ORIGINAL REPORT: QUALITATIVE RESEARCH

Physical Constraint in Pediatric Dentistry: The Lived Experience of Parents

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Abstract: *Background:* The use of physical constraint in pediatric dentistry is highly controversial. Papoose boards in particular, which envelop and immobilize children during treatment procedures, have been described as barbaric devices even though their goal is to protect the patient. In this debate, the voice of parents is important but still missing in the scientific literature.

Aim: To understand how parents or caregivers experienced physical constraint and the use of the papoose board on their children during regular dental treatment.

Design: We conducted qualitative research rooted in interpretive phenomenology. Accordingly, we performed in-depth individual interviews with a purposive sample of 7 parents or caregivers. The interviews took place in Montréal, Canada, after the children had been treated with a papoose board for nonemergency dental treatments. The discussions were audio recorded, transcribed, and thematically analyzed. **Results:** Two perspectives emerged among participants. Some explained that the papoose board calmed their children, helped the dentist to complete the procedures, and made their experience less stressful. For others, the papoose board was a horrible and traumatizing experience, leading to feelings of guilt toward their children. They expressed anger toward the dentists for not allowing them enough time to decide and for imposing use of the device.

Conclusion: Our study raises serious ethical concerns about this practice. We believe that using a papoose board should remain an extraordinary measure and, more generally, that dental professionals should reflect on the place of children and their families in clinical encounters.

Knowledge Transfer Statement: The findings of this study should encourage policy makers, dental professionals and ethicists to consider the following points: 1) the traumatizing experiences described by parents raise serious ethical concerns about the use of papoose boards; 2) the dental profession should reflect on the place of children and their families in the clinical encounter and grapple with the importance of consent and how to ensure consent in encounters involving children and their parents.

Keywords: physical restraint, dental care for children, patient-centered care, qualitative research, phenomenological study, shared decision-making

Introduction

Physical restraint has been used for centuries in medical care to stabilize patients and allow practitioners to perform treatments, especially surgical procedures. With the development of sedation and anesthesia, though, this practice has declined but not disappeared: restraint is still practiced in pediatric care (Svendsen et al. 2017), notably in intensive care units when children's movements may lead to lifethreatening complications (Demir 2007) or in psychiatric hospitals to protect patients from violence against

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Article reuse guidelines: sagepub.com/journals-permissions © International Association for Dental Research and American Association for Dental, Oral, and Craniofacial Research 2021 themselves and others (Donovan et al. 2003). It is also used in nonemergency situations, when young patients resist or oppose medical procedures that they perceive as frightening or painful, such as venipuncture (Manne et al. 1990) and dental care (Peretz and Gluck 2002).

In pediatric dentistry, the use of papoose boards-a device that comprises a board and canvas flaps that fold over and immobilize a child's body-is not uncommon (Adair et al. 2004). Papoose boards have been prohibited in several countries, such as the United Kingdom (Nunn et al. 2008), but dentists still use them in North America and in some European countries, including Norway (Adair et al. 2004; Aarvik et al. 2021). The American Academy of Pediatric Dentistry (AAPD; 2017) indicates that such "protective stabilization should be used only when less restrictive interventions are not effective." Physical restraints, indeed, may physically injure children and even compromise their respiratory functions; they may also harm children psychologically and lead to dental phobia (AAPD 2017). Some consider that physical restraints violate children's dignity and rights (McGrath et al. 2002).

This issue is thus highly controversial in dentistry: professionals have described the use of papoose boards as a "barbaric practice" that we should ban (Weaver 2010); the general media has also fed the debate with testimonies of parents claiming that "their kids were tortured and traumatized during a trip to the dentist" (CBS News 2016). Studies exploring parental preference of "behavior management techniques" showed that parents rarely prefer papoose boards over other approaches. For instance, after watching videos demonstrating various approaches, parents in Greece (Boka et al. 2014) and Spain (Luis de León et al. 2010) rated the tell-show-do technique favorably but expressed reluctance toward passive restraints. More recently, Ilha et al. (2020) showed that Brazilian parents, after watching a video on the subject, perceived protective stabilization as

a disturbing but acceptable option, but they rejected the use of passive restraints.

These studies, however, remain inconclusive: they do not capture parents' perspectives well, and they provide superficial knowledge about their lived experiences and concerns. Parents' voice is crucial in the current debate on the use of papoose boards in pediatric dental care and should be heard carefully by professionals, ethicists, and policy makers. We therefore decided to conduct research with the objective to understand how parents experienced and perceived the use of a papoose board on their children during dental treatment.

Methods

Research Design

We adopted an interpretive phenomenological approach, a methodology rooted in Heidegger's work (Reiners 2012) that aims at "gaining a deeper understanding of the nature or meaning of our everyday experiences" (Van Manen 1990). Phenomenological research produces rich knowledge through the interaction between a researcher and the study participants and via a process of continuous questioning and reexamination of the researcher's interpretations (Smith 2007). These discussions are generally based on in-depth interviews with small samples of participants, between 3 and 10 as recommended by Dukes (1984) and Smith et al. (2009).

Sampling Strategy

We conducted this study at the Dentistry Division of the Montréal Children's Hospital. The division has 27 dentists, including 4 pediatric dentists who provide comprehensive dental care to thousands of children referred from general and specialized clinics of the Greater Montréal area, a metropolis of approximately 4 million inhabitants (Statistics Canada 2017). These professionals use "basic behavioral guidance" techniques (AAPD 2017), such as tell-show-do, conscious sedation (oral sedation with benzodiazepines and nitrous oxide inhalation), and general anesthesia, but also a papoose board when they consider it necessary.

We recruited participants at the dental clinic's waiting room of the Montréal Children's Hospital by presenting them with a brief description of the study. We purposefully (Patton 1990; Englander 2012) selected parents or caregivers of children who had just been treated with a papoose board in the dental clinic for routine nonemergency procedures. Our strategy was to meet information-rich people able to share their experience with us. All parents contacted accepted to participate. We stopped recruiting when the amount of data generated from the interviews were sufficient to attain our research objective.

Data Collection

Individual semistructured interviews were conducted by the primary investigator, who was particularly interested by the subject not only as a pediatric dentist but also as a mother. Her 2 identities were interconnected and allowed her to understand the perspective of the participants and the challenges experienced by dentists when providing care to young children. The interviews were held at different places according to the participants' preferences, such as their house, their office, or a coffee shop. All these places were quiet and allowed confidential discussions, which lasted approximately 45 to 60 min and were audio recorded to be transcribed verbatim. Before the interview started, the participants were invited to read and sign a consent form approved by the Research Ethics Board of the McGill University Health Centre. The investigator then used an interview guide that she had previously pilot tested; it included several open questions, but she was free to adapt them to each participant (Englander 2012). She was also flexible in conducting the interviews, letting the participants' interests or concerns (Smith 2007) orient the discussion (Giorgi 2009). The investigator respected each participant's pace during the interviews and was sensitive to

their emotions. Whenever participants expressed some distress related to their experiences at the clinic, she offered to pause or stop the interview and offered support and help.

Data Analysis

Data analysis in interpretive phenomenology does not have any prescriptive guidelines. As explained by Van Manen (1990), to apprehend the real essence of any phenomenon or to gain better understanding of one's lived experience, it is important to reflect repeatedly on the emerging themes. The primary investigator thus conducted a thematic analysis (Smith 2007), according to which she read the generated data numerous times, identified the emerging themes, and connected them to make sense of them. This was a long recursive process that involved a constant moving back and forth within the entire data set. In this process, she wrote notes summarizing the findings and underlined similarities and differences among participant experiences. She regularly shared her interpretations with the other research team members and produced the findings described in the next section. It is also important to mention that the primary investigator wrote field notes right after each interview and shared them with other members of the team, 2 experienced researchers in qualitative research and access to dental care.

Results

Description of the Participants

Six parents—4 mothers, 2 fathers—and a grandmother of children treated with the papoose board participated in this study. These 7 participants were diverse in terms of socioeconomic status, culture, and geographic origin. Most of the procedures that the children underwent were covered by public or private dental coverage (Tables 1 and 2).

Participants' Experiences Related to the Use of the Papoose Board

Two main and contrasting perspectives emerged: some participants described

Table 1.

Characteristics of the Participants.

	No.
Age, y	
30 to 39	2
40 to 49	4
50 to 59	1
Relation with the child consulting	
Mother	4
Father	2
Grandmother	1
First language	
French	3
English	2
Other	2
Immigration status	
Immigrant	3
Nonimmigrant	4
Education	
Preuniversity diploma	2
University degree	5
Annual household income, Can \$	
<30,000	4
30,000 to 59,999	0
≥60,000	2
Did not prefer to answer	1
Private dental insurance	
Yes	5
No	2

the papoose board as a "horrible and awful" experience, whereas others expressed satisfaction and even relief (Figure).

In the first group, parents explained that this "frightening" experience was traumatic for them but also for their child. For instance, a mother remembered being shocked and helpless to see her 3-y-old daughter strapped on the dental chair; she recalled with emotion the pressure marks created by the straps around her daughter's wrists as she struggled to get loose. Discussing this experience was still painful for her during the interview: it made her emotional to the point where she needed to pause the conversation.

Table 2.

Characteristics of the Children Experiencing the Papoose Board.

	No.
Age, y	
1 to 5	4
6 to 10	1
11 to 15	2
Gender	
Girl	5
Воу	2
Disability	
No	4
Yes (autism, quadriplegia)	3
Dental procedures involving the use of the papoose board	
Examination/preventive procedures	3
Restorative procedures	3
Dental extraction	1

It's horrible; like, my daughter screams the whole hour we were there, so it's traumatic for her, it's traumatic for me, and it's traumatic for everyone who hears her. (participant 4)

One argument put forth by parents is that this technique "hurts the kids" and may not even be necessary. According to a participant, the treatment performed on his child—caries obturation on temporary teeth—was not urgent and should have been simply postponed.

For the parent, use of [the] papoose makes them feel guilty because it hurts the kids and it's a bad experience for both the parent and the kid. It's hard for the kids . . . as they trusted you. (participant 1)

The consequences were heavy for some parents, who felt guilt and described this experience as a "betrayal of trust" in their relationship with their child: the use of the papoose board was contrary to their values regarding child education. I would say I felt a betrayal of trust towards my kid because I never ever forced her to do anything and it's really against everything I believe. I really think we should avoid using it because, when you are using this on the kid, it upsets or frightens the kid. You are betraying the kid's trust, that's my feeling. I feel that by constraining someone that is having a hard time, you are betraying the trust. (participant 6)

Another group of participants, however, expressed a very different opinion and described the papoose board as the "right tool to get the job done"; according to them, it calmed their child, helped the dentist to complete the procedures, and made their overall experience less stressful.

I didn't see [the papoose] as a negative thing. I don't know if people see it like a bad thing but I certainly didn't because I had a feeling, you know, though she wasn't a baby anymore, but as a baby likes to be swaddled, you know, it calms them down, so it's the same principle with the papoose. I was happy with it October 2022

because it made the dental treatment lot easier for us. (participant 2)

Some participants appreciated the benefits of the papoose board so much that they wished to use a similar device in other medical settings, such as vaccinations and blood tests. One participant, a single father of a child with quadriplegia, considered that a papoose board would even be useful at home and help him feed his daughter or brush her teeth.

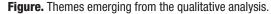
I thought it was brilliant! It's what they need to pull her arms down coming at their faces. I wasn't opposed to it from the beginning because I didn't see my daughter react negatively to being restrained. For me, it makes sense if it allows the dentist to be more efficient, have less trouble with the cleaning, do more quality cleaning of the mouth. [It's] safer, as well, as I'm sure it's not safe when sharper objects are in the child's mouth and the child's fighting to get out of the dental chair. So, I'm all for it as long as the child isn't having a negative experience. In my case, it always has been positive. (participant 3)

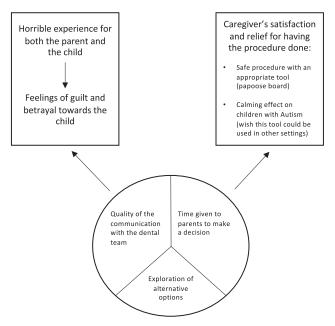
Participants also described the papoose board in terms of safety. The grandmother of a 2-y-old child considered the papoose a "safety mechanism" restricting the sudden bodily movements of her grandson and protecting him from getting injured from the high-speed rotating instruments.

You know what? I felt good, I felt good about it. When I saw [my grandson] strapped in it, to me it looked safe. Safe in terms of "he's not gonna move in there," it's impossible, he's wrapped up really tight in those Velcro, those are not moving. So, to me he has no chance of getting hurt by those drilling instruments during the treatment. (participant 7)

Having already experienced dental treatment without a papoose board, the same participant considered this device more effective and safer than the alternative of holding the child and physically restricting his movements.

[In a previous experience], I was lying on the chair and [my grandson] was on





me. I had my arms wrapped around him and they had to look at his tooth, make him open his mouth. You don't wanna do that, so I was glad that they had that wrapper [papoose] around him, because you just can't . . . I can't, you know, you can hold them too much [tight] or too little [loose]. You can hurt him. (participant 7)

One participant expressed mitigated feelings: she initially considered the papoose board something horrible, violent, aggressive, and hard to accept. She subsequently modified her assessment, perceiving it as being preferable to general anesthesia and a temporary option for a few years until it is possible to treat her daughter without it.

Parents' Role in the Decision-Making Process

Participants' experiences with the papoose board strongly depended on the relationship with the dentist and specifically on 3 interrelated elements: communicating well with the dentist, exploring options and possible alternatives, and having enough time to reflect and decide.

The participants who reported a negative experience were highly critical

of their interaction with the dentist, explaining that they were barely involved in the decision.

They didn't even ask for the consent. They just did it. They just tied her up and that was the end of it. (participant 4)

They deplored the lack of information provided by the dentist concerning the papoose board and alternative options. They would have liked to be informed about the possibility of less restrictive methods, and they wished that they could have had a discussion with the dentist before continuing the treatment. In essence, the participants considered that they lacked the necessary knowledge to make an informed decision, and they blamed the clinician for not including them more actively in the decision-making.

Actually, no one explained it to me. . . . I don't [didn't] know at that time, what it will be. They asked me to sign some papers that I agree for this treatment. So I signed because that's a doctor, it's a hospital: how can I say no in the end? . . . The parents should be given some options, if there are some options, and what it will be and how it works. (participant 1) Furthermore, participants felt rushed by the dentist and wished that they had been given time to decide or prepare their children. One parent, for instance, was unable to recall that she was ever asked to give her oral consent, and she later had to sign a form without a clear understanding of what it entailed. After the appointment, she realized that she disagreed with the decision.

I was kind of shocked, and really shocked! The thing is that they had already started working on my daughter's tooth and then, in the middle of it, she started to be uncooperative and they said: "we have to now finish it, otherwise it's a problem." Everything, you know, was going so fast and they said: "we have to put her in this bag [papoose]." And I guess they did ask me if this is ok and I said: "yes." But I don't remember. But all of a sudden, my girl was tied down and they were finishing their work, and straight after that they gave me a paper and I had to sign it. And I was like saying: "what am I signing?" And they said: "consent to have this." And I just signed it. But afterwards, when I was thinking about everything that happened in the clinic, it bothered me that I didn't have the time to go over it and didn't even know what it was I was saying "yes" to. (participant 6)

The participants who reported a positive experience with the papoose board had a contrasting perspective on the decision-making process: they accepted the papoose because it was introduced to them as an option; they did not feel that the decision was forced on them when treating their children had become challenging for the dentist.

[The papoose] was introduced as an option if I want it. So, nobody ever said to me: "we need to use this." It was always like, "we [the dentists] have this if you wanna try it, we can try but it's completely up to you" so it was my decision. But nobody ever said that it was needed. (participant 2)

These participants appreciated that the dentist took time to explain the procedure and invited them to ask questions about the other options, such as general anesthesia. They felt involved in the decision-making process and thought that the clinician respected their authority in deciding about the procedures.

So, I asked lots of questions and I felt that [the dentist] was open. I was very happy. . . . So, I was like, okay, I'm feeling comfortable and [the dentist] is open to listen to my story and my baby's story. So, I was quite confident with her. So, we talked together about the options without general anesthesia, all the options we had, and we made the plan of intervention of 4 meetings to make something in my child mouth. (participant 5)

They also considered that the dentists gave them enough time to decide and prepare themselves as well as their children. As an example, a participant explained that the papoose board was not used right away but during the next appointment; this gave her enough time to prepare herself and her daughter.

When [the dentists] started to have difficulty in treating my daughter, I was introduced to the papoose. It is on that appointment they told us it's a type of sleeping bag that would help keep her more, like, restrained. That's when we saw it for the first time. We said: "we don't have an issue and we would like to give it a try." Then we were made [given it] next appointment. (participant 5)

Discussion

Our article provides a unique and original perspective in the current debate on physical restraints in pediatric dentistry. Contrasting with the voices calling for its ban (Weaver 2010), some participants considered the papoose board an acceptable procedure, explaining that their children accepted it well. Two participants even described a calming effect of this technique, which is supported by research showing that some children, especially those with autism spectrum disorder, may be reassured by body pressure (Klein and Nowak 1998; Chandrashekhar and Bommangoudar 2018). These participants also expressed relief to see their children receiving dental care in a secure way.

Other parents had a distinctly different perspective: the experience was horrible and traumatizing for them and their children. They demonstrated feelings of guilt toward their child and anger against the dentist for not involving them in the decision-making process, instead imposing this device. Retrospectively, they wished that the treatment had been delayed or other approaches explored.

It is important to mention that our study was conducted in a pediatric hospital in Montréal, Canada, and our findings cannot be generalized to other contexts of practice or countries, in particular where child contention is prohibited. This said, we invite readers to appreciate which aspects of our findings may apply and be transferred to their own contexts. Our methodological approach allowed us to produce rich and complex data that could not have been obtained through quantitative means. We also need to mention that our sample size is appropriate for our methodological approach-interpretive phenomenology-and responds to the standards in our field (Sim et al. 2018).

Given our findings, we invite policy makers, dental professionals, and ethicists to consider the following points: 1) the traumatizing experiences described by parents raise serious ethical concerns about this practice, even though some participants expressed a positive appreciation of the papoose board; 2) the dental profession should reflect on the place of children and their families in the clinical encounter and grapple with the importance of consent and how to ensure it in encounters involving children and their parents.

With respect to the first point, we must underline the ethical issues associated with the use of the papoose board. This device and physical restraint in general should remain an extraordinary measure, decided after thorough involvement of the parents and, as much as possible, the child. The child should be placed at the center of the decision-making process and offered various options, as currently recommended by the AAPD (2017). One of these is conscious sedation, which is not publicly covered in the province of Québec. Policy makers thus have an important role to play in expanding the range of therapeutic options available. We therefore shared our findings, including the most disturbing ones, with the members of the Dentistry Division of the Montréal Children's Hospital, where we conducted this study. We emphasized the potential negative consequences of using papoose boards and the importance of protecting families and providing them with support.

Regarding parents' appreciation of the papoose board, it may in some cases reflect their relief at obtaining dental treatment for their children: even though dental services are covered for children until age 10 y, access to pediatric services remains a challenge in Canada (Mostajer Haqiqi et al. 2016); in this context, parents may perceive this practice an acceptable and even desirable solution. As the French sociologist Bourdieu (1984) explained, "a forced choice, produced by conditions of existence which rule out all alternatives," is arguably no choice at all.

With respect to the second point, we believe that it is time for the dental profession to adopt and promote personand family-centered approaches. For this purpose, several frameworks have been proposed in the dental literature in the last decade (Apelian et al. 2014; Mills et al. 2015; Scambler et al. 2015; Apelian et al. 2017; Lee et al. 2018; Bedos et al. 2020). These frameworks could guide dental professionals to achieve shared decision-making and conduct interventions that are mindful of patients' fears, pace, and expectations. We also believe that it is essential to reconsider the place of the child in the clinical encounter. Traditionally, dentists have considered children and adolescents as passive actors who could be conditioned to comply. For instance, the concept of "behavior guidance" described in North American textbooks and in the AAPD guidelines on protective stabilization

(Canadian Pediatric Society 2004), reflects this approach and conveys a paternalistic model of communication (Makansi et al. 2018). The dental profession should examine alternative models that view children as social actors able and entitled to be part of their health. In other words, dentists should actively involve children in decisions with respect to the choice of treatments and technical procedures (Canadian Pediatric Society 2004).

We conclude by urging researchers to involve children in oral health research and conduct child-centered studies, as recommended during the 25th Congress of the International Association of Paediatric Dentistry in 2015 (Marshman 2015; Marshman et al. 2015). Their voice is missing in our study and should be heard in this debate on physical restraint and in pediatric dental care in general.

Author Contributions

P. Malik, contributed to conception, design, data acquisition, analysis, and interpretation, drafted the manuscript; B. Ferraz dos Santos, contributed to design, data acquisition, analysis, and interpretation, critically revised the manuscript; F. Girard, R. Hovey, contributed to design, data analysis, and interpretation, critically revised the manuscript; C. Bedos, contributed to conception, design, data analysis, and interpretation, drafted the manuscript. All authors gave final approval and agree to be accountable for all aspects of the work.

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