Does Protective Stabilization of Children During Dental Treatment Break Ethical Boundaries? A Narrative Literature Review

Geovanna de Castro Morais MACHADO[1], Ana Paula MUNDIM[2], Mauro Machado do PRADO[3], Cerise Castro CAMPOS[3], Luciane Rezende COSTA[4]

[1]Dentistry Graduate Program, Universidade Federal de Goias (UFG), Goiania-GO, Brazil. [2]Faculty of Dentistry, Instituto Tocantinense Presidente Antônio Carlos Porto (ITPAC), Porto Nacional-TO, Brazil. [3]Department of Oral Prevention and Rehabilitation, Faculty of Dentistry, Universidade Federal de Goias (UFG), Goiania-GO, Brazil. [4]Department of Oral Prevention and Rehabilitation, Faculty of Dentistry, Universidade Federal de Goias (UFG), Brazil

Abstract

Aim: Protective stabilization, a method for immobilizing or reducing the ability of a patient to freely move his or her body, raises ethical concerns that should be discussed. This narrative literature review aimed to discuss the bioethical aspects involved in the use of protective stabilization in normally developed children who exhibit behavior management problems in dental care. **Methods:** A critical review of full papers retrieved from PubMed, LILACS, SCIELO, BBO, supplemented by specialist books, the Brazilian Civil and Criminal Codes, the Brazilian Code of Dental Ethics, and institutional guidelines. **Results:** The literature indicates that the decision to use protective stabilization in normal children during dental treatment can be based on bioethical principlism, according to the principles of beneficence, non-maleficence, autonomy, and justice. The fears and limitations of a child must be respected and aversive physical impositions should be avoided. When a child does not cooperate with dental treatment, protective stabilization may be indicated with the written consent of parents and for specific procedures of short-duration, such as dental emergencies. Other options for managing the child's behavior in these cases are postponing care or indicating pharmacologic methods. The continuous use of protective stabilization is not justified in elective treatments. **Conclusion:** The use of protective stabilization in pediatric dentistry breaks ethical boundaries if the dentist is not trained in the application of the method, does not analyze the risks, benefits, and potential harm of the method, insists on its use for several appointments and for non-emergency procedures, does not respect the parents' opinion and the child's autonomy (even though in construction), and does not consider local law.

Key Words: Dental care for children, Physical restraint, Physical immobilizatio, Infant behaviour, Child behaviour, Behavior management, Bioethical issues

Abbreviations

PubMed: United States National Library of Medicine database', LILACS: Literatura Latino-Americana em Ciências da Saúde, SCIELO: Scientific Electronic Library Online, BBO: Biblioteca Brasileira de Odontologia, AAPD: American Academy of Pediatric Dentistry, UK: United Kingdom, UNESCO: United Nations Educational, Scientific and Cultural Organization

Introduction

In pediatric dentistry, as well as in other health areas, fear, anxiety, and behavior management problems can be observed when performing procedures in children, such as immunization, lumbar puncture, and dental care. Fear is an emotional response to a specific threatening stimulus [1]. Anxiety is the feeling that something terrible will happen and it is associated with feelings of loss of control [1]. The knowledge and experience of the dentist in dealing with an uncooperative or pre-cooperative child defines the problems of behavior management, which directly reflects on the outcome of dental treatment [1]. The prevalence of dental fear and anxiety in children and adolescents ranges from 5.7 to 19.5% and in relation to behavior management problems the range is from 8.0 to 10.5% [1]. The etiology of these emotional problems in dentistry is multifactorial [1,2], and a trained dentist should manage them through the use of communicative techniques such as tell–show–do and distraction [3].

Dentists who deal with children should be aware of their role in preventing avoidance behavior, by stimulating patients' adaptation to dental treatment through sequential visits [4]. However, in young children this conditioning effect might be negatively influenced by local anesthesia and/or dental procedures [5]. Then, sometimes children cry, scream, and struggle in an attempt to get off the dental chair. In such cases, there is a need to manage the child's behavior, often with more coercive techniques to enable quality of care such as the immobilization of the child, currently known as "protective stabilization". Protective stabilization (synonyms: physical restraint, physical contention) is the restriction of a patient's freedom to move independently, aiming to reduce the risk of injury during care and so improve the quality of dental treatment [3]. The restriction of the movements of the patient's body and limbs can be made with the aid of persons (active restraint) or of devices that involve the child's body (passive restraint) [6]. Protective stabilization requires the written informed consent of the parents or the legal guardians [3,6].

Over the last decade, the use of immobilization of mentally disabled patients has been restricted to emergency situations that must be resolved quickly so as not to cause health risks to the patient [7]. For children with normal development, the use of protective stabilization in pediatric dentistry has also been seen differently in recent years, because societies worldwide understand children's rights and emotions in differente ways [3,6]. So, in today's world, health professionals are challenged to provide more humanitarian health care for both children

Corresponding author: Prof. Luciane Rezende Costa, Faculdade de Odontologia, Avenida Universitária, esquina com 1ª. Avenida, Setor Universitário, Goiânia-GO, CEP 74605-220, Brazil; Tel: (62)3209-6047; Fax: (62) 3209-6325; e-mail: lsucasas@ufg.br

and parents by considering the risks and benefits of a given procedure to the patient [7], as well as the parents' opinion of that procedure.

One of the concerns related to protective stabilization refers to its ethical aspect based on the current understanding of the professional–patient relationship, but this point has not so far been discussed in the Brazilian literature. The aim of this narrative literature review was to discuss the bioethical principlism theory associated with performing protective stabilization in children with normal development who exhibit behavior management problems in dental care.

Material and Methods

A critical review of full papers was carried out to discuss the bioethical aspects involved in protective stabilization in normally developed children who exhibit behavior management problems in dental care. The literature search, restricted to 2004–2014, was carried out using the United States National Library of Medicine database (PubMed), "Literatura Latino-Americana em Ciências da Saúde" (LILACS), Scientific Electronic Library Online (SCIELO), and "Biblioteca Brasileira de Odontologia" (BBO), using the following keywords: pediatric dentistry, child behavior, behavior guidance, behavior management, physical restraint, physical intervention, physical immobilization, and bioethical issues. The terms were used alone and in a variety of combinations using the Boolean operators AND and OR. Papers were selected if they mentioned any ethical aspect of the protective stabilization technique.

Specialist books, the Brazilian Civil and Criminal Codes, the Brazilian Code of Dental Ethics, databases and guidelines from international institutions focused on dental treatment of children, such as the American Academy of Pediatric Dentistry (AAPD), and reference lists from selected papers were also sought, and important documents were selected even if they were dated earlier than 2004.

Results and Discussion

Bioethics can be understood as a field of knowledge that seeks interdisciplinary dialogue in the search for solutions to conflicts involving intervention or health research, at individual and collective levels [8]. The bioethical analytical model proposed by Tom Beauchamp and James Childress [9], based on the principles of beneficence, non-maleficence, autonomy, and justice, is a theoretical reference that can guide dentists in individualized clinical care [10], although it is criticized for not understanding cultural diversity and the difficulties when applied at a collective level [11]. Thus, this review presents and discusses the potential implications of each of these principles in the analysis of the ethical aspects related to protective stabilization. It is noteworthy that there should be no hierarchy of principles, that is, none of them should prevail over the other.

Beneficence

The principle of beneficence refers to the ethical obligation to do good, which seeks to maximize benefits and minimize damage or injury. In relation to this aspect, the stabilization of a child in order to perform a dental procedure could be justified if it is intended to protect the patient, the dental staff, and the parents, reducing the risk of injury during treatment [3,6]. Besides, in theory, it would also lead to quality of care in dental treatment [6]. In the view of health professionals working in psychiatry, one of the benefits realized by patients with cognitive disabilities when they are stabilized is the possibility of preventing physical trauma [12].

For children without disabilities, however, the benefit of protective stabilization is questioned. If communication approaches are ineffective in reducing the aversive behavior or if the procedure to be performed is likely to increase the aggressiveness of the patient, protective stabilization might be necessary [13]. Nevertheless, this technique should not be used as a means of discipline, convenience, or punishment, and cannot cause pain to the patient [6].

Protective stabilization should be performed with the child placed in as comfortable a position as possible, in conjunction with distraction techniques [6], and should also be associated with a comprehensive program of change in the patient's behavior, without physical or verbal aggression to the patient. Thus, dental treatment, besides focusing on oral health, should develop positive attitudes in children through educational and psychological contributions, promoting their mental health.

When a child is in pain and does not cooperate with the procedure, physical restraint can allow the performance of a dental procedure to relief pain. In such cases, the dentist can decide to conclude the planned treatment, even against the will of the patient, as long as the legal guardians give their informed consent after being fully informed by the professional about the risks and benefits of protective stabilization [14]. Instead of insisting on protective stabilization, the dentist can also prioritize sedation or general anesthesia in the management of children's behavior, or even choose to postpone care until the child has the cognitive and emotional ability to cooperate [3,6].

To maximize the "benefit" of protective stabilization, dentists and dental assistants need proper training to allow the use of the technique in the most beneficial way possible [3], for the wellbeing of patients and the performance of appropriate dental procedures. Dental staff must also understand the meaning that protective stabilization has for children and their families, and that this technique should be used cautiously as a final option because negative psychological consequences may occur to the patient [13,15].

Non-maleficence

The principle of non-maleficence calls to do no harm and forbids the deliberate infliction of damage. Although the effect that protective stabilization produces in each child is still not clear, this technique can be considered an aversive event for children and their families as well as for professionals using it. A survey showed that the perception of adolescents and adults who were immobilized to receive medical procedures is associated with four major themes:

negative psychological impact, re-traumatization, unethical practice, and hopelessness [15] *(Table 1)*.

Table 1. Emerging themes in a survey on the perception of adolescents and adults who were immobilized for medical procedures [15].

Theme	Comments
Negative psychological impact	Even if patients trust the nurse and are aware of affection and respect from the professional while they are immobilized, the general feeling is negative.
	There are feelings of anger, humiliation, fear, demoralization, dehumanization, degradation, anguish, helplessness, shame, and violation of integrity.
Re-traumatization	The experience related to restraint brings back memories of previous violent attacks such as maltreatment in childhood.
Unethical practice	Violation of human dignity, restraint as punishment.
Hopelessness	Exhaustion, accommodation to the situation because of the feeling of lack of help.

Protective stabilization can lead to physical or psychological harm, and to the loss of dignity of the patient. If performed improperly, it can impair breathing, especially in patients with respiratory impairments (e.g. asthma) or patients who have used medications that can cause respiratory depression (e.g. sedatives) [3]. Compression of the limbs during protective stabilization can cause impairment of circulatory function; the use of devices for performing stabilization can increase body temperature, thus causing anything from slight discomfort to hyperthermia [3].

Patients with psychiatric problems react more negatively after being physically restrained and report the experience as painful and traumatic. They can also develop feelings of panic, fear, powerlessness, anger, frustration, and injustice, which promote new episodes of aggression and resistance [16]. Furthermore, restraining the aggressive patient can also be a harrowing experience for staff, resulting in great anxiety [16].

The dental literature has also shown that protective stabilization may present psychological risks to children and their caregivers [17,18]. One study evaluated the stress in Brazilian children aged 6–12 years old, by comparing those who did not cooperate and required protective stabilization for dental care with those who cooperated and did not receive stabilization. Children who were stabilized showed more indicators of stress and emotional and behavioral difficulties than those who cooperated and were not immobilized [17]. The negative impact of child restraint was also observed in mothers of schoolchildren who were stabilized for dental care, and they showed more fear and stress behaviors than the mothers who accompanied children who were not restrained [17].

The excessive application of aversive techniques to manage behavior problems can unnecessarily expose children to a much greater period of negative stimulation, increasing their perception of pain and the frequency of episodes of non-cooperation with dental treatment [18]. This can happen with the repetitive adoption of the protective stabilization technique, which is not always efficient in achieving the gradual cooperation of children in dental treatment.

Moreover, one of the conclusions of a recent behavior symposium promoted by the American Academy of Pediatric Dentistry was that “stabilization should only be considered when deferring care due to the lack of cooperation would lead to pain and/or a poor outcome for the patient. Dentists' convenience and the ability to provide more treatment in one visit were deemed unacceptable uses of medical immobilization.” [19]. This symposium also highlighted the use of protective stabilization as a possible risk for sensitization to future medical treatment.

Autonomy

The principle of autonomy assumes that persons are free to make their own choices, if properly informed. Children have their autonomy under construction, as they are vulnerable concerning their personal development and depend on the decision taken by their legal representative. The third article of the Brazilian Civil Code states that those under 16 are considered absolutely incapable of acts of civil life, that is, their power of self-determination and power to express their free will is not recognized due to age. Thus, they depend on other persons to represent them until age 16, and to assist them after this age, until age 18, at which time they become fully capable for all legal purposes. Since pediatric dentists deal with children and adolescents under 16 years old, it is necessary to have the consent of their legal guardians for any procedure to be performed, including protective stabilization [20].

Respect for patients’ autonomy means informing about the purpose, benefits, risks, and alternatives of treatment, in a way that can be understood by the patient and that allows the patient to actively participate in the decision-making process. It is recommended to obtain parental consent before the use of protective stabilization in children [3,6]: the dentist should provide parents with proper clarification on protective stabilization. Conversely, when consent is not requested, the professional is negligent, by violating the rights of guardians to actively participate in the treatment of their children; and the dentist can be criminally charged with assault, and also sued due to civil damages.

However, whenever possible, it is important to listen to children and respect their wishes, as long as this does not impact negatively on their health or put their life in danger. In other words, one must respect the minor patient's dignity, considering age and ability to understand the proposed treatment, inferring the patient’s will, taking into account each

situation as well as the condition of heteronomy (the wishes of the person who is the child's legal guardian). The limit of this autonomy obviously depends on the child's level of development.

In the United Kingdom (UK), since 2008, pediatric dentists have been aware that protective stabilization can cause fear of dental procedures, so the urgency of the procedure should be considered as well as the benefits and risks when recommending this technique [14]. There are different regulations related to consent and to child care in the UK. However, it is suggested that professionals must know that protective stabilization should be properly clarified and understood by patients and parents/guardians during the consent process. Physical restraint should be used for a short period, should not cause psychological harm to the patient, and should never be a convenience for the professional. Additionally, no form of physical violence must be employed [14].

According to Article 11 of the Brazilian Code of Dental Ethics [21], dentists cannot take physical, emotional, financial, or political advantage in situations arising from the doctor–patient relationship. Article 136 of the Brazilian Criminal Code states that "to expose to danger to life or health of the person under one's authority, custody or supervision, for education, treatment or necessary care, if submitting to overwork or inadequate work, or if there is abuse of correctional or disciplinary measures" is subject to penalty [22]. Thus, given the vulnerability of the pediatric patient, professionals must build a good relationship with the child and guardians, ensuring dignity and respecting the rights of each person [11].

Cultural context and values permeate the acceptance of protective stabilization by guardians. In the last decade, studies have shown that Brazilian [23], American [24], Spanish [25], Kuwaiti [26], and Indian [27] parents have reported concerns regarding this technique. In Brazil, for example, the use of passive protective stabilization for dental treatment of healthy children was somewhat acceptable for 35.0% and was acceptable for 27.5% of the mothers interviewed. Active stabilization was acceptable to 52.5% and totally acceptable to 27.5 % of the mothers [23]. Similarly, American parents rejected passive stabilization more than the active technique [24].

The acceptance of protective stabilization and pharmacologic techniques is affected by Spanish parents' socioeconomic status [25]. Most of 118 Kuwaiti parents, on the other hand, reject protective stabilization (80.5%), but reject moderate sedation (95.8%) and general anesthesia (94.1%) even more; those parents are afraid that protective stabilization makes the child more fearful [26]. Parents of children with low socioeconomic status in India are more likely to accept different techniques of behavior management, including more aggressive ones such as physical restraint [27].

Justice

The principle of justice is related to the ethical obligation to give each person his due, to treat everyone according to what is morally right and proper. Justice is, from the bioethical viewpoint, directly linked to the notion of fairness, in terms of equity, as a more complex proposition and not specifically or exclusively based on the concept of distributive justice [28].

The principle of justice can be fully implemented in clinical care. It is an important guide to conduct in the context of the doctor–patient relationship, in making decisions in a reciprocal, interactive, and fair way. Specifically, and focusing on the discussion in this article, dentists should be attentive to the different conditions and needs of their patients when applying protective stabilization for dental care. One should carefully consider the degree of discernment, the behavior, and the cooperation of a child, as well as the real indication of the measure in comparison with other practices, the potential benefits, the possible risks and, crucially, the specific condition of the patient's vulnerability. It is important to always remember that difference does not necessarily mean inequality.

Consolidated summary: principlism and protective stabilization in pediatric dentistry

The decision-making process concerning the use of behavior management techniques in pediatric dentistry cannot ignore bioethical analysis, considering the range of possible answers and arguments. Besides the use of individual techniques, the adequacy of children's behavior during dental care is grounded in a good relationship between child, family, and dentist, which helps build trust and relieves fear and anxiety in the dental environment [3].

The dentist aiming to use protective stabilization must have the scientific knowledge and training to perform the technique, and must understand the ethical and legal aspects of this practice. Ethical thinking supposes that professionals will consider the treatment options and choose the best therapeutic approach, sharing the decision with patients and legal guardians.

According to the literature reviewed, protective stabilization is a technique that can be useful in specific pediatric dentistry procedures [3,6], but which is permeated with risks to the patient, family, and dental staff if not properly indicated and performed [6,13–15,17,18]. Thus, the decision-making process regarding the use of protective stabilization should be shared between family and dentist, for the well-being of the child, with attention to the values involved and the viable alternative procedures.

Considering the bioethics agenda, in which situations can a child be restrained for dental care? Certainly, the urgency of the procedure, the occurrence of pain and other disabling symptoms could be a guide to recommending restraint of an uncooperative child. One also needs to think of non-maleficence, always acting in the best interest of the patient and respecting patient's right to refuse [14]. However, it is understood that when a child does not want to cooperate with dental treatment there is a conflict of interests involved. A preschool child may not have the cognitive development to determine a value for the situation. It is then up to the parents or legal guardians to answer for their children.

Furthermore, which importance does the family assign to oral conditions versus child suffering in the dentist's chair? Parents usually expect pediatric dentists to be able to manage

the behavior of their children simply because they are dentists who deal with them. However, despite the strong disapproval of aversive techniques to manage behavior, many parents show likely to accept it if its use is really necessary. Hence, is important the patient-family-professional relationship, based on trust and clear and effective communication.

Considering the professional standpoint, what value does the dentist attributes to the completion of the procedure, the use of pharmacological resources or the postponement of the appointment? When dealing with uncooperative children, dentists tend to use protective stabilization for completion of the procedure. This strategy often enables the treatment, but does not eliminate the discomfort, the protest, and the suffering of the patient [29]. Pediatric dentists worldwide indicate pharmacologic techniques to manage children's behavior, to a greater or lesser extent, and there is a growing interest in the subject [30]. For graduate students, the acceptability of general anesthesia for patients who do not cooperate increases significantly over time, becoming a good choice for dental care [31]. Dentists must also question whether the proposed technique is really the best option for a child's health. It is also necessary to consider what could actually happen to a child if the planned treatment was not performed at that time [14]. In many cases, dental procedures can be safely postponed, without causing further harm to the patient.

Contrary to common belief, it is clear that protective stabilization is not without risks. If chronic immobilization in intensive care units and in residential units for the elderly and the mentally ill can risk the health of these patients [15], it is fair to accept that in children under outpatient care it might have the same effect. Reports state that this technique can generate adverse events in patients with mental health problems, even when performed correctly [13]. There is, however, insufficient evidence on the safety and efficacy of this strategy in pediatric dentistry. The AAPD warns that physical restraint can be psychologically harmful and can result in the development of dental phobia [3]. Still, protective stabilization is used in pediatric dentistry and is questioned critically by authors who do not understand the reasons for discussing a procedure that can be so detrimental [32].

Although medical professionals view physical restraint as a final option, it can be a "necessary evil" for managing behavior and reducing harm to patients with special needs [7]. In parallel with the medical field, it is proclaimed that dentists also have a moral imperative to promote the well-being of the patient through responsible practice. The frequency of application of protective stabilization can be an important indicator of quality of care: its frequent use can be related to abusive attitudes by professionals, who should be charged for misusing the technique [13]. There must be a commitment to indicate a minimum level of protective stabilization so that the service can be considered appropriate and beneficial to the patient, and adhering to ethical principles.

Health practices should prioritize scientific development, incorporating the techniques needed, without disparaging the human person or their culture. Human dignity, human rights, and the welfare of individuals should be placed above all other interests. Persons unable to exercise their autonomy must rely on professionalism in decision making and everything must be done to use the best scientific knowledge and the best available methodologies for treatment, taking into consideration the value system of those involved, under the aegis of bioethics. These are recommendations of the Universal Declaration on Bioethics and Human Rights of the United Nations Educational, Scientific and Cultural Organization (UNESCO) that each professional should follow to promote the quality of life of patients undergoing aversive techniques [33].

Finally, children who do not have full autonomy, due to their not being of age or having reached adulthood, are subject to heteronomy, which is the power given to others to make decisions regarding their lives [9]. When a child refuses to cooperate with dental treatment, the principle of beneficence should guide the decision on whether or not to use aversive techniques to manage the child's behavior. In this case, dentists and guardians should make the decision while trying to protect the child and should also evaluate the potential systemic risks that may occur to the patient, in addition to considering the dental benefit [11].

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