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Detection and Reporting of Child Abuse and Neglect: A Survey amongst Pediatric Dental Care Providers in the United States

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Detection and Reporting of Child Abuse and Neglect: A Survey amongst Pediatric Dental Care Providers in the United States

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Dentistry at Virginia Commonwealth University.

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Table of Contents

List of Tables

Abstract

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Purpose: The purpose of this study is to survey pediatric dental care providers in the United States to evaluate their knowledge in the detection and reporting of child abuse and neglect (CAN).

Methods: This study has been modeled as a cross sectional- survey based research study. Email invitations were sent to pediatric dentists, orthodontists, and others who work in pediatric dental practices in the United States through email lists of the American Association of Pediatric Dentists (AAPD) and the American Association of Orthodontists (AAO). The survey completion page included sample text and the public survey link for providers to use to send an email invite to dental hygienists. The survey completion page allowed the opportunity for the survey respondents to "copy and paste" the survey letter of invitation to their respective dental hygienists. Responses were entered through REDCap hosted on the Virginia Commonwealth University servers.

Results: A total of 440 respondents participated in the survey. The final sample size was 388 after removing those who indicated they do not treat children. There were 236 respondents (86%) who indicated they had reported a suspected incident of CAN. Most correctly identified that dentists in their state are required by law to report both child abuse and neglect (n=309, 80%). However, most were unsure of the consequences of not reporting suspected cases of CAN

(n=281, 72%). More than one third of respondents were unsure if dentists are granted immunity from liability for reporting suspected CAN in good faith (n=141, 36%), and most improperly defined failure to seek treatment for visually rampant untreated dental caries as neglect (n=276, 71%), despite the AAPD definition.

Conclusions: Pediatric dentists, orthodontists, and others in the United States feel adequately trained for recognizing abuse and neglect. However, additional training resources and opportunities for dental professionals practicing in the United States are necessary to improve dentists' knowledge in identifying neglect and the lawful penalties for failure to report suspected cases of child abuse.

Introduction

The goal of Child Protective Services (CPS) is to provide services to children and families with the goal to not only preserve families, but to protect and prevent continual maltreatment towards children. [1] In 2019 and 2020, CPS for child abuse and neglect investigated over 3.1 million children who were victims of this major societal problem. [2] Child abuse is defined as "any act of commission or omission that endangers or impairs a child's physical, sexual, or emotional health and development". [3] The Federal Child Abuse Prevention and Treatment Act defines child abuse as, "any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation," or "an act or failure to act which presents an imminent risk of serious harm.[4] Physical abuse, sexual abuse, and emotional abuse are the three main components which make up this definition. Medical child abuse is another important form of abuse but difficult type to identify compared to others.

Physical Abuse

Signs of physical abuse can be readily identified in a dental setting and is the most prevalent of the three types of child abuse. Physical abuse is defined as, "…a nonaccidental inflicted physical injury (ranging from minor bruises to severe fractures or death) that occurs as a result of harming a child by a parent, caregiver, or other person who has responsibility for the child." [5] Physical abuse is often first recognized by a pattern or signs that are inconsistent with the history presented. Many studies have shown that oral or facial trauma occurs in about 50% of physically abused children.[3] Therefore, the oral cavity reveals itself as one of the primary locations where abuse may manifest. These oro-facial displays of physical abuse include

bruising, abrasions or lacerations of tongue, lips, oral mucosa, hard and soft palate, gingiva, alveolar mucosa, frenum; dental fractures, dental dislocations, dental avulsions; maxilla and mandible fractures.[3] This places dental professionals in a unique position to identify victims of child maltreatment, which reinforces the necessity for dental providers to be able to detect the early signs of child maltreatment.

While dental providers must be able to evaluate and discover signs of child maltreatment, some can still be misdiagnosed. A careful intraoral and extraoral assessment is paramount when evaluating any case of suspected abuse by a dental professional. This thorough evaluation can help reduce these misdiagnoses. One study revealed that 31% of infants and young children with abusive craniofacial trauma were misdiagnosed initially.[6] This difference between accidental injuries to the oral cavity, face, and head, compared to those caused by abuse, must be distinguished. This can be accomplished by establishing whether the history, timing, and mechanism of the injury is consistent with the injury type while considering the child's developmental capabilities. This can provide clues to help detect cases of physical abuse.

Sexual Abuse

A less common, but nonetheless crucial component of child abuse, is sexual abuse. The oral cavity is a frequent site of sexual abuse in children. Although visible oral injuries or infections are rarely seen, other manifestations of sexual abuse in the oral cavity may be present. Erythema, ulcer, vesicle with purulent drainage or pseudomembranous and condylomatous lesions of lips, tongue, palate and nose-pharynx may be a manifestation of sexual abuse in the oral cavity. [3] The American Academy of Pediatrics (AAP) recommends suspected victims of abuse to be referred to a specialized clinical setting equipped to conduct comprehensive examination and laboratory culture for sexually transmitted diseases including Gonorrhea,

Human Papilloma Virus (HPV), Chlamydia, Syphilis, and Human Immunodeficiency Virus (HIV). It is important to also note that HPV and Herpes Simplex Virus (HSV) do not necessarily indicate sexual abuse as they can be transmitted vertically by mother-to-child in utero or during birth. Furthermore, they can also be passed through horizontal transmission by person-to-person or to self-transmission through direct physical contact, airborne, or environmental contact modes of transmission. [5]

Child Neglect

Child neglect is the most common type of maltreatment in the United States, and it often occurs with physical abuse. [7] Child neglect is described as the willful failure of parents or other people in a position of trust to provide basic care. [8] Thus, dental neglect, is a form of physical neglect. [8] According to the American Academy of Pediatric Dentistry (AAPD), "Dental neglect is willful failure of parent or guardian to seek and follow through with treatment necessary to ensure a level of oral health essential for adequate function and freedom from pain and infection." [9] Dental neglect is most likely to be observed by Pediatric Dentist, Orthodontists, and dental hygienists in the dental office. These providers often have a patient population consisting of children who may present with clear signs of dental neglect.

Medical Child Abuse

Lastly, a less common, but nevertheless important component of child abuse, is medical child abuse. Another common synonymous term for medical child abuse is *Munchausen syndrome*. This occurs when the perpetrator is consisting of deliberately fabricating, inducing, or exaggerating an illness more frequently by the mother. [10] This can be illustrated by a child receiving unnecessary medical care because the parent is misrepresenting or purposefully making up symptoms, manipulating laboratory tests, and/or even harming the child purposely to

create symptoms for further medical care that can be the termed abusive. [11] This can be more difficult to identify, as the offenders are not the ones directly causing the abuse to the child victim and the dentist and physicians are involved in the child care. This may confound one to believe that abuse is occurring.

Oral health professionals must pay attention to any signs of distress which may manifest during dental visits when the parent or caregiver is present or absent [12] This is difficult to identify as children often present to the dental clinic with some form of dental anxiety, regardless if the parent is present or absent. Despite this difficulty, the dental professional must establish and understand the relationship between the medical history of the child versus the symptoms communicated by the parent or caregiver. [12] Symptoms of facial or dental pain may not be observed clinically. These symptoms are often vague, therefore, identifying true medical child abuse may be extremely difficult. Thus, dental professionals must utilize careful documentation and formulate a clinical diagnosis not from fictitious symptoms observed, but based on objective findings of an authentic oral illnesses. [12]

Risk Factors

Child Abuse and Neglect can occur in children in all income groups, as well as different cultural and ethnic backgrounds. Roughly 95% of victims know their perpetrators. [13] Multiple studies have been done to determine a profile of a child abuser. These studies have identified certain risk factors associated with being a potential abuser. Individuals with a history of child abuse or a history of abuse against other children are at higher risk for becoming abusers themselves. [13] Furthermore, any history of alcohol or drug abuse, anger management, and issues with problem solving and making or having choices are risk factors.[13] Studies have also shown that children who are born prematurely have a three times greater risk of being abused then

children who are not.[13] A child at risk for CAN may present to the dental office with poor oral hygiene, clothed inappropriately for the ambient conditions, and may be deprived medically or educationally.[13]

Many studies have also examined the association between socioeconomic status and the risks for hospitalization due to child maltreatment. One study examined the discharge data at all US hospitals from 2013 to 2014, including children's hospitals and academic institutions. The results showed that there was a trend of lower incidence of child maltreatment and in-hospital mortality in patients from higher socioeconomic status based on median household income.[14] In terms of mortality rates, similar trends were observed among hospitalized children. The study also found that based on median household income, the trend of decreased incidence with increasing socioeconomic status was generally consistent and significant across different age groups, ethnicities, sex and payer categories. [14]

Some other important risk factors to note include, families who are isolated and have no friends, relatives, or support systems as well as parents who were abused as children, and families who are often in crisis. [13] Parents who abuse drugs or alcohol, parent who are critical and have excessively high expectations, parents who are rigid in disciplining, teenager parents, unmarried mothers, parents of children with psychiatric diagnosis, as well as parents who show too much or too little concern for their child are each at risk being abusers. [13] Often, parents who feel they have a difficult child and those that are under a lot of stress, may take out their anger and frustration on their child. These are all additional considerations and risk factors when evaluating patients for possible signs of CAN.

Prevention of Child Abuse and Neglect

While it is well known that Child Abuse and Neglect are major problems in the United States, it is not unclear about the measures taken to prevent it. More specifically, it is important to understand how dental providers can improve early recognition of CAN and take appropriate action, as craniofacial, head, face, and neck injuries occur in more than half of child abuse cases.[15]

In 1992, an educational program named P.A.N.D.A (Prevent Abuse and Neglect through Dental Awareness) was started by a coalition of public and private organizations, aimed at helping dental office personnel recognize and report suspected cases of child abuse and neglect. [16] P.A.N.D.A. was also designed to help dental professionals understand their legal responsibility to report suspected cases of child abuse and neglect and educate the professional about how to report in each state. Since the inception of the PANDA program initially in Missouri, the program has been replicated in 44 additional states and in 6 international programs. [16] Studies have shown the need for the continuing education of health care professionals on the detection and reporting of early signs and symptoms of child abuse and neglect. [17] One study showed that 80% of dentists want further training in identifying and reporting of physical abuse related to CAN.[18]

Reporting

In all 50 states, physicians and dentists are required to report suspected cases of abuse and neglect to social service or law enforcement agencies. [19] Healthcare officials who fail to report reasonable suspicions of abuse may be subject to civil or criminal charges. There are mandates in all fifty states requiring dental professionals to report suspected cases. This is because dentists are classified as “mandated reporters”, or a person who is legally required to

report suspicion of child abuse or neglect to the relevant authorities. The Federal Child Abuse Prevention and Treatment Act (CAPTA) requires each State to have procedures in place for requiring certain individuals to report known or suspected instances of child abuse and neglect. However, it is important to note that, that although dental professionals are required to report, they do not have to prove allegations of abuse.

In terms of penalties for a mandated reporter's failure to report vary state by state. As of February 2019, approximately 49 States, including the District of Columbia, American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the Virgin Islands can impose penalties on mandatory reporters who knowingly or willfully fail to report when they suspect that a child is being abused or neglected. [20] As of 2019, in 40 states and American Samoa, Guam, and the Virgin Islands, failure for a mandated reporter to report suspected child abuse and neglect cases is classified as a misdemeanor. [20] These include: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey (charged as a disorderly person), New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, and West Virginia. [20] States such as Florida for example, have written in their 2021 Florida Statues Title V, Chapter 39, Section 205 that, "A person who knowingly and willfully fails to report to the central abuse hotline known or suspected child abuse, abandonment, or neglect, or who knowingly and willfully prevents another person from doing so, commits a felony of the third degree…" [21] This demonstrates the importance dental professionals understand not only the reporting requirements but also the penalties that may be imposed for failing to report suspect child abuse and neglect.

Dentists are in a unique position to have an ongoing relationship with repetitive visits with their pediatric patients who are seen every three to six months typically and some more often depending on their dental treatment needs. For instance, children with multiple carious lesions may need to be seen for multiple office visits to complete all required dental treatment, or children with orthodontic needs may be seen more frequently for sequential exams. Therefore, the dentist has opportunities to observe the physical and psychological condition of their pediatric patients, as well as their family environment. Despite the multitude of opportunities for dentists to detect and report child maltreatment, dental providers infrequently report suspected cases of orofacial injuries. [22] The aim for our study was to evaluate the current knowledge of United States licensed orthodontists, pediatric dentists, and others in pediatric dental practices in detection and reporting of child abuse and neglect.

Methods

The approval for this cross-sectional survey-based research was granted from the Institutional Review Board Virginia Commonwealth University (HM20020757). Licensed orthodontists and pediatric dentists, and others involved in pediatric dental care in the United States were identified from the member list of American Association of Pediatric Dentistry (AAPD) and the American Association of Orthodontists (AAO), respectively. Letters of invitations was sent to the members through email along with the link to the survey. Completion or return of the survey was considered as the participant's consent to participate.

The survey completion page included sample text and the public survey with link for providers to use to send an email invite to any dental hygienists working in their practice. The survey completion page allowed the respondents to "copy and paste" the survey letter of invitation to dental hygienists within the practice. The survey was administered through Research Electronic Data Capture (REDCap) hosted on the VCU servers. REDCap is a secure, web-based software platform designed to support data capture for research studies. Although the AAPD members were emailed directly with a unique link to participate in the survey, their email addresses were not linked in any way to their responses.

Statistical Methods

Responses were summarized using descriptive statistics (counts, percentages). Associations between self-reported encounters with suspected child abuse and neglect with various provider demographics were assessed using logistic regression. Variables significant in the bivariate analyses were considered for an overall adjusted multiple logistic regression model. Significance level was set at 0.05. All analyses were performed in SAS EG v.8.2 (SAS Institute, Cary, NC)

Results

A total of 440 respondents participated in the survey. The final sample size was 388 after removing those who indicated they do not treat children. The majority of respondents were pediatric dentists (n=301, 78%) followed by orthodontists (n=58, 15%). Other pediatric dental providers included hygiene, general practice, and public health. For further analysis, providers were categorized into primary dental providers which included pediatric dentists, general practitioners, dental hygienists, public health dentists, and others. Orthodontists comprised their own group as specialists. In terms of other demographics, 56% identified as female, 48% reported more than 20 years in practice, 72% practice in urban settings, and 38% have a patient population that's less than 10% covered by Medicaid and 21% treat greater than 71% who are covered with Medicaid. Complete respondent demographics are presented in Table 1.

Table 1: Respondent Demographics

	n	%
Gender		
Male	168	44%
Female	216	56%
Specialty		
General practice	20	5%
Pediatric dentistry	301	78%
Orthodontics	58	15%
Dental hygiene	4	1%
Public health	3	1%
Other	1	0%
Years in Practice		
1-4 years	40	10%
5-9 years	51	13%
10-14 years	54	14%
15-19 years	55	14%
Greater than 20 years	187	48%
Community Setting		
Urban	280	72%
Rural	107	28%
Percent Medicaid		
<10%	146	38%
10-30%	47	12%
31-50%	56	15%
51-70%	56	15%
71+%	79	21%

All respondents who treat children were asked various questions regarding their knowledge of the legal aspects of detecting and reporting child abuse and neglect presented in Table 2.

Table 2: Knowledge and Education on Reporting Suspected Child Abuse and Neglect

	n	%
Are dentists in your state required by law to report:		
only child abuse	26	7%
only neglect	1	0%
both child abuse and neglect	309	80%
I'm not sure	52	13%
Dentists are obligated by law to report suspected child abuse and/or neglect to:		
Law enforcement officials	14	4%
Child protective services	205	53%
Either one is fine	159	41%
Dentists are not obligated by law to report suspected cases	6	2%
Failure to report suspected child abuse by a health care professional results in:		
A felony charge	34	9%
A misdemeanor charge	45	12%
A reprimand from the Department of Human Services	5	1%
None of the above	24	6%
Unsure	281	72%
In your state, is a dentist granted immunity from civil or criminal liability if he or she reports suspected child abuse or neglect in good faith?		
Yes	247	63%
No	2	1%
Unsure	141	36%
Would you define failure to seek treatment for visually rampant untreated dental caries by a parent or guardian as:		
Child abuse	1	0%
Neglect	276	71%
Both	63	16%
Neither	49	13%
The willful failure of a parent or guardian to seek and follow through with dental treatment necessary to ensure a level of oral health essential for adequate function and freedom from pain and infection is considered:		
Child abuse	18	5%
Neglect	250	64%
Both	113	29%
Neither	8	2%
Have you ever received training on how to recognize abuse and neglect?		
No	52	13%
Yes	334	87%
Where did you receive the training? (n=334)		
Continuing Education	227	68%
Dental/Dental Hygiene School	176	53%
Residency	250	75%

With this training, how much information do you feel you received?		
Excessive	3	1%
Sufficient	256	77%
Insufficient	73	22%

Most correctly identified that dentists in their state are required by law to report both child abuse and neglect (n=309, 80%). However, most were unsure what failure to report suspected child abuse could result in (n=281, 72%). The correct answer being a misdemeanor charge for most states. More than a third of respondents were unsure if dentists are granted immunity from liability for reporting suspected CAN in good faith (n=141, 36%). Most would define failure to seek treatment for visually rampant untreated dental caries to be neglect (n=276, 71%) despite the AAPD definition indicating it must be "willful." When asked about willful failure of a parent or guardian to "seek and follow through with dental treatment necessary to ensure a level of oral health essential for adequate function and freedom from pain and infection," only 2% indicated that this was neither child abuse or neglect and most indicated it was either neglect (64%) or both (29%). Most reported receiving training on how to recognize CAN (n=334, 87%) from various sources including: continuing education (n=227, 68%), dental/dental hygiene school (n=176, 53%), and residency (n=250, 75%). Most indicated the training was sufficient (n=256, 77%) but almost a quarter indicated insufficient (n=73, 22%).

Respondents were also presented with two case studies related to child abuse and neglect. The first was an image of a five-year-old male with a physical presentation of facial abrasions and lacerations surrounding the lips, nose, chin and cheek. Some background information was included with the image including: the child's parents are divorced and he lives with his mother, the mother said he was "rough housing" with his brothers, but the child stated he fell off his bike. Only 28% of respondents correctly responded that neither the child's story nor the mother's were

consistent with the child's appearance. Most providers indicated their next step would be to question the mother and the child separately (71%) or contact Child Protective Services (21%). However, 6% (n=24) indicated they would do nothing. Providers were divided on whether they believed this to be signs of physical abuse (33%) or accidental injury (67%). When asked if they would report, 36% indicated they would not, 21% absolutely would report, and 43% responded "maybe."

The second case presented a three year old female with a physical presentation of multiple carious lesions with periapical abscesses present. The background information about the case included that this presentation was at a new patient exam, and the child's pain is spontaneous and throughout the entire day. Nearly half of the respondents felt there was not enough information to determine if neglect occurred (n=190, 49%). Further details regarding the parent's failure to present for treatment and multiple unsuccessful attempts to reschedule were provided. Providers reported their next steps to include continuing to contact the parent (n=322, 83%), documenting the concern (n=273, 70%), calling Child Protective Services (n=141, 36%). Only 7% reported they would wait for the parent to return the call (n=28). If the parent continues to fail to seek treatment, 47% would report, 39% would "maybe" report, and 14% would not report. Complete summary of the responses to the two cases are presented in Table 3.

Table 3: Clinical Case Scenarios Related to Child Abuse and Neglect

Case 1	**n**	**%**
Does the appearance seem consistent with the explanation by the mother or the child?		
Yes- consistent with mother	7	2%
Yes- consistent with child	221	57%
Yes- consistent with both	51	13%
No	110	28%
If you did decide to act based on the appearance, what would you do?		
Question the mother and child separately	278	71%
Contact Child Protective Services	82	21%
Contact the local police	6	2%
Nothing	24	6%
Would you consider this a case of:		
Physical Abuse	123	33%
Accidental Injury	254	67%
How likely are you to report?		
Would not report	140	36%
Maybe	166	43%
Absolutely report	83	21%
Case 2		
What would you classify this appearance as (Check all that apply)		
Common early childhood caries	186	48%
Dental neglect	139	36%
Not enough information to determine if neglect occurred	190	49%
The patient did not present for treatment on the day of surgery. Multiple unsuccessful attempts were made to contact the parent to reschedule. What would you do next? Check all that apply.		
Wait for the parent to return your call	28	7%
Call Child Protective Services	141	36%
Document your Concern	273	70%
Continue to try to contact the parent to ensure the parent understands the benefit of treatment and discuss barriers that might be preventing treatment	322	83%
If the parent still does not seek treatment for the patient, how likely are you to report?		
Would not report	54	14%
Maybe	154	39%
Absolutely report	182	47%

Of the 388 who indicated they treat children, 277 (71%) reported seeing or suspecting an incident of child abuse or neglect. The most common type of abuse suspected was neglect (n=235, 85%), followed by physical abuse (n=150, 54%). There were additional encounters of suspected emotional abuse (n=80, 29%), sexual abuse (n=54, 19%), and trafficking (n=12, 4%). The main reasons for suspecting abuse were severe or long-standing dental decay (77%), repeated missed appointments (55%), or inappropriate behavior by parent or guardian (45%). Indications for the suspected abuse are presented in Table 4.

Table 4: Self-Reported Encounters with Suspected Child Abuse and Neglect

	n	%
In your practice, have you seen or suspected an incident of child abuse or neglect?		
Yes	277	71%
No	112	29%
Those who have encountered (n=277)		
Type of Abuse Suspected		
Physical Abuse	150	54%
Sexual Abuse	54	19%
Emotional Abuse	80	29%
Neglect	235	85%
Trafficking	12	4%
Reasons for Suspecting Abuse		
Repeated missed appointments for treatment	153	55%
Injury or trauma	112	40%
Severe dental caries or long-standing dental decay	212	77%
Inappropriate or unusual behavior of parent/guardian	124	45%
Venereal disease or pregnancy	8	3%
Lack of parental concern for child	90	32%
Observed bruises, scars, cuts, bitemarks, or burns	101	36%
Poor hygiene, lice, or lack of appropriate clothing	120	43%
Multiple appointments for trauma or infection	48	17%
Patient or family member reported abuse to you	46	17%
Perceived Prevalence		
1-5%	182	66%
6-10%	73	26%
11-15%	10	4%
Over 15%	20	7%
Have you reported suspected incidences of abuse or neglect		
Yes	236	85%
No	41	15%
With the recent outbreak of the Covid-19 epidemic, what is the incidence, if any, of child abuse cases seen in your office?		
No increase	214	78%
Slight increase	47	17%
Moderate increase	10	4%
Major increase	5	2%

The perceived prevalence of child abuse and neglect was 1-5% for 66% of respondents, 6-10% for 26%, and 11% or more for the remaining 11%. When asked if providers perceived a change

in the incidence of CAN since Covid-19 pandemic, 78% selected no increase, but the remaining 22% selected between slight and major increases (n=62).

There were 236 respondents who indicated they had reported a suspected incident of CAN, which is 85% of those who reported encountering suspected instances. Most often, these were reported to Child Protective Services (94%). Only 41 respondents indicated barriers to reporting (17%). The most common barriers were Child Protective Services being unhelpful (46%) and being hesitant to report (46%). When asked to rate the difficulty of reporting, most indicated not difficult or slightly difficult (n=218, 92%). There were also reported instances of providers suspecting abuse that wasn't reported (n=71 providers, 26%). The reasons for not reporting included unsure about the signs (n=27, 38%), fear of repercussions if incorrect (n=22, 31%), and others (n=25, 35%). Other examples of barriers included lacking sufficient evidence (single instances, just a feeling, etc.), uncertainty, parental effort in cases of severe decay. Summary of responses related to reporting of CAN are given in Table 5.

Table 5: Self-Reported Experience Reporting Suspected Child Abuse and Neglect

	n	%
Have you reported suspected incidences of abuse or neglect		
Yes	236	85%
No	41	15%
Reported to (n=236)		
Child Protective Services/Department of Family Services	222	94%
Office Manager	17	7%
Patient's Social Worker	38	16%
Police	21	9%
Other	13	6%
Were there barriers to reporting?		
Yes	41	17%
No	194	82%
Barriers (n=41)		
Not knowing who to report to	13	32%
Child protective services representative unhelpful	19	46%
Law enforcement unhelpful	4	10%
Being hesitant/afraid to report for fear of repercussions	19	46%
Other	9	22%
How Difficult Was it to Report?		
Not difficult	149	63%
Slightly difficult	69	29%
Difficult	16	7%
Very difficult	2	1%
Have you ever suspected abuse but did not report?		
No	205	74%
Yes	71	26%
What were the reasons for not reporting?		
Unsure how to report	13	18%
Afraid of repercussions if incorrect	22	31%
Unsure of the signs of child abuse, neglect, or sexual abuse	27	38%
Concerned it would jeopardize my job	3	4%
Did not want to get involved	6	8%
Other	25	35%

Whether or not a respondent reported having encountered a suspected case of CAN was significantly associated with provider type (p-value<0.0001), community setting (p-

value=0.0132), and percent of the patient population that is covered by Medicaid (p-value<0.0001). Encounters were not significantly associated with gender (p-value=0.3279) or years in experience (p-value=0.3809). Bivariate analyses are presented in Table 6.

Table 6: Associations of Provider Characteristics and Encounters with Suspected Child Abuse and Neglect

	Encounter Suspected CAN		
	Yes	**No**	**P-value**
Gender			0.32779
Male	115, 68%	53, 32%	
Female	157, 73%	58, 27%	
Provider Type			<0.0001
Primary Dental Care	252, 77%	76, 23%	
Orthodontics	23, 39%	36, 61%	
Years in Practice			0.3809
1-4 years	30, 75%	10, 25%	
5-9 years	37, 73%	14, 27%	
10-14 years	35, 64%	20, 36%	
15-19 years	44, 80%	11, 20%	
Greater than 20 years	130, 70%	57, 30%	
Community Setting			0.0132
Urban	190, 68%	91, 32%	
Rural	86, 80%	21, 20%	
Percent Medicaid			<0.0001
<10%	83, 56%	65, 44%	
10-30%	36, 77%	11, 23%	
31-50%	44, 79%	12, 21%	
51-70%	48, 87%	7, 13%	
71+%	64, 81%	15, 19%	

Note: Primary Dental Care providers include: Pediatric Dentists, Public Health Providers, General Practice Dentists, and Dental Hygienists.

An overall adjusted model included the three variables that demonstrated significance at bivariate level with Medicaid categorized as <10% vs 10% or more (Table 7).

Table 7: Adjusted Model of Encounters with Suspected Child Abuse and Neglect

	Adjusted Odds Ratio	95% CI	P-value
Provider Type			<0.0001
Primary Dental Care	3.74	1.99-7.02	
Orthodontics	Reference		
Community			0.0163
Rural	2.04	1.14-3.64	
Urban	Reference		
Medicaid Patient Population			0.0005
10% or More	2.42	1.48-3.97	
Less than 10%	Reference		

In the adjusted model, primary dental providers were 3.7 times as likely to report having encountered a suspected instance of CAN than orthodontists (95% CI: 1.99-7.02). Those who practice in rural settings were 2 times as likely (95% CI: 1.14-3.64) and those whose patient population is composed of more than 10% Medicaid coverage were 2.4 times as likely (95% CI: 1.48-3.97) to report encountering suspected CAN.

Discussion

Dental healthcare professionals play a vital role in treating children and adolescent patients and are among the first to encounter possible victims of maltreatment. [15] It is crucial that providers can recognize possible victims of maltreatment, understand the different signs of what constitutes Child Abuse and Neglect (CAN), and how to manage and report suspected cases of CAN. Adequate education is a key foundational component that can be recommended to providers in order to properly understand and address the issues noted above. Furthermore, with sufficient education, the challenges dental healthcare professionals face with CAN may ultimately be prevented. Preventing CAN cases from not being properly recognized and addressed will ultimately serve to preserve and protect the health and safety of children. This study highlights the areas that providers are lacking in recognizing and reporting suspected CAN cases. Furthermore, it addresses the areas where more education in CAN is needed amongst dental educational institutions to better prepare dental healthcare professionals for managing these important cases affecting children.

This study ultimately set out to determine if dental professionals (pediatric dentists, orthodontists, and others) feel adequately trained to detect and report child abuse and neglect. Most (80%) did correctly identify that dentist in their state is required by law to report both child abuse and neglect. However, in terms of the consequences with reporting, 72% were unsure of the consequences of failure to report suspected child abuse could result in. As previously mentioned, in most states it is a misdemeanor charge for failing to reporting suspected cases of child abuse. This shows that states take this issue seriously and it is important for dental professionals to understand the repercussions for not following through with reporting. In terms

of recognizing neglect, 71% would define failure to seek treatment for visually rampant untreated dental caries to be neglect, despite the AAPD definition indicating it must be "willful." If most dental professionals are recognizing any visual rampant decay as pure neglect the issue of overreporting may arise. Despite this, 87% of dental professionals did report receiving training on how to recognize CAN from various sources; moreover, 77% indicated they felt the training was sufficient.

To test this training, case scenarios were presented to dental providers who completed the survey. In the first case scenario dealing with the physical presentation of facial trauma, most providers (71%) indicated their next step would be to question the mother and the child separately with 21% going straight to Child Protective Services instead of contacting them separately. Consistency in responses between caregiver and child are one of the crucial ways to help determine abuse or accidental injury. Our survey results showed that most dental professionals understand the need to interview both caregiver and child separately, which alludes to the idea that maybe dentists are adequately trained in this area of handling cases of CAN. There are some limitations noted with the first case scenario. In the first question, "Does this appearance seem consistent with the explanation provided by the mother or child?", an answer choice of "not enough information provided" would have been a good option to provide as a response. The objective should be to gather more information before concluding an accident or abuse occurred. Another limitation to the scenario is the limited amount of detail in the prompt. More information could have been provided in the prompt, including timing of the incident, or even follow-up questions to the child to provide more details about the alleged bike crash. All of these additions would allow the dental providers completing the survey to have more informed responses.

In the second case scenario dealing with the physical presentation of rampant decay and periapical abscess, 49% of respondents felt there was not enough information to determine if neglect occurred. However, interestingly, only 47% of respondents indicated they would report if the parent continues to fail to seek treatment, with 39% stating they "maybe" would report. These findings show that there still may be a level of discomfort among providers with reporting suspected cases of neglect, despite 77% feeling their training is sufficient. A limitation to note with this case scenario was a lack of information including whether the parent took the patient to a different dental provider for treatment. It may have been assumed by the reader that they may not have. Additional information would likely have provided more certainty in the correct response.

In terms of actual self-reported encounters with suspected child abuse and neglect the perceived prevalence of child abuse and neglect was low with only 1-5% percent for the majority (66%) of respondents. The majority (78%) also reported no perceived increase in CAN prevalence with the onset of the COVID-19 pandemic. One systematic rapid review of child maltreatment during the COVID-19 pandemic found mixed results regarding the prevalence of documented cases. Five articles documented an increase in child maltreatment, six articles documented a decrease, and one article found no significant difference in child maltreatment rates.[23] This systematic review found there to be increasing trends of child maltreatment in hospitals, yet decreasing child maltreatment crime reports during the COVID-19 pandemic. [23] This brings up the question of the whether reporting was accurate during this time. Furthermore, there was an increased hesitancy to visit hospitals and other clinics, such as dental offices, during the COVID-19 pandemic. This means that there is less contact with mandated reporters, such as dental providers. This may have been better addressed by adding a question addressing the

amount of patients providers are seeing since the onset of COVID-19. This could be included in future studies.

Eighty-five percent of respondents indicated they had reported encountering suspected instances with 94% of these being reported to Child Protective Services. The majority (82%) also stated they did not experience barriers to reporting. Our survey clearly demonstrates that a vast majority of suspected cases are being reported. In terms of the 17% who had barriers with reporting, the most common barriers were Child Protective Services being unhelpful (46%) and being hesitant to report (46%). The survey did not explore further details on the shortcomings of Child Protective Services. Further investigation should be done to determine what could be done to improve the relationships between CPS and mandated reporters. A quarter (26%) of respondents indicated they suspected abuse but did not report most commonly because they were unsure about the signs (38%), had fear of repercussions if incorrect (31%), and other causes were cited but not specified (35%). This exemplifies the need for more continual education of CAN in these areas.

Several associations between provider characteristics and encounters with suspected child abuse and neglect were found in this study, with there being an association of whether or not a respondent reported having encountered a suspected case of CAN with provider type, community setting, and percent of the patient population that is covered by Medicaid. However, there was no association with years of experience nor gender. In the adjusted model, primary dental providers were 3.7 times as likely to report having encountered a suspected instance of CAN than orthodontists. This is likely in large part due to the percentage of pediatric providers seeing younger age group patients.

The study was only sent in English to prevent any barriers for the participant population. As a way to decrease participant coercion, participants had adequate time to review the letter of invitation (up to 4 weeks) and could elect to opt out of participation by simply not participating in the survey. The AAPD allows members to purchase access to the mailing list. A list of the email addresses for active members was required. The AAO allows access to the members, but the email request is sent by the organization through the Partners in Research Program and the addresses are not obtained by our study team. Due to the complex recruitment strategy, the response rate could not be completely calculated.

One of the limitations of this study was a low number of orthodontists who completed the survey (15%). It is unclear as to specifically the reason for this poor response rate; however, it may be due to lack of interest as orthodontists may perceive that they might not encounter child abuse and neglect as often in their practice. It is clear that more education is necessary, specifically in understanding penalties by law that are imposed if there is a failure to report known suspected child abuse by a health care professional. The results show that providers are fairly knowledgeable in terms of CAN; however, the data also reveals that providers do not report when suspected of CAN. A possible explanation could be a lack of confidence or possible fear of reporting erroneous claim or retaliation. Further studies should focus on other specialties within dentistry to understand their knowledge on child abuse and neglect, as well as to reinforce the need for continuing education or include necessary training during the residency program.

Conclusion

Pediatric dentists, orthodontists, and other providers of pediatric dental care in the United States do not have the adequate training to detect and report child abuse and neglect. Dental professionals feel they have received sufficient training for recognizing abuse and neglect, yet a quarter of respondents still suspected abuse but did not report. Further research is necessary to better understand what can be done so dental professionals feel more comfortable managing and reporting suspected cases of CAN.

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Appendix

Detection and Reporting of Child Abuse and Neglect

Dear Colleague/Member of the AAO/AAPD,

My name is Daniel Lander and I am a first year Pediatric Dental Resident at Virginia Commonwealth University. You are invited to participate in a research study to evaluate the knowledge of United States pediatric dentists, orthodontists, and dental hygienists in the detection and reporting of child abuse and neglect. Your participation is voluntary.

In this study you will be asked to take a survey and provide answers to various questions regarding child abuse and neglect. You will also be shown several images of suspected child abuse and neglect and answer questions in response to the images. You will not be asked to identify yourselves on the survey, so the responses will be anonymous. Completion of the survey will indicate your consent to participate in this research. Once you submit your responses you will not be able to withdraw since there will be no way to identify your response.

Do you treat patients 0-18 years old?

◯ Yes
◯ No

In your practice, have you seen or suspected an incident of child abuse or neglect?

◯ Yes
◯ No

What type of child abuse and/or neglect was suspected?

☐ Physical abuse
☐ Sexual Abuse
☐ Emotional abuse
☐ Neglect
☐ Trafficking

What caused you to suspect child abuse and /or neglect? (Select all that apply)

☐ repeated missed appointments for treatment
☐ injury or trauma
☐ severe dental caries or long-standing dental decay
☐ inappropriate or unusual behavior of parent/guardian
☐ venereal disease or pregnancy
☐ lack of parental concern for child
☐ observed bruises, scars, cuts, bitemarks, or burns
☐ poor hygiene, lice, or lack of appropriate clothing
☐ multiple appointments for trauma or infection
☐ patient or family member reported abuse to you

What is the prevalence of suspected cases of child abuse and neglect that you have witnessed in your practice?

☐ 1-5
☐ 5-10
☐ 10-15
☐ Over 15

Have you reported any suspected incidences of abuse and/or neglect?

◯ Yes
◯ No

To whom did you report? (Select all that apply)

☐ Child Protective Services/Department of Family Services
☐ Office Manager
☐ Patient's Social Worker
☐ Police
☐ Other

Were there barriers to reporting the incident?

◯ Yes
◯ No

Did you find any of these barriers when reporting? Select all that apply.

☐ Not knowing who to report to
☐ Child protective service representative unhelpful
☐ Law enforcement unhelpful
☐ Being hesitant/afraid to report for fear of repercussions
☐ None of the above
☐ Other

Describe any other barriers you experienced:

_____

How difficult was it to report?

◯ Not difficult
◯ Slightly difficult
◯ Difficult
◯ Very difficult
◯ Unable to report

Have you ever suspected abuse but did not report?

◯ Yes
◯ No

What were the reasons you did not report? Check all that apply

☐ unsure of how to report
☐ afraid of repercussions if incorrect
☐ unsure of the signs of child abuse, neglect, or sexual abuse
☐ concerned it would jeopardize my job
☐ did not want to get involved
☐ other

Are dentists in your state required by law to report:

◯ only child abuse
◯ only neglect
◯ both child abuse and neglect
◯ I'm not sure

Dentists are obligated by law to report suspected child abuse and/or neglect to:

◯ Law enforcement officials
◯ Child protective services
◯ Either one is fine
◯ Dentists are not obligated by law to report suspected cases

Failure to report suspected child abuse by a health care professional results in:

◯ A felony charge
◯ A misdemeanor charge
◯ A reprimand from the Department of Human Services
◯ None of the above
◯ Unsure

In your state, is a dentist granted immunity from civil or criminal liability if he or she reports suspected child abuse or neglect in good faith?

◯ Yes
◯ No
◯ Unsure

Would you define failure to seek treatment for visually rampant untreated dental caries by a parent or guardian as:

◯ Child abuse
◯ Neglect
◯ Both
◯ Neither

The willful failure of a parent or guardian to seek and follow through with dental treatment necessary to ensure a level of oral health essential for adequate function and freedom from pain and infection is considered:

◯ Child abuse
◯ Neglect
◯ Both
◯ Neither

Have you ever received training on how to recognize abuse and neglect?

◯ Yes
◯ No

Where did you receive the training? Select all that apply

☐ Continuing education
☐ Dental School/Dental Hygiene School
☐ Residency

With this training, how much information do you feel you received?

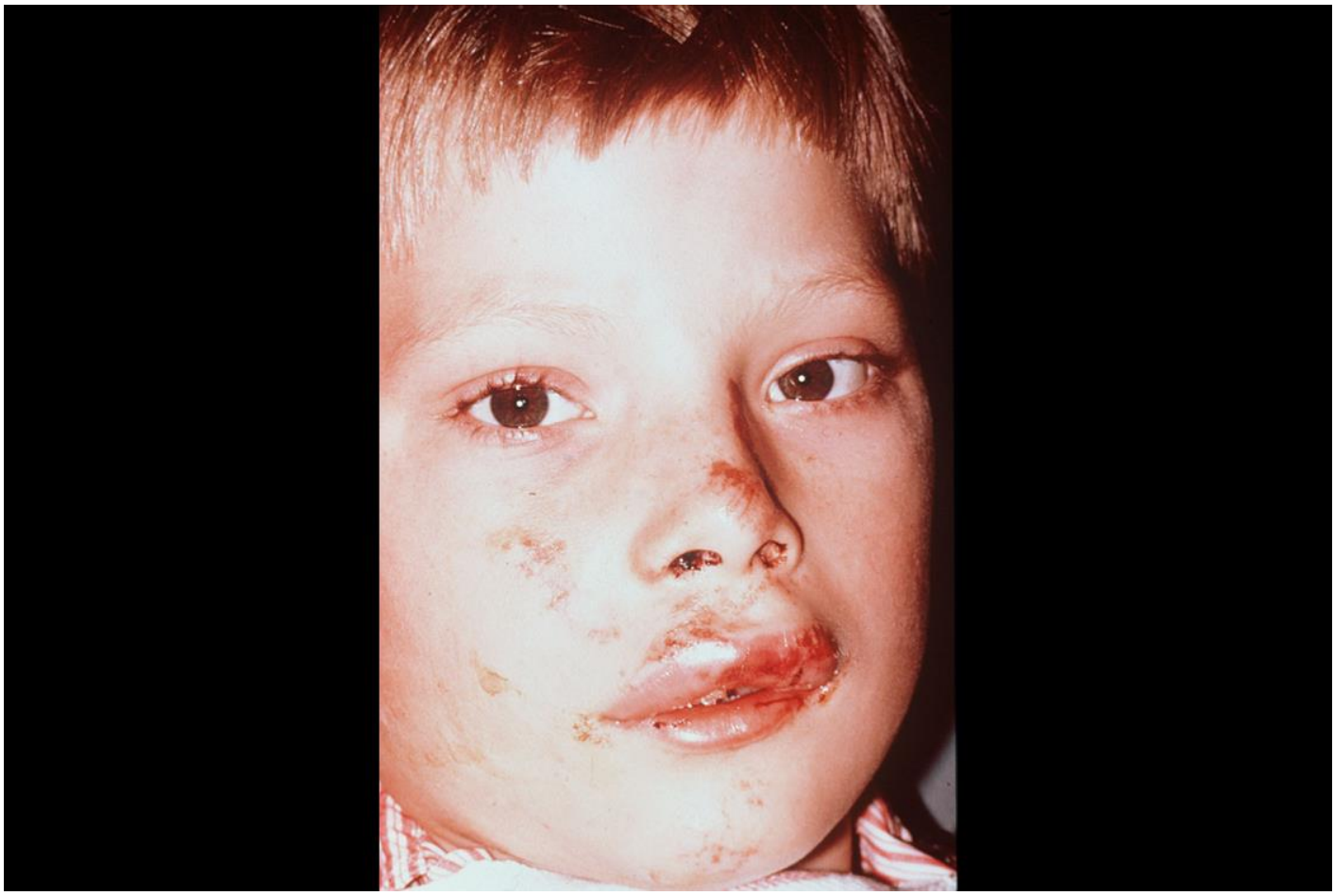
◯ Excessive
◯ Sufficient
◯ Insufficient

With the recent outbreak of the Covid-19 epidemic, what is the incidence, if any, of child abuse cases seen in your office?

◯ No increase
◯ Slight increase
◯ Moderate increase
◯ Major increase

Case 1

Case #1 - Jackson is a 5 year old male with no significant medical history. His parents are divorced and Jackson lives with his mother. Jackson presents to the dental clinic with the following physical presentation below. His mother states he was "rough housing" with his brothers, but the child stated he fell off his bike.



Does this appearance seem consistent with the explanation provided by the mother or child?

◯ Yes- consistent with mother
◯ Yes- consistent with child
◯ Yes- consistent with both
◯ No

If you did decide to act based on this appearance what would you do? (Check all that apply)

◯ Question the mother and child separately
◯ Contact Child Protective Services
◯ Contact the local police
◯ Nothing

Would you consider this a case of:

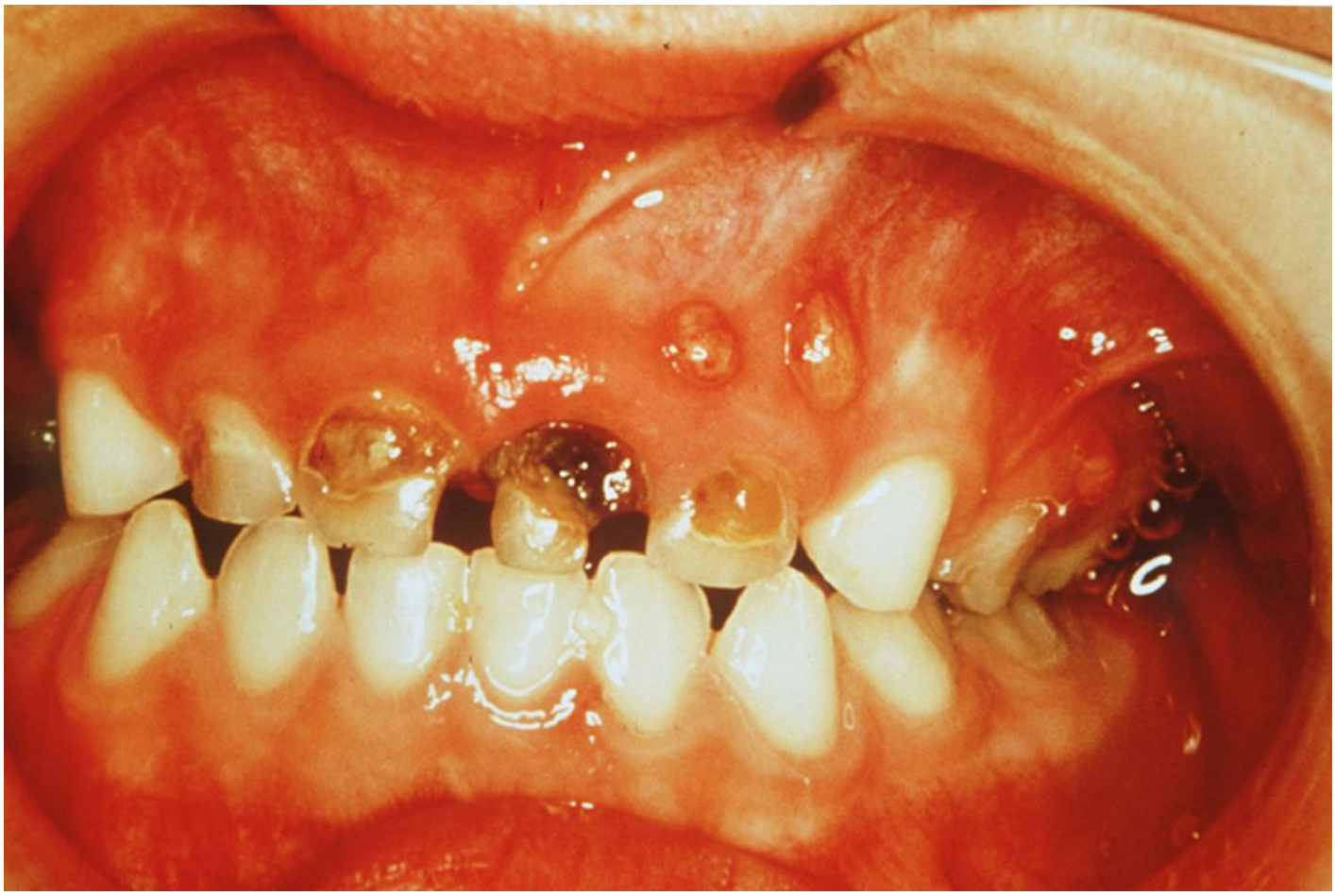
◯ Physical Abuse
◯ Accidental Injury

How likely are you to report?

◯ Would not report
◯ Maybe
◯ Absolutely report

Case 2

24. Case #2 - A 3 year old female with no prior significant medical history presents to the dental clinic for a new patient exam. Upon clinical examination, multiple carious lesions with periapical abscesses are present. The child's pain is spontaneous and throughout the entire day.



What you classify this appearances as: (Select all that apply)

- ☐ Common early childhood caries
- ☐ Dental neglect
- ☐ Not enough information to determine if neglect occurred

After examination, the parent was informed of the recommended treatment, and the risks and benefits of treatment. Informed consent was obtained. Emergency extraction of the symptomatic teeth was provided. The patient was scheduled for the completion of his treatment under general anesthesia due to age and behavior. The patient did not present for treatment on the day of surgery. Multiple unsuccessful attempts were made to contact the parent to reschedule. What would you do next? Check all that apply.

- ☐ wait for the parent to return your call
- ☐ call child protective services
- ☐ document your concern
- ☐ continue to try to contact the parent to ensure the parent understands the benefit of treatment and discuss barriers that might be preventing treatment

If the parent still does not seek treatment for the patient, how likely are you to report?

- ☐ Would not report
- ☐ Maybe
- ☐ Absolutely report

Demographics

What is your gender?

◯ Male
◯ Female

What year did you graduate dental school/dental hygiene school?

◯ 1975-1985
◯ 1985-1995
◯ 1995-2005
◯ 2005-2015
◯ 2015-present

How many years have you been in practice?

◯ 1-4 years
◯ 5-9 years
◯ 10-14 years
◯ 15-19 years
◯ Greater than 20 years

Where do you practice?

◯ Urban
◯ Rural

In what part of the country do you practice?

◯ Southwest
◯ Northwest
◯ Northeast
◯ Southeast
◯ Central

What is your specialty?

◯ General practice
◯ Pediatric dentistry
◯ Orthodontics
◯ Dental hygiene
◯ Public health
◯ Other

Describe your practice? (Check all that apply)

☐ Private Practice
☐ Corporate practice
☐ Military
☐ Hospital university
☐ State or federally funded clinic
☐ Other

What insurance type/payment received? (Check all that apply)

☐ Fee for service/ Self-pay
☐ Private Dental Insurance
☐ Medicaid

What percent of your patients are covered by Medicaid?

☐ < 10%
☐ 10-30%
☐ 30-50%
☐ 50-70%
☐ >70%