



ORIGINAL ARTICLE

Affective-participative techniques for patient cooperation in periodontics from five to 17 years of age with fixed techniques

Técnicas afectivo-participativas para la cooperación del paciente en periodoncia de *cinco* a 17 años con técnicas fijas

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ABSTRACT

Introduction: the adequate cooperation of orthodontic patients with fixed techniques in our profession is usually complex, and their cooperation is essential in order to provide high quality treatment.

Objective: to evaluate the effectiveness of the Affective-Participative Techniques as part of the educational intervention to improve the cooperation of the orthodontic patient with fixed techniques.

Methods: a developmental research was carried out from October 2021 to September 2023, where an educational intervention with participatory action was applied through the use of affective participatory techniques based on a diagnosis made to improve the cooperation of the orthodontic patient from five to 17 years of age with fixed techniques. A non-probabilistic sampling was carried out, so the sample consisted of 78 patients out of the 154 that formed the universe. The data were processed using the SPSS 21,0 statistical program.

Results: female sex predominated, as well as the adolescent population group. In the group of cases where affective-participative techniques were used, there was a prevalence of moderate esthetic affectation, while in the control group where these techniques were not applied, the greatest esthetic affectation was: very affected. With regard to the social impact of dental esthetics, in the group of cases there was a slight predominance and in the control group, there was a very great impact.

Conclusions: better benefits were observed in the group of cases in which the affective-participative techniques were used. The usefulness of these techniques to improve cooperation was demonstrated.

Keywords: Affective Participatory Techniques; Educational Intervention; Periodontal Medicine.

RESUMEN

Introducción: la adecuada cooperación del paciente ortodóncico con técnicas fijas en nuestra profesión suele ser compleja, siendo esencial su colaboración para poder brindar un tratamiento de alta calidad.

Objetivo: evaluar la efectividad de las Técnicas Afectivo Participativas como parte de la intervención educativa para mejorar la cooperación del paciente ortodóncico con técnicas fijas.

Métodos: se realizó una investigación de desarrollo de octubre 2021 a septiembre 2023, donde se aplicó una intervención educativa con acción participativa mediante el empleo de técnicas afectivas participativas a partir de un diagnóstico realizado para mejorar la cooperación del paciente ortodóncico de cinco a 17 años con técnicas fijas. Se llevó a cabo un muestreo no probabilístico, por lo que la muestra estuvo conformada por 78 pacientes de los 154 que formaron el universo. Los datos se procesaron mediante el programa estadístico SPSS 21,0.

Resultados: predominó el sexo femenino, así como el grupo poblacional de adolescentes. En el grupo de casos donde se trabajó con las técnicas afectivo-participativas, se constató la prevalencia de una afectación estética moderada, mientras que en el grupo control donde estas técnicas no se aplicaron la mayor afectación estética fue: muy afectada. En cuanto al impacto social de la estética dental en el grupo de casos predominó un poco y en el grupo control, la afectación fue de mucho.

Conclusiones: se logró constatar mejores beneficios en el grupo de casos en los cuales se trabajó con las técnicas afectivo-participativas. Quedó demostrada la utilidad de estas técnicas para mejorar la cooperación.

Palabras clave: Técnicas Afectivo Participativas; Intervención Educativa; Medicina Periodontal.

INTRODUCTION

In all units of the Cuban National Health System (NHS), health education actions are carried out.⁽¹⁾ During childhood, a series of habits and behaviors are created that will significantly influence the health of the individual throughout his or her life. For this reason, this is the most appropriate time to promote healthy attitudes and lifestyles.⁽²⁾

The proper management and cooperation in childhood become a real challenge for the development of new methods of health education and the preventive approach alerts us to the increasingly important need concerning this subject. It is necessary to implement methods of social communication and affective exchange. An essential instrument to face this challenge are the affective participatory techniques that facilitate the acquisition of new knowledge, achieve motivation and cooperation, mainly in children.⁽³⁾

Facial aesthetics, associated with teeth, has been a concern for society since the dawn of humanity. The fear of social rejection due to changes in the shape, color or position of teeth can produce a great psychosocial impact. Dentomaxillofacial anomalies (DMFA), as causes of aesthetic disturbances, have very particular characteristics and present various degrees of complexity to treatment; however, they have one thing in common: they generally affect the psyche of patients who suffer from them, especially children and adolescents ⁽⁴⁾

In this sense, the patient's self-perception of need for orthodontic treatment plays a very important role, since what is attractive to the orthodontist may not be what the patient perceives as attractive and satisfactory in clinical results, where a dilemma is created to discern the priority of the treatment and the guidance required by both the family and the patient.⁽⁴⁾

Traditional ways of measuring oral health are based on clinical standards that rarely reflect the functional or psychosocial aspects of the individual. Oral health-related quality of life is a dynamic construct about the subjective perception of the impacts of oral health on an individual's daily living activities. Estimation of health-related quality of life has become a vital complement to normative clinical data in epidemiological and clinical research.⁽⁵⁾

Oral health-related quality of life has been defined as the absence of negative impacts of oral conditions on social life and a positive sense of dentofacial self-confidence.⁽⁵⁾

The fundamental objective of this research is to evaluate the effectiveness of Affective Participatory Techniques as part of the educational intervention to improve orthodontic patient cooperation.

METHODS

This is a developmental study in oral health using affective participatory techniques. A quasi-experimental study that consisted of the application of an educational intervention to improve cooperation in children aged five to 17 years, over a two-year period, which was the time in which the study was conducted.

A non-probabilistic sample was used, where the choice of the subjects to participate did not depend on whether they all had the same probability of being chosen, but on the decision of the researcher. The sample was selected in a very careful and controlled manner, in a way directed and intentional by the researcher. Typical subjects were selected, with certain characteristics specified in the inclusion criteria. In this way, those who participated in the research were not selected at random to obtain the sample, but through a careful and controlled selection of the subjects, they were chosen one by one according to the degree to which they fit the criteria, in addition to the attributes established to be able to provide the most relevant information for the purposes of the research.

From the universe of 154 patients, the sample was made up of 78. The raffle method was used and from this sample two groups were formed, also randomly selected, with the same number of patients each:

- case group: made up of the patients to whom the independent variable or experimental stimulus will be applied (TAP).
- Control group: made up of the same number of patients, but to whom the independent variable or experimental stimulus will not be applied (TAP).

The following criteria were established for sample selection.

➤ Inclusion criteria:

- a) Patients aged five to 17 years.
- b) Voluntariness, expressed by informed consent.
- c) Treatment with fixed technique.

- Exclusion criteria:
 - a) Patients with physical or mental disabilities.
 - b) Adult patients.
- Exit criteria:
 - a) Patients who, after having given their informed consent to participate, do not wish to continue in the research.

The dental aesthetics index (DSI) was used in the research.⁽⁶⁾ It has 10 components that are measured in the patient's oral cavity, the number obtained is multiplied by the regression coefficient of each component. The results are added together with a constant of 13 points and the final derivation is interpreted according to the classification table.

The psychosocial impact questionnaire on dental aesthetics (CIPED) was also used,⁽⁷⁾ to determine the impact that anomalies have from a psychosocial perspective on the patient's life. The questionnaire consists of four components that collect a total of 23 items, and has an increasing scale whose value is multiplied by the total number of items to reach a maximum of 92 points. The scale was made up of 0 points (not at all), 1-23 points (a little), 24-46 points (somewhat), 47-69 points (a lot) and 70-92 (very much).

Descriptive statistics were used and the results are presented in tables, using the distributions of absolute and relative frequencies. The data will be analyzed using the statistical program SPSS 21,0 for Windows.

Ethical considerations

As an initial step, official approval was sought from the Scientific Council and the Medical Ethics Committee of the Faculty of Dentistry. Patients aged five to 17 years and their legal representatives were adequately notified about the purposes, objectives and activities of the research, so that they could freely agree to participate in the research activity as part of their informed consent.

RESULTS

For the implementation of the various affective participatory techniques as part of the educational intervention In order to target the group of participants, the principle of motivation through the volitional and affective sphere was taken into account, as a fundamental form of organization of the educational process, in this case to favor the cooperation of the patients with fixed techniques and compare them with the other group to which none of the affective-participatory techniques were applied.⁽⁸⁾

The actions carried out in the development and application of the different types of affective participatory techniques were based on specific teaching-assistance objectives, which ensured the development of the educational intervention in question.

The following table shows the distribution by age and sex for those patients who were part of the research, where it was observed that the female sex predominated with a total of 47 patients, representing 60,2 %, while the male sex sample consisted of 31 patients, for 39,7 %.

Likewise, adolescents predominated in relation to the population group with 51 patients, which is estimated to be 65,3 %, while children were only 27, for 34,6 %. (Table 1)

Table 1. Distribution of participants according to population group and sex.

Population group	Male		Female		Total	
	No.	%	No.	%	No.	%
Children.	10	12,8	17	21,7	27	34,6
Teenagers.	21	26,8	30	38,4	51	65,3
Total	31	39,7	47	60,2	78	100

Source: medical history.

The following table shows the distribution according to the degree of aesthetic affectation in both groups, both in the case group where the participatory affective techniques were used, and in the control group where they were not applied, and in this way, it was confirmed that in the case group the moderate aesthetic affectation prevailed with 23 patients of the 39 that made up the group, which represents 29,4 %. While in the control group the greatest aesthetic affectation was very affected with 22 patients of the total members of that group, for 28,2 %. (Table 2)

Table 2. Distribution of participants according to degree of aesthetic affectation in both groups.

Degree of Aesthetic Impact.	Case Groups		Cluster Control	
	No.	%	No.	%
Aesthetics not affected.	9	11,5	2	2,5
Moderately affected aesthetics	23	29,4	15	19,2
Very affected aesthetics.	7	8,9	22	28,2
Total	39	50	39	50

Source: medical history.

Table 3 shows the distribution of participants according to the social impact of dental aesthetics in both groups. It shows that in the group of cases where participatory affective techniques were applied, the social impact of dental aesthetics predominated slightly with 15 patients out of the 39 that made up that group, which represents 19,2 %. It was not followed by anything according to the questionnaire on the social impact in relation to dental aesthetics applied to nine patients, for 11,5 %. As for the control group, which did not receive educational support with the application of these participatory affective techniques, according to the results of the questionnaire for the social impact of dental aesthetics, the impact prevailed greatly with 17 patients out of the 39 that made up the group (21,7 %). (Table 3)

Table 3. Distribution of participants according to the social impact of dental aesthetics in both groups

Social Impact of Dental Aesthetics.	Groups of Cases		Cluster Control	
	No.	%	No.	%
Nothing	9	11,5	2	2,5
A bit	15	19,2	7	8,9
Something	8	10,2	8	10,2
A lot	5	6,4	17	21,7
Lot	2	2,5	5	6,4
Total	39	50	39	50

Source: medical history.

DISCUSSION

Regarding the distribution of patients in this research, there is correspondence regarding the prevalence of the female sex, as reflected in the study by Solís Chávez B et al.,⁽⁷⁾ where it was observed that the predominance by sex reached up to 73 % in females versus 27 % in males, a difference that, although not significant in their study, agrees with what was presented in the current research.

In the same direction, other studies by Reyes Pino JB,⁽⁹⁾ and Castillo Unsihuay JE,⁽¹⁰⁾ showed the need for orthodontic treatment in Brazilian adolescents, where a high prevalence of alterations such as malocclusions (53,2 %) and a high need for treatment in the female sex were identified.

According to Castillo J.,⁽¹⁰⁾ he carried out a study whose objective was to define the psychosocial impact on malocclusions in young people from the health establishment "Justice Peace and Life", jurisdiction of Tambo, Province of Huancayo, Department of Junín. The methodology was epidemiological, descriptive, with a sample of 60 adolescents. The result obtained was 33,3 % with the highest frequency was "nothing", being a positive impact. 30 % was obtained the answer "somewhat", and 10 % when answering "a lot", with a positive impact, regarding sex it reached 26,4 % when answering "something" being recurrent in women, and 50 % in men when answering "nothing" negative impact and age reached 40,7 % with high recurrence when answering "nothing" in 12 to 13 years, with 33,3 % negative impact, with recurrence the answer "very much" in the age group of 16 years achieving a positive impact.

In the results of several studies, both the one by Crespo Cuenca L et al.,⁽¹⁾ and the one by Serrano Figueras KM et al.,⁽²⁾ it is evident that the answer most chosen by young people in this type of research when applying the questionnaire on the psychosocial impact of dental aesthetics is "a little", followed by "not at all", while the least chosen answer was "very much" with 10 %. Concluding the usefulness of the application of this type of questionnaire for its use in the national and international field with the purpose of creating and examining patients in orthodontic approaches using removable appliances. In addition, it coincides with our results regarding the group of cases where the affective-participatory techniques were applied.

In the research of Ortega Aguilar DP,⁽¹¹⁾ whose purpose was to examine the impact of fixed appliance therapy on the quality of life of a cohort of adolescents in Brazil, in the results the treatment group, the functional limitation score was higher in the group with orthodontic appliances ($p = 0,004$). The emotional well-being score was higher in the group with orthodontic appliances compared to the group after 1 month of intervention ($p < 0,001$). The overall CPQ 11-14 score was higher in the group with orthodontic appliances compared to the group after 1 month ($p = 0,005$). The overall CPQ11-14 score was also higher in the group after 1 month ($p = 0,001$). No significant changes were found in the control group. In mixed effects models, the interaction between group (treatment) and time was significant for functional restrictions ($p < 0,001$), emotional well-being ($p < 0,001$), and social well-being ($p = 0,004$). It was concluded that quality of life improved among adolescents undergoing orthodontic treatment.

However, in other studies such as that of Oliveira del Río JA et al.,⁽⁶⁾ as well as that of Díaz Reissner C et al.,⁽¹²⁾ whose objective was to examine the self-perception of dental aesthetics and psychosocial impact generated by young people with orthodontic treatment. In the results, the mean of the questionnaire on the psychosocial impact of dental aesthetics was equivalent to zero impact, and did not present differences regarding gender. Concluding that adolescents exhibit a minimal psychosocial impact. Findings that do not correspond with what was referred to in our results previously.

Likewise, from adolescence, interaction with the opposite sex is generated, causing individuals to manifest their respective anguish in their physical appearance. Therefore, the alterations that require fixed treatment techniques interact closely with the appearance of individuals and also persuade the visibility of various oral pathogens that simply affect multiple requirements of the routine of adolescent life, such as eating, talking, smiling, sleeping, problems performing oral hygiene, and other subjective psychological criteria such as self-esteem, satisfaction with facial aspects, the range of acceptance among friends, being the center of irony or mockery for their dental structure, mood swings such as withdrawal, humiliation, shame, anxiety, lack of attention, etc. Therefore, malocclusions will influence the routines of the subjects, becoming a requirement to reduce and manage this oral pathogen by means of orthodontic treatments with the use of orthodontic appliances to optimize the quality of life of people.

However, the use of these fixed orthodontic appliances can harm the physical appearance and self-concept of an individual not only when young, but also in adulthood. Because the use of these appliances directly influences their facial appearance, being considered unattractive by some people, but at the same time during the course of treatment a better social acceptance is observed by friends, teachers and bosses, so many people accept to undergo orthodontic treatments with the use of these fixed appliances. With this we can assume that the search for dental aesthetics has as its purpose a physiological well-being, but above all psychosocial.

The affective-participatory techniques used allowed for the development of a process of discussion and reflection and, in this sense, made it possible to achieve greater motivation in students towards the need and benefits of their use, mainly from an early age to achieve an early beneficial effect.

CONCLUSIONS

Greater benefits were found in the group of cases in which affective participatory techniques were used. The usefulness of these techniques in improving patient cooperation was demonstrated.

Conflict of interest

The authors declare that there is no conflict of interest.

Author contribution

MAR: conceptualization, investigation, formal analysis, project administration, writing - original draft, writing - review and editing.

IIEM: healingdata, writing - original draft, writing - review and editing.

All authors approved the final manuscript.

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