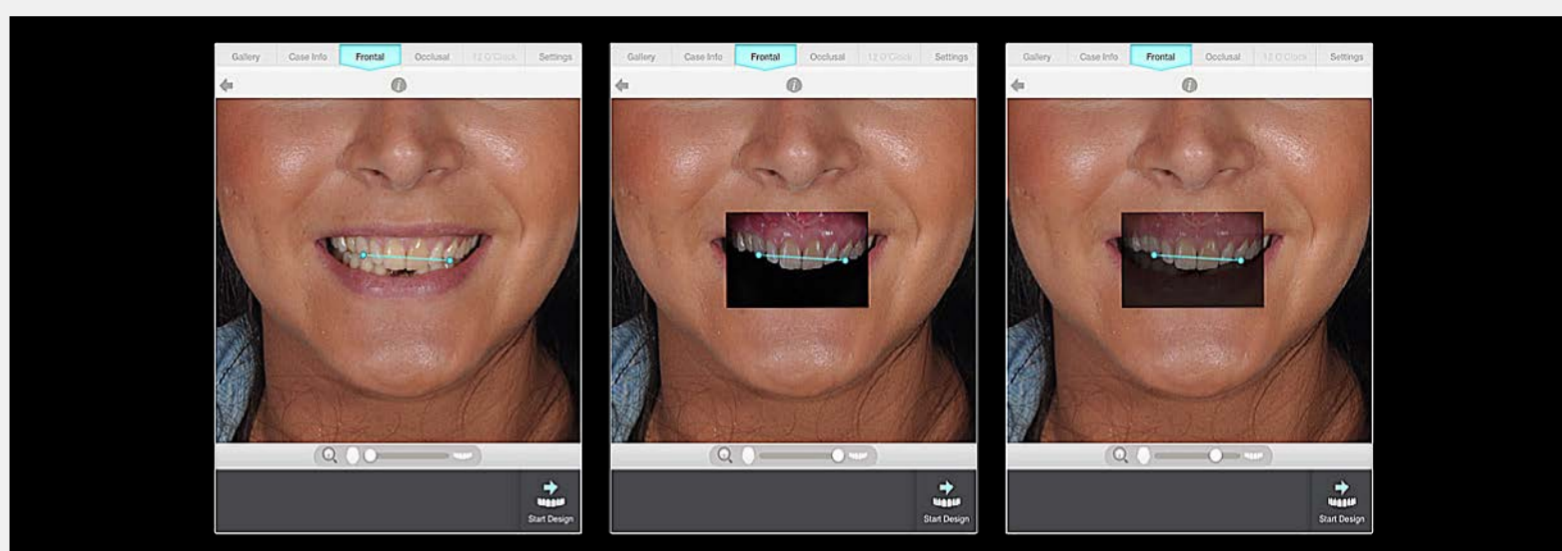


Figure 3: Superimposition of intra-oral and facial pictures to match the orientation of these different clinical views.

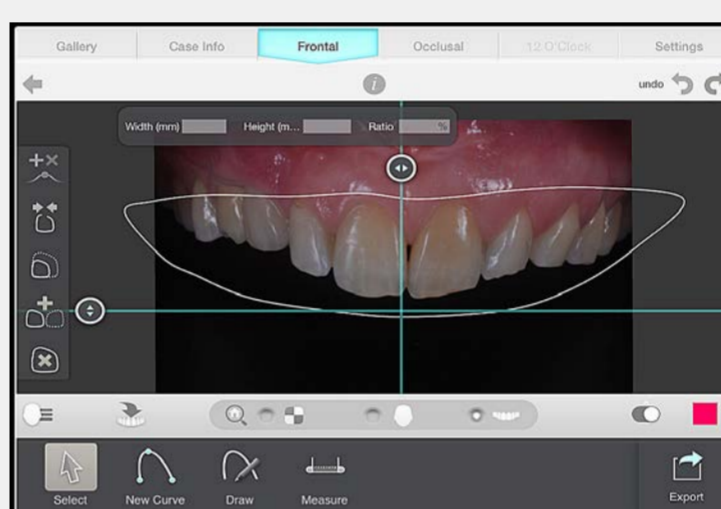


Figure 4: The facial landmarks properly positioned in the intra-oral picture.

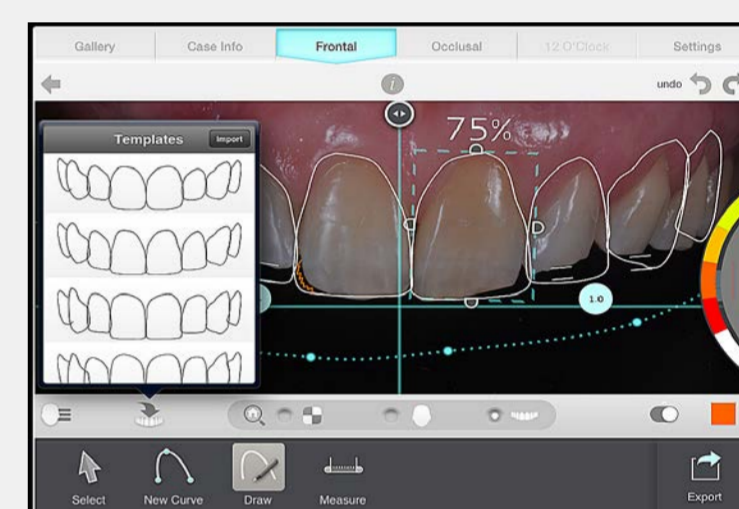


Figure 5: Pre-formed mock ups overlapped with the intra-oral picture.

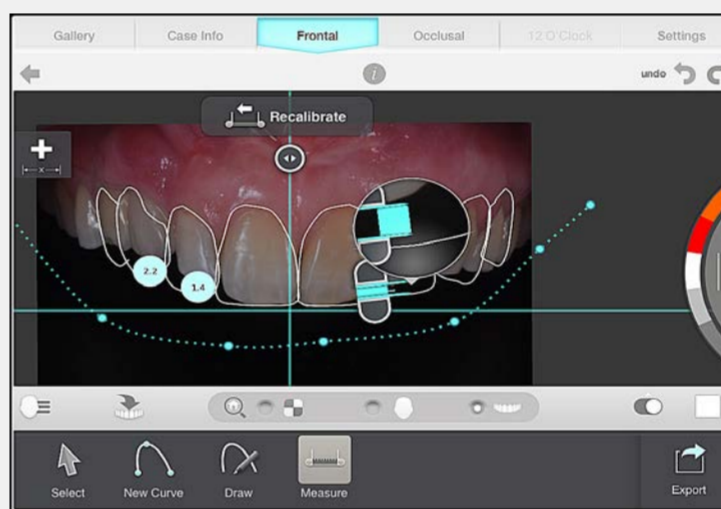


Figure 6: Measuring the desired modifications before starting the treatment planning (after a calibration procedure).

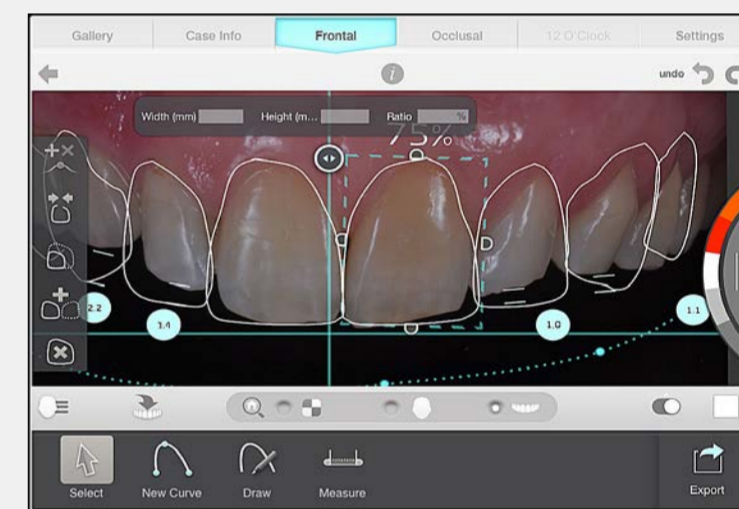


Figure 7: The graphic is ready for discussion with the patient and the entire dental team. Once approved, it can be shared as a Jpeg or an STL file for use by CAD software (Nobel Procera).



Figure 8: Final impression.



Figure 9: Post-operative view. The restorations are well integrated with peri-oral tissues.

CONCLUSIONS

Patients undergoing implant-prosthetic rehabilitation should be given the opportunity to ask questions and to talk about their dental health using the clinical picture of their mouth, and dentists should use these high-tech visual tools to interact with the patients and the dental teams. This approach can help improve patient satisfaction with care and treatment outcomes.

REFERENCES

- Roter D, Stewart M, Putnam SM, Lipkin M, Stiles WB, Inui TS. Communication patterns of primary care physicians. *J Am Med Assoc* 1997;277:350-356.
- Savage R, Armstrong D. Effect of general practitioner's consulting style on patients' satisfaction: A controlled study. *Br Med J* 1990; 301:968-970.
- Williams S, Weinman J, Dale J. Doctor-patient communication and patient satisfaction: A review. *Fam Pract* 1998;15:480-492.
- Street RL Jr. Patients' satisfaction with dentists' communicative style. *Health Commun* 1989;1:137-154.
- Lahti S, Tuutti H, Hausen H, Kääriäinen R. Opinions of different subgroups of dentists and patients about the ideal dentist and the ideal patient. *Community Dent Oral Epidemiol* 1995;23:89-94.
- Murray H, Locker D, Mock D, Tenenbaum H. Patient satisfaction with a consultation at a cranio-facial pain unit. *Community Dent Health* 1997;14:69-73.
- Mellor AC, Milgrom P. Dentists attitudes towards frustrating patient visits: Relationship to satisfaction and malpractice complaints. *Community Dent Oral Epidemiol* 1995;23:15-19.
- de Lima EA, dos Santos MB, Marchini L. Patients' expectations of and satisfaction with implant-supported fixed partial dentures and single crowns. *Int J Prosthodont*. 2012 Sep-Oct;25(5):484-90.
- Rothwell, J. Dan. In the company of others: an introduction to communication (3rd ed.). New York: Oxford University Press. 2010