CORPUS PUBLISHERS

Open Access Journal of Dental and Oral Surgery (OAJDOS)

ISSN: 2833-0994

Volume 4 Issue 1, 2023

Article Information

Received date : January 21, 2023

Published date: January 30, 2023

*Corresponding author

Marco Gravante, Department of Neuroscience, Reproductive and Oral Sciences, School of Pediatric Dentistry, University of Naples "Federico II", Naples, Italy

DOI: 10.54026/OAJDOS/1054

Keywords

Pediatric Dentistry; Psychological Index; Family Support Index; Dental Therapies

Distributed under Creative Commons CC-BY 4.0

Research Article

Development of an Evaluation form for the Assessment of the Best Therapeutic Process in Pediatric Dentistry: A Pilot Study

Marco Gravante*

Department of Neuroscience, Reproductive and Oral Sciences, School of Pediatric Dentistry, University of Naples "Federico II", Naples, Italy

Abstract

In pediatric dentistry, there is a lack of studies focusing on predicting the most suitable therapeutic process after the first dental visit. The aim of the study was to develop an objective evaluation form, based on three indexes (psychological index, family support index, dental therapies complexity index), able to identify, from the first dental visit, the best therapeutic process for each child (outpatient procedure, inhalation conscious procedure, pharmacological sedation, general anesthesia). A total of 30 children underwent a first dental visit. One dentist carried out the visit, chose the best therapeutic process, without the aid of the evaluation form, and scheduled dental therapies, while the other one observed the dental visit and filled in the evaluation form. After dental treatments, the value obtained from the evaluation form was compared with the therapeutic procedure actually carried out to observe if there was a concordance, assessed through Cohen`s Kappa. Finally, Fisher test was performed for the statistical analysis. The overall concordance between the results obtained from the evaluation form and the therapeutic procedure actually carried out turned out to be 73.30%. Within the indexes, a statistically significant association was detected between the family support index and the psychological index ($p = 0.02$), but not between dental therapies complexity index and both family support index ($p = 0.30$) and psychological index ($p = 0.63$), respectively. The evaluation form was able to help clinicians to better direct the child towards the most appropriate therapeutic dental process.

Introduction

Empathy is one of the essential elements in creating a lasting relationship of trust between dentist and patient [1]. Empathy requires a receptive attitude that allows one to enter into the role of the other in order to assess how the latter experiences that situation and the emotion it evokes, as well as the exact 'verbal' and 'non-verbal' interpretation of what he or she is expressing in it [2]. From the definition of empathy, it is clear that establishing good communication with the patient is fundamental. In fact, it has been found that good communication between practitioner and patient results in greater patient compliance, during treatment, and satisfaction with the visit, the treatment and the relationship with the doctor itself [3,4]. Communication, in the dental profession, as in all those related to medicine, goes beyond mere verbal communication. Tone of voice, gaze, facial expressions, posture are indispensable fundamentals of communication, or rather, are themselves the communication [5]. It should not be forgotten that the good health professional does not only rely on his or her own knowledge, but also has recourse to the ability to create a therapeutic relationship with patients [Manani et al., 2011]. Therefore, it is crucial, when establishing the therapeutic relationship, which takes place at the time of the first visit, anamnesis and clinical examination, to pay attention not only to what the patient says, but also to the way in which he/she expresses him/herself [6]. In fact, the first consideration in managing the pediatric patient is anxiety about the dental environment. Dental Fear or Anxiety (DFA) is a normal emotional reaction to one or more dental-specific stimuli experienced as threatening. Various studies have confirmed that fear of dental treatment is one of the main reasons why patients, including pediatric patients, avoid going to the dentist even for a simple routine checkup [7]. In pediatric patients, this attitude has an impact on their oral health status with a higher incidence of caries, whether treated or not, compared to less anxious and more cooperative peers [8]. For this reason, it is extremely important to assess the degree and nature of anxiety in order to devise the most suitable control strategies. A good paediatric approach considers the child the pivotal element in a triad that is established at the time of the first visit: the 'dentist-child-parent' triad [9]. It is necessary to establish a relationship of mutual trust and respect that will accompany this triad throughout the treatment process. Parents play a fundamental role in dental care, as they themselves make decisions regarding their children's health, accepting or rejecting the treatment recommended by the practitioner [10]. Numerous authors claim that parental modelling plays a key role in the acquisition of the child's behaviour towards the dental context [11]. It is necessary to establish a relationship of mutual trust and respect that will accompany this triad throughout the treatment process. Last but not least, dentist is the person who mediates communication in the triad involving the child and the parent [12].

Objectives

It was observed that the various tests in the literature designed to assess a child's readiness for dental treatment mainly take into account the child's level of cooperation on the basis of a psychological index, with the assessment of parental behaviour and the complexity of dental treatment taking second place. Hence, the proposal of a The Pediatric Patient Collaboration in Dental Care objective evaluation form structured on three indices: psychological, family and related to dental therapy.

Therefore, in light of the above, the primary objectives of the present study are:

a. To present and validate a form for assessing the framing and management of the treatment process of the pediatric dental patient.

b. To predict the readiness for treatment of young pediatric patients after assessing them in the context of the first contact

with the practitioner, the first visit, evaluating the psychological aspects, family support and, above all, the therapeutic difficulty relative to the individual case.

The secondary objectives are:

a. To verify, by means of an appropriate statistical analysis of the data, whether the proposed objective method can be effective in determining the therapeutic choice;

b. To verify whether the objective method proposed may represent a useful diagnostic means for framing and establishing the course to be followed from the start of treatment.

Material and Methods

For the present study, 30 children were selected from among the members of the Interdepartmental Paediatric Dentistry Programme of the Azienda Ospedaliera Universitaria (A.O.U) 'Federico II' in Naples. The children in the study were divided into two age groups: GROUP I (4-9 years) and GROUP II (10-16 years). The study obtained approval by the Ethics Committee for Biomedical Activities of the University of Naples 'Federico II (Protocol n° 2/20)

The following criteria's were considered:

Inclusion criteria:

a. Age between 4 and 16 years;
b. Male and female gender;

Exclusion criteria:

a. Patients with special needs;
b. Patients with diagnosed behavioral disorders and undergoing treatment.

The selected subjects underwent a dental examination at the Interdepartmental Programme of Pediatric Dentistry of the Azienda Ospedaliera Universitaria (A.O.U.) "Federico II" of Naples, in compliance with standard examination procedures (appropriate lighting and use of a mirror) and according to the normal procedure.

Each visit was performed by two operators, in the presence of at least one of the two parents, and structured as follows

Observation and assessment of the patient and parent(s) in the waiting room.

Reception of the patient and parent(s):

i. The first operator took care of interacting and putting the child at ease, while the second operator carried out the medical history gathering with the parent(s).

ii. The child was invited to sit in the chair and the parent(s) were asked to remain silent during the clinical examination. The clinical examination of the oral cavity was performed by the first operator with basic instrumentation consisting of a mirror, speculum, dental tweezers, appropriate lighting and the aid of the dental unit's air/water syringe and aspirator.

iii. The second operator noted the diagnosis made in the patient's medical record.

iv. The first practitioner dismissed the child by rewarding him/her, both when the procedure was successful and when it was unsuccessful in order to positively motivate the less co-operative child.

v. The second operator explained to the parent(s) the diagnosis, how the procedure was planned and carried out.

vi. The Pediatric Patient Collaboration in Dental Care objective evaluation form designed for the practice was completed.

vii. The Pediatric Patient Collaboration in Dental Care objective evaluation form is structured on three indices:

   a. **PSYCHOLOGICAL:** for behavioural estimation (Table 1);

   b. **FAMILY:** for the estimation of parental support (Table 2);

   c. **THERAPEUTIC:** for estimating therapy difficulties (Table 3);

The form presents 5 aspects to be analysed for the psychological index. In particular, the child's appearance in the waiting room, the child's behaviour on entering the operating theatre, the child's behaviour at the clinical examination of the oral cavity, the child's interaction with the dentist and, lastly, the child's behaviour at the end of the visit were evaluated.

On the other hand, for the family index, two aspects were assessed by the operator: the behaviour of the parent(s) during the child's first visit and the assessment of the anxiety state of the parent(s) in relation to their previous experiences (level of anxiety transmitted by the parent to the child). Finally, three aspects were assessed for the therapy index: the difficulty of the therapies, the number of therapies to be performed and the compromised dental elements and the perception of dental pain.

i. A score of 0,1,3 and 5 was given for each aspect of the different indices.

ii. Scores of 0 and 1 are considered negative, while scores of 3 and 5 are considered positive. In addition, cut-offs were established for each index.

iii. A psychological index equal to or greater than 15 signifies a positive behavioural estimate, conversely, a value less than 15 signifies a negative behavioural estimate.

iv. Similarly, for the family index, a value of 6 or greater is a positive estimate of parental support, below this value is to be considered negative.

v. Finally, a value of 9 or higher is to be considered positive for the estimation of the difficulty of therapy, on the contrary a lower value is to be considered negative.

vi. The score of the form was calculated with a simple sum of the coded answers and is within a range from 0 to 50.

In addition, at the first visit, the parents and children were explained the purpose and mode of the study conducted and asked to voluntarily participate in the study. Informed consent to take part in the study was provided, as well as information and consent to the processing of personal data.

Next, the Pediatric Patient Collaboration in Dental Care objective evaluation form was filled in, from which the scores for data analysis were calculated. In addition, the parents were asked how often they underwent dental visits and how they coped with treatment. This was followed by an interview to assign the role to be played during the treatment: the parent was an active participant in the operational phase and was responsible for motivating their child and preparing them for treatment, including improving home habits and oral hygiene. After that, all the children started the outpatient treatment course on schedule, with a maximum of three appointments to test their cooperation if they were not prepared for the therapies. Depending on the response received, some continued with the outpatient procedure, for others it was necessary to resort to different sedation methods (inhalation sedation, pharmacological sedation and general anesthesia). The choice of the therapeutic course to be followed was left to the subjective choice of the clinician, as per standard protocol. In particular, the operator who was entrusted with the choice of the therapeutic pathway was not the same as the one who carried out the calculation of the objective score for cooperation in dental treatment for the pediatric patient, in order to ensure that the operator was not influenced by the score obtained and that, therefore, the evaluation form was as objective as possible. After completion of the dental treatment, the value obtained from the Pediatric Patient Collaboration in Dental Care objective evaluation form was taken into account for all these patients and compared with the treatment procedure actually undergone by the same subjects. It was then ascertained whether there was a high and statistically significant concordance between the results reported by the Pediatric Patient Collaboration in Dental Care objective evaluation form and the therapeutic course actually followed by means of Coen's Kappa. Finally, all the results obtained were subjected to statistical processing using Fisher's test analysis using the SPSS computer programme.

Calculation of the Pediatric Patient Collaboration in Dental Care objective evaluation form

The clinical application of the Pediatric Patient Collaboration in Dental Care objective evaluation form for the assessment of the framing and management of the treatment process of the pediatric dental patient indicates 4 different treatment modalities to which the young patient may be subjected:

i Score from 0 to 9: the child is not predisposed to treatment, due to age or personal inclination, the parents are not supportive of treatment and above all the treatments to be performed are complex and numerous. The child must undergo oral cavity clearance under general anesthesia.

ii Score from 10 to 25: The child is not predisposed to treatment, but the number and type of procedures to be performed are such that the child can be admitted to day surgery. He should be subjected to pharmacological sedation using propofol, a fast-acting hypnotic anesthetic with a short duration of action.

iii Score 26 to 35: The child is predisposed to treatment, but very frightened, the parents are supportive, and the planned treatment is such that the child can be coped with using inhalation sedation with nitrous oxide and oxygen.

iv Score 36 to 50: The child is predisposed to care, presents calmly and attentively. Outpatient appointments should be scheduled.

The Pediatric Patient Collaboration in Dental Care objective evaluation form

Table 1: Psychological index.

Psychological Index
Child's appearance in the waiting room
Quiet and relaxed, talks and plays with parents and other children present (5pt). Quiet and preoccupied, but sits composed (3pt). Agitated and restless, cannot sit still while waiting and causes disarray in the room, frequently reprimanded by parents (1pt). Cries and struggles (0pt).
Child's behaviour on entering the room
The child enters smiling, is predisposed to listen to the caregiver and sits spontaneously in the chair (5pt). The child enters the room pushed by the parents, hides, is shy and sits in the chair after being persuaded by the parents and the operator, but spontaneously (3pt). The child enters the room with the parents, but does not listen to the parents' instructions and to the practitioner's words. Sits in the chair spontaneously, but does not sit still or obey (1pt). The child is reticent, cries and does not want to break away from the parents. He does not accept to sit in the armchair (0pt).
Child's behaviour at the clinical examination of the oral cavity
The child spontaneously opens the mouth and submits to the examination, accepts the use of the mirror and speculum without backing down (5pt). The child is reticent, but after receiving explanations from the practitioner on the function of the dental instruments, he/she allows him/herself to be examined (3pt). The child allows himself to be examined, but does not allow the operator to complete the examination. He/she moves around, closes his/her mouth and is distracted by objects in the practice. Allows the use of the mirror, but refuses the mirror (1pt). The child cries and does not open his/her mouth, impossible to visit (0pt).
Interaction of the child with the dentist
The child is able to answer the questions asked by the practitioner. Expresses him/herself and is able to report dental discomfort. Listens to the practitioner's instructions on the course of treatment and the practitioner's description of the instruments present and to be used (5pt). The child listens to the practitioner paying attention, but does not speak, does not answer questions and is distrustful. He listens to the practitioner's instructions on how to carry out the therapies, but seems worried at the sight of the instruments present (3pt). The child does not pay attention to the practitioner, seems not to listen to him/her and is unable to learn all the information received from the latter about the instruments and the therapy (1pt). The child cries and does not listen, is turned towards the parents and does not allow the caregiver to interact with him/her (0pt).
Child's behaviour at the end of the visit
The child accepts the reward received for the cooperation shown, is happy and eager to return to a next appointment (5pt). The child timidly accepts the reward received for the cooperation shown, but is anxious to leave (3pt). The child shyly accepts the reward received for the cooperation shown, but is anxious to leave (3pt). The child accepts the award, but does not give it importance, is still distracted by the tools present, moves and wanders around the room not listening to the parents and the operator (1pt). The child cries, does not accept the gift (0pt).

Table 2: Family Support Index.

Family Support Index
1. Behaviour of the parent(s) during the child's first visit
The parent accompanies the child calmly, prepares the child for the visit and listens attentively to the caregiver's instructions (5pt). The parent accompanies the child and expresses his/her concerns about the treatment. Interrupts the practitioner during the visit with continuous questions and does not take care to calm the child in relation to the visit (3pt). The parent does not prepare the child for the visit, but starts by saying that the child is frightened and does not cooperate easily (1pt). The parent has a coercive approach. He/she demands that the child, obviously frightened, submit to the visit in a forced manner and then to treatment without bothering to prepare and prepare him/her for treatment (0pt).
2. Assessment of the state of anxiety of the parent(s), in relation to their previous experiences (Level of Anxiety Transmitted)
The parent reports that he/she regularly undergoes dental examinations and that he/she faces the therapies with serenity (5pt). The parent reports undergoing dental examinations but coping with therapies with stress (3pt). The parent reports that he/she frequently postpones dental visits and therapies because he/she is frightened and suffers from unpleasant memories related to past experiences (1pt).
The parent reports that they do not undergo visits and therapies because they are traumatized and/or phobic (0pt).

Table 3: Dental therapies complexity index.

Dental Therapies Complexity Index
1. Difficulties in treatment
Simple treatment without anesthesia (5pt). e.g. sealing, fissure and dimple caries, class I or II caries with minimal dentinal involvement on deciduous or permanent teeth).
Simple treatment with anesthesia but of short duration at the chairside (3pt). e.g. simple deciduous extraction, uncomplicated class I or II caries but with considerable dentinal involvement.
Complex oral cavity clearance and treatments requiring local anesthesia and longer chair time (1pt). e.g. root canal treatments of deciduous and permanent teeth, complex extractions.
Complex surgical interventions (0pt). e.g. extraction of included supernumerary elements, removal of cystic lesions, dysodontiasis of the third molar.
2. Number of therapies to be performed/ compromised elements
Less than 4 decayed deciduous/permanent elements (5pt). Between 4 and 8 decayed deciduous/permanent elements (3pt). More than 10 decayed deciduous/permanent elements (1pt). Complex oral cavity restoration/intervention (0pt).
Perception of dental pain The child, during the visit, does not complain of pain in the oral cavity, does not present abscess situations and the parents do not report episodes of acute pain (5pt).
The child, during the visit, does not complain of pain in the oral cavity, does not present abscess situations, but the parents report at least one episode of acute pain accompanied by the administration of analgesics (3pt).
The child, during the visit, complains of pain in the oral cavity, there are abscesses and the parents report several episodes of acute pain accompanied by the administration of analgesics (1pt).
The child does not feed, does not sleep, continually complains of pain in the oral cavity. The parents report that they continually subject him to cycles of antibiotic therapy for frequent abscess phenomena (0pt).

Results

The sample analysed consisted of 30 subjects who underwent a dental examination in accordance with standard examination procedures (appropriate lighting and use of a mirror) and according to the normal procedure. Of the subjects in the sample, 66.70% were female and 33.30% male (Figure 1).

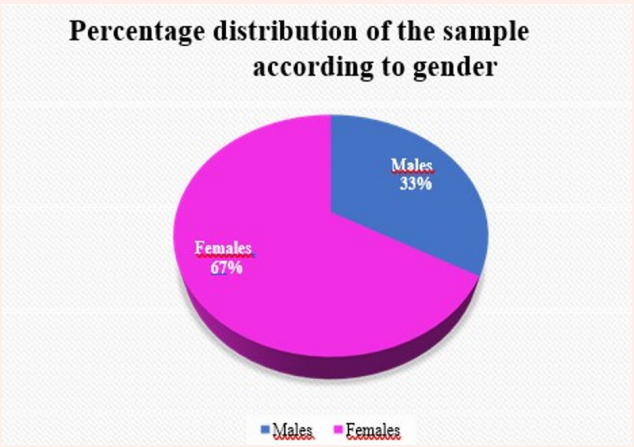

Figure 1: Percentage distribution of the sample according to gender.

The age of the patients ranged from 4 to 16 years and the mean age of the sample analysed was 9.97 with a standard deviation of 3.76. For the analysis of the results obtained, the sample was divided into two age groups, taking the distribution of the sample into account by calculating the median (9). The percentage distribution of the sample according to age is 46.67 % for children belonging to group I and 53.33 % for children belonging to group II (Figure 2).

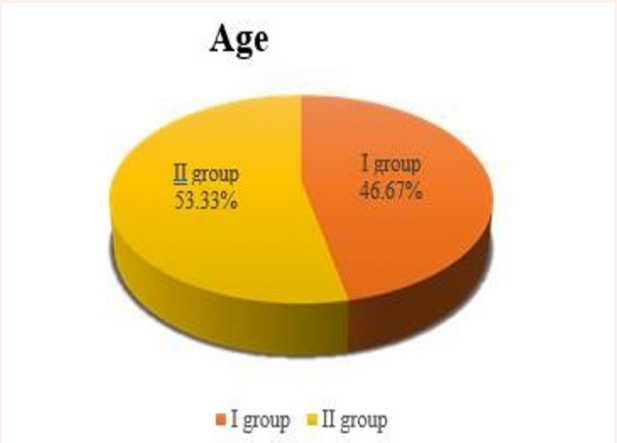

Figure 2: Percentage distribution of the sample according to age.

The results obtained from the Pediatric Patient Collaboration in Dental Care objective evaluation form predicted that 46.66% of the subjects should have undergone the outpatient procedure, 26.67% of the children should have undergone treatment with the use of inhalation sedation through the use of nitrous oxide and oxygen, 26.67% represent the share of subjects who should have undergone pharmacological sedation through the use of propofol and none under general anesthesia. On the other hand, the percentages change when considering the course of treatment actually undertaken. In fact, 50% represent the proportion of subjects who were treated on an outpatient basis, 26.67% of subjects underwent treatment with the use of inhalation sedation through the use of nitrous oxide and oxygen, 23.33% underwent pharmacological sedation through the use of propofol and none were treated under general anesthesia.

Concordance between the results obtained from the Pediatric Patient Collaboration in Dental Care objective evaluation form and the treatment process actually followed . The concordance between the results obtained from the Pediatric Patient Collaboration in Dental Care objective evaluation form and the procedure actually faced by the patients, as well as the reliability of the test were assessed by means of Cohen's Kappa calculation. As shown in Table 4 & 5, the overall concordance between the results obtained from the POC scorecard and the treatment pathway actually followed was 73.30%. The reliability of the test on the entire sample was moderate, as was the concordance (k=0.467).

In addition, Cohen's Kappa calculation was applied to the two age groups to assess whether there were any significant differences between the two samples examined. From the Cohen's Kappa analysis on the children belonging to age group I, it can be seen that the overall concordance is 75% and is moderate as is the reliability of the test itself (k=0.500). On the other hand, for the subjects belonging to age group II, it can be seen that the overall concordance is 85.70%. This means that the concordance of the test is good, while the reliability is strong (k=0.714). On the other hand, Cohen's Kappa calculation was also applied for the gender variable. It turned out that, for male subjects, the overall concordance was 60%. This means that the concordance is minimal and the reliability of the test is low (k=0.200). Finally, calculation of Cohen's Kappa, applied to the female subjects, revealed an overall concordance of 80%, i.e. the concordance was moderate as was the test's degree of reliability (k=0.600).

Table 4: Cohen's Kappa Calculation.

Test Sample	Overall concordance	Cohen's Kappa Reliability		Results
Entire sample	0.733	0.467	Moderate	Moderate concordance
Group I	0.750	0.500	Moderate	Moderate concordance
Group II	0.857	0.714	Strong	Good concordance
Males	0.600	0.200	Weak	Weak concordance
Females	0.800	0.600	Moderate	Moderate concordance

Table 5: Interpretation of Cohen's Kappa index values.

Kappa	Concordance	Reliability
<0.01	None	None
0.01 – 0.20	Weak	Minimum
0.21 – 0.40	Moderate	Weak
0.41 – 0.60	Moderate	Moderate
0.61 – 0.80	Good	Strong
0.81 – 1.00	Excellent	Almost perfect

Association between family index and psychological index on the whole sample

Fisher's exact test showed that there was a statistically significant association between family index (for the estimation of parental support) and psychological index (for the behavioural estimation of young patients during the first visit) on the whole sample under study (p=0.02). In terms of percentages, 20% indicates the share of children with a negative psychological index and negative family index, 6.67% indicates children with a positive psychological index and negative family index; on the other hand, 16.67% represents those children with a negative psychological index and positive family index and, finally, 56.66% represent those children with both a positive psychological and family index (Table 6). A positive family index, it should be remembered, means a value greater than or equal to 6, while below this value it is considered negative. Similarly, for the psychological index, a value greater than or equal to 15 is considered positive, while below this threshold it is considered negative.

Table 6: Association between Family support index and psychological index.

Characteristics of the patient's sample	Dental therapies complexity therapies <9	Dental therapies complexity therapies >=9	p-value
Family support index <6	6	2	
Family support index >=6	5	17	0.02

Below, Tables 7 & 8 summarise the associations between the different indices, which, however, showed non-significant statistical significance.

Table 7: Association between Family support index and dental therapied complexity index.

Characteristics of the patient's sample	Dental therapies complexity therapies <9	Dental therapies complexity therapies >=9	p-value
Psychological index <6	3	2	
Psychological index >=6	7	18	0.3

Table 8: Association between Psychological index and dental therapied complexity index

Characteristics of the patient's sample	Dental therapies complexity therapies <9	Dental therapies complexity therapies >=9	p-value
Psychological index <15	5	6	
Psychological index >=15	5	14	0.63

Discussion

The need to frame the most suitable therapeutic management modality for each individual pediatric dental patient from the very first contact with the operator is of fundamental importance. On the other hand, it is clear that being able to recognize and classify, in a valid manner, the character profiles of the children who come to the dentist's observation represents one of the major difficulties relating to treatment in this field. The pediatric dentist must be able to effectively manage the child's behaviour and, in order to achieve this, it is necessary to find out which factors reduce the child's cooperation and which, on the other hand, can improve the potentially negative behaviour during the first visit [Sharma et al., 2017]. In this regard, having an objective assessment method available, which is able to identify potentially collaborative subjects to treatment, would represent a breakthrough in the field of modern pediatric dentistry. The results of this study show that the use of the Pediatric Patient Collaboration in Dental Care objective evaluation form can be a valuable aid in the assessment of young patients, allowing the clinician to make a realistic prediction as to the degree of collaboration that can be achieved in relation to an estimate of the behaviour displayed, parental support and treatment difficulties.

The reliability of the test and the degree of concordance between the pathway proposed by the Pediatric Patient Collaboration in Dental Care objective evaluation form and the therapeutic pathway actually followed were measured by calculating Cohen's Kappa. Cohen's Kappa calculation was applied to the entire sample, to the 1st age group, to the 2nd age group and, in addition, to male and female subjects. With regard to the entire sample, the concordance between the procedure proposed by the POC card and the actual treatment procedure, as well as the reliability of the test, were moderate (k=0.467). Similarly, this result was found in the first age group (k=0.500) and in female subjects (k=0.600); on the other hand, in the second age group the concordance was good and the reliability was strong (k=0.714) and, finally, in male subjects the concordance was poor and the reliability minimal (k=0.200). Values ranging from the moderate to good/strong range were found in various validations and use of tests for dental purposes [13].

In contrast, low values are not considered acceptable in the scientific field. In fact, an excellent concordance (0.81-1.00) is not necessarily essential to consider a questionnaire, or an evaluation form, a valid diagnostic aid and aid [14].

The level of concordance can therefore be considered acceptable for the preliminary study, but a larger sample size can definitively validate the POC objective scorecard. Furthermore, in the present study, a higher concordance and reliability is noted for subjects belonging to band II, while a lower concordance and reliability is noted for male subjects. This means that the application of the test to band II (10-16 years) is to be considered more than acceptable and statistically significant, whereas it is to be improved for male subjects The results of the study show that there is a statistically significant association between the family index and the psychological index but not between dental therapies complexity index and both family support index (p = 0.30) and psychological index (p = 0.63), respectively. That is, an anxious attitude of the parent seems to have an effect on the child's behaviour during the dental visit [15]. Similarly, a proactive parental attitude seems to be decisive in making the child calmer or more cooperative during their stay at the operating chair [16]. This result is in agreement with several studies in the literature. In fact, the study conducted by Vasiliki et al. [17] in 2016 stated that the presence of parents and a positive parental attitude in the operating room leads the child to be more cooperative and calm during visits [17]. Similarly, Tickle et al. concluded that children whose parents display an anxious attitude are more likely to report anxiety [18]. Finally, the study of Gizani et al. [19] confirmed the usefulness of this study: behavioral management comprises a challenge for clinicians, who need to be familiar with a range of techniques to meet patients' needs at individual level and be flexible in their implementation. Appropriate technique should incorporate patients' personality and parents' active involvement, within the contents of the changes in modern societies [19].

Conclusion

The primary aim of the pediatric dentist must be to promote the prevention of dental pathologies in children and to guarantee dental treatment free from anxiety and pain, so as to minimize the need to apply sedation techniques in the pediatric dental patient. The introduction of an objective method of assessment that would be valid for the identification of subjects potentially cooperating with treatment, right from the first visit, would bring several advantages:

i The clinician would have an objective reference, the numerical score, which takes into account different aspects of the subject to be treated and is freed from the subjectivity of the practitioner himself.

ii The treatment process would begin with a dedicated and more targeted pathway, which would also bring advantages from an economic point of view for the health system.

iii The uncooperative child would be subjected to less stress during treatment.

iv There would be a higher degree of satisfaction for the family members and especially for the caregiver.

Thus, the results of this study show that the use of the Pediatric Patient Collaboration in Dental Care objective evaluation form can be a valuable aid in the assessment of young patients, allowing the clinician to make a realistic prediction as to the degree of cooperation achievable in relation to an estimate of the behaviour displayed, parental support and therapeutic difficulties. In this way, an objective, simple and effective method will be available in establishing the choice of course to be followed from the beginning of dental treatment.

On the other hand, the character complexity that defines each child has emerged and, therefore, the cooperation that can be obtained from the child must take into account other factors such as the presence of pain, the child's age and sex, and the development of cognitive skills. All these factors can represent predictors, together with the points assessed in the Paediatric Patient Collaboration in Dental Care objective evaluation form, that can help the clinician to best direct the child towards the most appropriate course of treatment. This study has brought these considerations to light, but a larger sample size may be the definitive element to be able to validate its 100% use. In fact, there will be a need for further investigations, on a larger sample of patients.

References

1. Rajput S, Puranik MP, Shanbhag N, Kumar A (2020) Factors affecting empathy among indian dentists. Indian J Dent Res 31(1): 14-21.

2. Price S, Mercer SW, MacPherson H (2006) Practitioner empathy, patient enablement and health outcomes: a prospective study of acupuncture patients. Patient Educ Couns 63(1-2): 239-245.

3. Levinson W, Gorawa Bhat R, Lamb J (2000) A study of patient cues and physician responses in primary care and surgical settings. J Am Med Assoc 284(8): 1021-1027.

4. Zani B, Selleri P, David D (1994) La comunicazione. Modelli teorici e contesti sociali. Carucci Editore.

5. Liddell A (1990) Personality characteristics versus medical and dental experiences of dentally anxious children. J Behav Med 13(2): 183-194.

6. Setty JV, Srinivasan I, Radhakrishna S, Melwani AM, Krishna M (2019) Use of an animated emoji scale as a novel tool for anxiety assessment in children. J Dent Anesth Pain Med 19(4): 227-233.

7. Crego A, Carrillo DM, Armfield JM, Romero M (2015) Dental fear and expected effectiveness of destructive coping as predictors of children's uncooperative intentions in dental settings. Int J Pediatric Dent 25(3): 191-198.

8. Freeman RE (2007) Fearful child attends: a psychoanalytic explanation of children's responses to dental treatment. Int J Paediatr Dent 17(6): 407-418.

9. Tickle M, Jones C, Buchannan K, Milsom KM, Blinkhorn AS, et al. (2009) A prospective study of dental anxiety in a cohort of children followed from 5 to 9 years of age. Int J Paediatr Dent 19(4): 225-232.

10. Peretz B, Nazarian Y, Bimstein E (2004) Dental anxiety in a students' paediatric Dental clinic: children, parents and students. Int J Paediatr Dent 14(3): 192-198.

11. Feigal RJ (2001) Guiding and managing the child dental patient: A fresh look at old pedagogy. J Dent Educ 65(12): 1369-1377.

12. Sharma A, Kumar D, Anand A, Mittal V, Singh A, et al. (2017) Factors predicting Behavior Management Problems during Initial Dental Examination in Children Aged 2 to 8 Years. Int J Clin Pediatr Dent 10(1): 5-9.

13. Rozenfeld E, Finestone AS, Moran U, Damri E, Kalichman (2017) Test-retest reliability of myofascial trigger point detection in hip and thigh areas. J Bodyw Mov Ther 21(4): 914-919.

14. Feisten AR, Cicchetti DV (1990) High agreement but low kappa: The problems of two paradoxes. J Clin Epidemiol 43(6): 543-549.

15. Mueller M, Schorle S, Vach K, Hartmann A, Zeeck A, et al. (2022) Relationship between Dental Experiences, Oral Hygiene Education and Self-Reported Oral Hygiene Behaviour. PLoS ONE 17(2): e0264306.

16. Vasiliki B, Konstantinos A, Vassilis K, Nikolaos K, van Loveren C (2016) The effect of parental presence on the child's perception and co-operation during dental treatment. Eur Arch Paediatr Dent 17(5): 381-386.

17. Tickle M, Jones C, Buchannan K, Milsom KM, Blinkhorn AS, et al. (2009) A prospective study of dental anxiety in a cohort of children followed from 5 to 9 years of age. Int J Paediatr Dent 19(4): 225-232.

18. Gizani S, Seremidi K, Katsouli K, Markouli A, Kloukos D (2022) Basic behavioral management techniques in pediatric dentistry: A systematic review and meta-analysis J Dent 126: 104303.

19. Bürklein S, Brodowski C, Fliegel E, Jöhren HP, Enkling N (2021) Recognizing and differentiating dental anxiety from dental phobia in adults: a systematic review based on the German guideline "Dental anxiety in adults". Quintessence Int 0(0): 360-373.