Curriculum Vitae

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Postgraduate Training

University of Maryland School of Dentistry, Baltimore, MD 07/2021-06/2024
Endodontic Residency

Montefiore Hospital, Bronx, NY 07/2020-06/2021
General Practice Residency

Chase Brexton Health, Baltimore, MD 07/201-06/2015
Advanced Education in General Dentistry Residency

Education

University of Maryland School of Dentistry, Baltimore, MD 07/2021-05/2024
M.S., Dental Biomedical Sciences

Howard University College of Dentistry, Washington, DC 08/2010-05/2014
Doctor of Dental Surgery

Xavier University of La, New Orleans, La 08/2004-05/2008
B.S., Biology; Minor, Chemistry

Professional Experience

Charles County Department of Health, White Plains, MD 03/2019-06/2020
Associate Dentist

Flower Ave Dental, Silver Spring, MD 01/2018-05/2019
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Dynamic Dental Care, Silver Spring, MD 08/2017-01/2019
Associate Dentist

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Associate Dentist

Gaithersburg Gentle Dental, Gaithersburg, MD 08/2016-01/2017
Associate Dentist

Good Hope Family Dental, Washington, DC 02/2016-10/2016
Associate Dentist

Dental Dreams, LLC Baltimore, MD 09/2015-03/2016
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"Inferior Alveolar Injuries for Dummies: Assessment and Management;" Stroeters NH*, Jackson CM*, Griffin IL, Tordik PA

"A Little Bit of Lagniappe: Treating Dental Problems in a Hospital Emergency Department;" Jackson C*, Tordik PA, Martinho FC, Griffin IL

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Clinical Instructor General Dentistry Department

Externships

New York University College of Dentistry, NY, NY
Educational visit/ Post Graduate Endodontics

Lutheran Medical Center, Brooklyn, NY
Educational visit/ Postgraduate Endodontics

LSU School of Dentistry, New Orleans, La
Educational visit/ Postgraduate Endodontics

Professional Affiliations

American Association of Endodontists Continuing Education Committee
DC Dental Society-Bylaws & Constitution Committee
Edward C. Penick Endodontic Study Club
American Association of Endodontists
Maryland State Dental Association
Baltimore City Dental Society
DC Dental Society

Title of Thesis: Extra! Extra! Read All About It: A National Dental Survey of the Emergency Room Physician

Courtney M. Jackson, Master of Science, 2024

Thesis Directed by Patricia A. Tordik, D.M.D, FICD, Endodontics Division, School of Dentistry

Physicians are the first point of contact for patients who present to the ED with dental pain, infection, and trauma. This study determined the Physician's knowledge gap when assessing and rendering care to the ED dental patient. 81 American College of Emergency Physicians (ACEP) ED physician members were surveyed online using Qualtrics.™ The sample group was questioned about their comfort level when assessed and rendered care for dental pain, infection, and trauma. If satisfied with support when assessed and rendered, Chi-square and Fisher's exact test analysis was undertaken using contingency tables. The survey associated assessment and rendered care for dental trauma and severe local odontogenic infection. This is influenced by satisfaction with dental education (10x odds more comfortable), years in practice, and ACEP affiliation. This survey presented an opportunity for advancement in physician management of trauma and infection. Continuing medical education courses for ED physicians with dental emergencies could include instruction and guidelines on assessing and rendering care for dental trauma and severe dental disease.

Extra! Extra! Read All About It: A National Dental Survey of the Emergency Room Physician

by
Courtney M. Jackson

Thesis submitted to the Faculty of the Graduate School of the
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List of Abbreviations:

WHO	World Health Organization
ACA	Affordable Care ACT
ADA	American Dental Association
ED	Emergency Department
NTDC	nontraumatic dental condition
LO	local odontogenic infection
SO	severe odontogenic infection
ACEP	American College Emergency Physicians
IRB	International Review Board
ICD	International Classification of Diseases
CME	Continuing Medical Education
UMSOD	University of Maryland School of Dentistry
UMMC	University of Maryland Medical Center
OMFS	Oral Maxillofacial Surgeon
AAE	American Association of Endodontists
IADT	International Association of Dental Traumatology
CJ	Courtney Jackson
PT	Patricia Tordik
DG	David Gatz
NL	Nicole Lennon

Introduction

The World Health Organization (WHO) Global Oral Health Status Report (2022) estimated that 3.5 billion people worldwide are affected by oral health complaints.[1] The WHO further estimated that 2 billion people suffer permanent tooth caries, and 514 million children suffer from primary tooth caries.[1] Dental caries are preventable but cause problems, including fracturing enamel, resulting in loss of function and poor mastication.[2] The caries disease process is multifactorial on the tooth level. Biofilms and fluoride intake influence the diet.[3] Caries can indirectly affect behavior, learning, income, and socioeconomic status.[4] A Finnish study identified that dental emergencies were due to caries in adults.[2,5] Dental disease is a public health concern affecting an individual's overall quality of life.

Efforts have been made to adjust the dietary lifestyles of individuals through oral health education,[6,7] including Head Start programs and implementation of the Medicaid/-Affordable Care ACT (ACA). The reason why dental caries and access to dental services continue to affect children and adults worldwide is complex. According to the American Dental Association (ADA), there are approximately 200,000 practicing dentists in the United States (2022).[8] The Health Resources and Services Administration (HRSA) estimates that there will be a surplus of dentists by 2040.[8] If the number of dental health professionals steadily rises, it would seem intuitive that access to dental care should improve similarly. However, socioeconomic education and income remain significant barriers to accessing dental care.[9]

Barriers to Dental Care Services

The Affordable Care Act (ACA) has improved access to care.[10-13] However, the division between individuals with or without dental insurance and those without medical insurance still exists.[13] In 2013, more than 10% of children and 30% of adults did not have dental insurance, compared to less than 10% of children and 20% of adults without medical coverage.[13-15] Medicaid is the largest funding source for medical and dental services in the United States. Benefits are extended to those who are pregnant, elderly, or blind and to all children based on the Federal Poverty Level (FPL).[16] Since July 2023, 88 million people have been enrolled in Medicaid and Children's Health Insurance Programs (CHIP) across 50 states and the District of Columbia.[17] Medicaid mandates dental benefits for children, including pain and infection management, tooth restorations, and preventative care.[13,16] It is left to the state's discretion to offer adult dental benefits in one of four coverage categories: none, emergency, limited, or comprehensive.[18] Adult dental care utilization steadily decreases due to financial barriers and decreased dental benefits.[13]

A survey conducted by the National Health Interview Survey (NHIS) identified essential barriers to dental care.[13] Regardless of age, many reported financial barriers to dental care compared to medical care.[13] The cost associated with barriers based on the FPL was assessed. In 2019, 20% of Florida's children lived below the FPL.[19] Children without a dental home due to parental finances, education, and socioeconomic status often sought dental treatment in the Emergency Department of a hospital (ED).[20-21] Dental care had the highest financial barriers among each insurance type: private, Medicaid, or uninsured. This was especially true for non-elderly adults.[13, 22] Cost was noted as the primary reason patients did not seek dental treatment.[13-14,] Adult Medicaid benefits are usually capped.[14]

Visiting an ED for dental treatment is expensive, inefficient, and often incomplete. Between 1993 and 2003, there was a steady increase in dental ED visits.[16,23-25] This rate costs taxpayers, hospitals, and the government about 2 billion annually.[26]

Patients covered by Medicare or Medicaid typically do not have dental insurance, are most likely to visit the ED for a dental problem and are at higher risk for death in the ED.[16,27] Preventive care and definitive management of dental disease are better delivered in dental offices by dentists and dental hygienists.[16,28] A dental office can perform definitive procedures, including tooth extractions, root canal treatment, restorations, and cleanings. The care delivered in EDs is transitory and palliative, with antibiotics, fluid replenishment, local anesthesia, and pharmacologic pain management.[29-30] The geographic distribution of dentists and small numbers of dentists accepting Medicaid due to low reimbursement fees and rates contribute to the problem.[15,31-32,] Racial disparities also contribute to the problem.[33] Black patients with no insurance, state insurance, and of lower socioeconomic class visit the ED more than white patients.[16,33-36] Hispanic patients visit the ED due to barriers including limited access and low healthcare literacy.[33,35]

Individual State Efforts

Wisconsin Medicaid enrollees who are Native American or black had higher visits to the ED than physician offices because they reside in Dental Health Professional Shortage areas (DHPSA).[36] Native Americans, African Americans, and multi-race individuals have higher odds of unmet dental care, including routine care.[36-37]

In Iowa, Hispanic patients and Native American patients who were either Medicaid and Medicare enrollees or else uninsured and living in urban areas were associated with repeat visits to the ED for nontraumatic dental conditions (NTDC).[38] A retrospective study

spanning five years in Kansas City correlated dental-related ED visits by zip code with socioeconomic characteristics.[39] Visits were strongly associated with patients who were black, female, aged 19-35 years, and residing in lower economic zip codes.[36,40] This is consistent with other studies examining neighborhood characteristics and ED visits.[41-42] Visits for dental problems were also higher in populations when English was not spoken at home.[39]

In 2014, medical, dental, and behavioral health were combined into a regional Coordinated Care Organization (CCO) in Oregon.[9,43] Implementation of the CCO reduced ED visits for non-traumatic dental conditions. Risk factors for NTDC include citizens of rural communities, fear, poor diet, and poor hygiene.[9,44-45] Kentucky expanded dental Medicaid benefits to adults, and there was an increase in ED visits.[46] The expansion reached individuals with poorer oral health who sought treatment in the ED for unmet dental needs.[46] The results of expanding Medicaid to include dental benefits in Nevada and Kentucky suggest that it does not result in dental problems being managed in the dental office. Many will continue seeking care in the ED.

Impact of Eliminating Medicaid Dental Benefits:

Before Medicaid with the ACA, states eliminated Medicaid dental benefits due to poor reimbursement rates and provider shortages.[47-49] Benefits were restored from 2010 to 2013, and an increase in ED use for NTDCs was subsequently noted.[47] Eliminating Medicaid dental benefits in Maryland in 1993 widened the gap for minority access to care. Reimbursement was eliminated for dentists but not for the ED, resulting in a 12% increase in nonurgent, dental-related ED visits.[48] The Maryland study showed an 8% decrease in physician office visits. Due to budget constraints, California eliminated Medicaid adult

dental coverage, and there was an immediate increase in ED visits from 2006 to 2011.[49]

In 2003, when Oregon amended its Medicaid program, it eliminated dental benefits, and copayments were imposed for medical services with the Oregon Health Plan Standard (OHP). When OHP enrollees' benefits were eliminated, it was reported that there were significantly higher unmet dental needs and fewer dental exams.[50] In the Massachusetts study, unmet dental needs increased when dental benefits were eliminated.[47] When comparing states that eliminated dental benefits, more individuals sought the ED for treatment and reported unmet dental needs. [47-49] Even with the expansion of Medicaid dental benefits, few dental providers participate as Medicaid providers, and expanding benefits in rural areas did not result in few visits to the ED, indicating that it does not improve access to care.[51]

Deamonte Driver:

A severe consequence of limited access to care is demonstrated in the story of Deamonte Driver. In 2007, Deamonte was a 12-year-old boy from Prince George's County, Maryland. Deamonte died from complications from an abscessed tooth. Initially, there was a lapse in his mother's Medicaid coverage. Neither Deamonte nor his family had preventative dental care, and the number of dentists accepting Medicaid in Maryland was limited. A tooth extraction that should have cost $80.00 instead cost the system approximately $250,000 and tragically cost Diamonte his life. As a result, the Deamonte Driver project was created to provide dental care to low-income students in Prince George's and Montgomery County schools.

Since Diamonte's death, one suggestion to manage similar problems includes diverting individuals from the ED to an offsite urgent care dental clinic.[52] A pilot program

at Virginia Commonwealth University decreased ED usage by approximately 52%.[52] Since a hospital may not be co-located with a dental clinic or school, another suggestion is to utilize midlevel dental providers. To effectively bring about change concerning access to care, there must be a paradigm shift in the value of dental care in the United States.

Hospital Coding for Dental Care

The International Statistical Classification of Diseases and Related Health Problems (ICD) is used when patients present to the ED. ICD coding is used for insurance reimbursement and hospital revenue data.[35-50] The World Health Organization manages the classification system.[53] The ICD contains codes for diseases, signs, symptoms, abnormal findings, complaints, social circumstances, and external causes of injury or disease. ICD coding lists patient demographic and visit information, such as age, sex, race, ethnicity, year, county of residence, principal diagnosis made by the provider procedure codes, total hospital charges, length of stay, and source of admission.[53]

Hospital Cost for Dental Care

Reports indicated that 4.3% of ED visits annually were related to dental conditions.[54-56] In the National Emergency Department Sample (NEDS) from 2008-2010, there were over 300 million visits to the ED in the United States.[54] Within this NEDS number, about 1%, or 4 million patients, relied on the ED.[26,54] The average hospital charge during this study period was $760 compared to approximately $400 for ED visit costs in Kansas City between 2001 and 2006.[39,54]

In a retrospective study from the California State Emergency Department Database (SEDD), 60 million visits to the ED between 2005 and 2011 were analyzed. It was estimated that 400,000 were due to dental disease.[56] Between 2001 and 2010 in the United

States, visits for dental problems steadily increased from 1 to 2 million.[57] Elevated risk groups are likely to visit the ED for dental care, including older males and non-Hispanic Black people.[56] Florida residents and their frequency of ED use were drawn from ambulatory discharges from 2005-2014.[58] Total charges for dental-related ED visits in Florida increased fourfold from $50 to $230 million.[58]

In a retrospective analysis of hospital inpatient admissions of children and adolescents for NTDCs in Florida over ten years (2006-2016),[22] total charges increased threefold, from $10 to $28 million.[20] One retrospective analysis of hospital admissions for NTDCs from Florida EDs showed a $46 to $167 million increase over the study period.[59] The increase in charges appears to be primarily due to an increase in the number of admissions since the average length of stay did not change.[59]

Hospital Utilization for Dental Care

A dental patient visiting the ED due to an NTDC is highly influenced by age. Middle-aged adults 20-44 years old were more likely to visit the ED than older adults. [60-64] Analysis of Behavior Risk Factor Surveillance System results in Rhode Island identified that 22% of adults ages 21-64 years did not have preventative care.[65] An emergency dental visit was the first contact with a dentist for about 30% of all children and 50% of children younger than three years old.[66] Children between the ages of 3-6 years and their parents frequently utilized the ED for NTDC.[28]

A retrospective study at Texas Children's Hospital discussed the prevalence of pediatric patient ED visits for dental treatment.[67] The median age was five years old, and each patient had various reasons for seeking dental services in the ED, such as trauma, caries, and teething.[67-68] Pediatric pulp-related problems were more common between the ages of 4 and 6.[68.] Without sealant placement, Medicaid recipients under three years old

would likely visit the ED for NTDC.[69] These papers highlight that ED visits for dental problems, although prevalent in the middle and older age groups, are also prevalent in pediatric patients.

There are conflicting findings comparing ED patient demographics. Some papers state there is no significant difference between black and white patients.[9,16,33,36,72] Other papers identify that Black and Hispanic patients are more likely to visit the ED than White patients, but this may be attributed to studies being completed in more racially diverse areas. [27-33,34,39,70] It is also reported that there are proportionally more Native Americans and fewer Asian Pacific Islanders who utilize the ED for dental treatment.[16,9,38,60] Regarding pediatric patients, Black and Hispanic patients presented as the majority who visited the ED for dental problems.[21,56,73] Ultimately, the use of the ED for dental care may be more influenced by insurance status.[71-72]

A Canadian study found that low-income (CAD 15,000-20,000 annually) working adults who could not afford dental care were likelier to have an NTDC ED visit.[74] A cross-sectional survey conducted at a French public hospital investigated socioeconomic and clinical variables. It compared patients using emergency dental services and those utilizing general dental services. Results indicated that unemployed individuals or manual workers utilized emergency dental care services more frequently.[75] Approximately 70% of patients who visited the ED lived in a lower geographical area.[54] It was also shown that ED uses for NTDCs increased with lower income and higher unemployment levels.[24,75-77] Medicaid recipients and uninsured have higher odds of visiting the ED than privately insured, and Medicaid is likely the primary payer for NTDC.[8-9,36,38,54,56,72,76] Canadian studies reported that persons without dental insurance were more likely to use the ED for NTDCs compared

to the insured.[74,78]

Physician Management of Dental Conditions

Individuals who present to the ED with an NTDC can be effectively managed at a dental clinic. However, when faced with pain, infection, or trauma, visiting the ED may seem like the best option. Anyone presenting to the ED with an NTDC will have an encounter with a medical practitioner (physician, nurse practitioner, physician assistant). When physicians encountered patients with a dental infection, less than 30% provided optimal treatment, and there needed to be more definitive care.[79-81] ED physicians provided prescriptions and drug samples to alleviate dental problems based on empirical evidence rather than a definitive diagnosis.[80-83] Dental infections, tooth avulsions, luxations, and fractures are all present in the ED. Physicians demonstrated confidence when managing dental trauma related to their exposure level.[84] Physician affiliation with an academic institution positively impacted traumatic dental injury management.[85]

Physician Education and Training

Physicians and other healthcare providers are asked to diagnose and manage non-urgent and emergent dental problems in the ED. This may feel uncomfortable to physicians because dentistry is not taught in medical school. Some studies revealed that physicians received formal training in managing traumatic dental injuries (TDI) during residency.[85] However, the consensus is that ED providers need an understanding of TDI management.[85-87] One study reported that managing avulsed teeth was related to being married to a dentist. There was no correlation with medical specialty, years of practice, gender, or previous training in TDI management.[86]

A questionnaire regarding tooth avulsions was sent to physicians practicing in

Kuwait. All respondents reported that the first aid course did not cover TDI management. Physicians did not know how to manage a "knocked out" tooth and had not received any formal training or any dental education course during medical school.[87] Similarly, surveyed Israeli physicians regarding TDI management highlighted that less than 10% of physicians were trained. Despite a high rate of experience with TDI management, there was a poor response regarding the diagnosis and treatment of TDI.[87-88]

Purpose

A survey was developed and distributed to assess whether American College of Emergency Physicians (ACEP) members were comfortable assessing and rendering care to patients who presented to the ED with dental pain, infection, or trauma. Participants were also asked about their satisfaction with dental supplies in the ED, access to a dentist, and their level of dental training. Survey responses can be used to develop a continuing medical education course (CME) to address the knowledge gap of ED physicians.

Hypotheses:

1. Due to a lack of training and exposure, the ED physician is uncomfortable assessing and rendering care for dental pain, infection, and trauma.
2. Variability of dental supplies and access to a dentist are related to the comfort level in assessing and rendering care to dental patients in the ED.
3. The ED physician demographics, such as years of practice and board certification, are related to the comfort level in assessing and rendering care for dental problems.

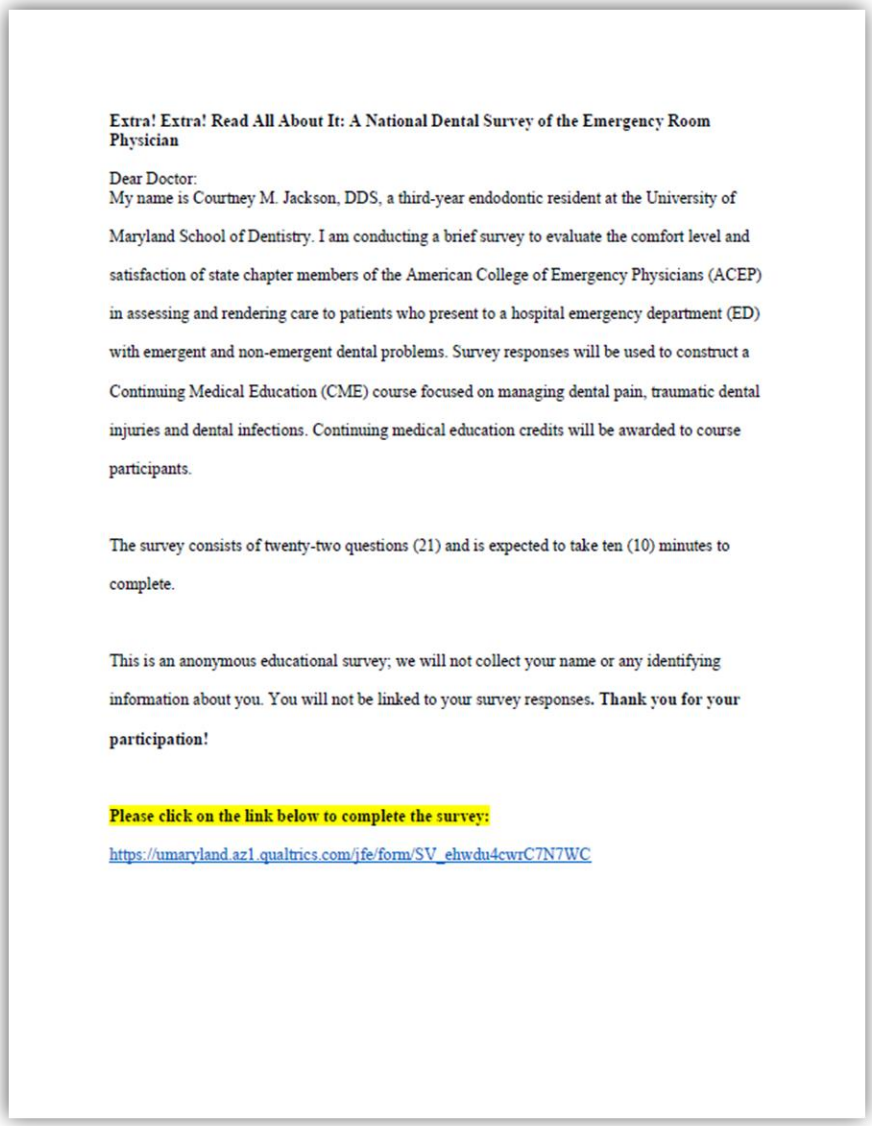
Material and Methods

The survey design and questions were created by CJ, receiving input from PT. Additional input was provided by LB and DG. The Institutional Review Board (IRB) at

the University of Maryland, Baltimore, granted exempt status(HP-00100732).

CJ sent an email to the administrative assistants of state ACEP chapters. It included an introduction of CJ, the survey purpose, the number of survey questions, approximate survey completion time, the confidentiality of ACEP members' information, and an active link to complete the survey (Fig. 1).

Figure 1: Introductory email sent to the ACEP members.



Extra! Extra! Read All About It: A National Dental Survey of the Emergency Room Physician

Dear Doctor:
My name is Courtney M. Jackson, DDS, a third-year endodontic resident at the University of Maryland School of Dentistry. I am conducting a brief survey to evaluate the comfort level and satisfaction of state chapter members of the American College of Emergency Physicians (ACEP) in assessing and rendering care to patients who present to a hospital emergency department (ED) with emergent and non-emergent dental problems. Survey responses will be used to construct a Continuing Medical Education (CME) course focused on managing dental pain, traumatic dental injuries and dental infections. Continuing medical education credits will be awarded to course participants.

The survey consists of twenty-two questions (21) and is expected to take ten (10) minutes to complete.

This is an anonymous educational survey; we will not collect your name or any identifying information about you. You will not be linked to your survey responses. **Thank you for your participation!**

Please click on the link below to complete the survey:

https://umaryland.az1.qualtrics.com/jfe/form/SV_ehwdu4cwrC7N7WC

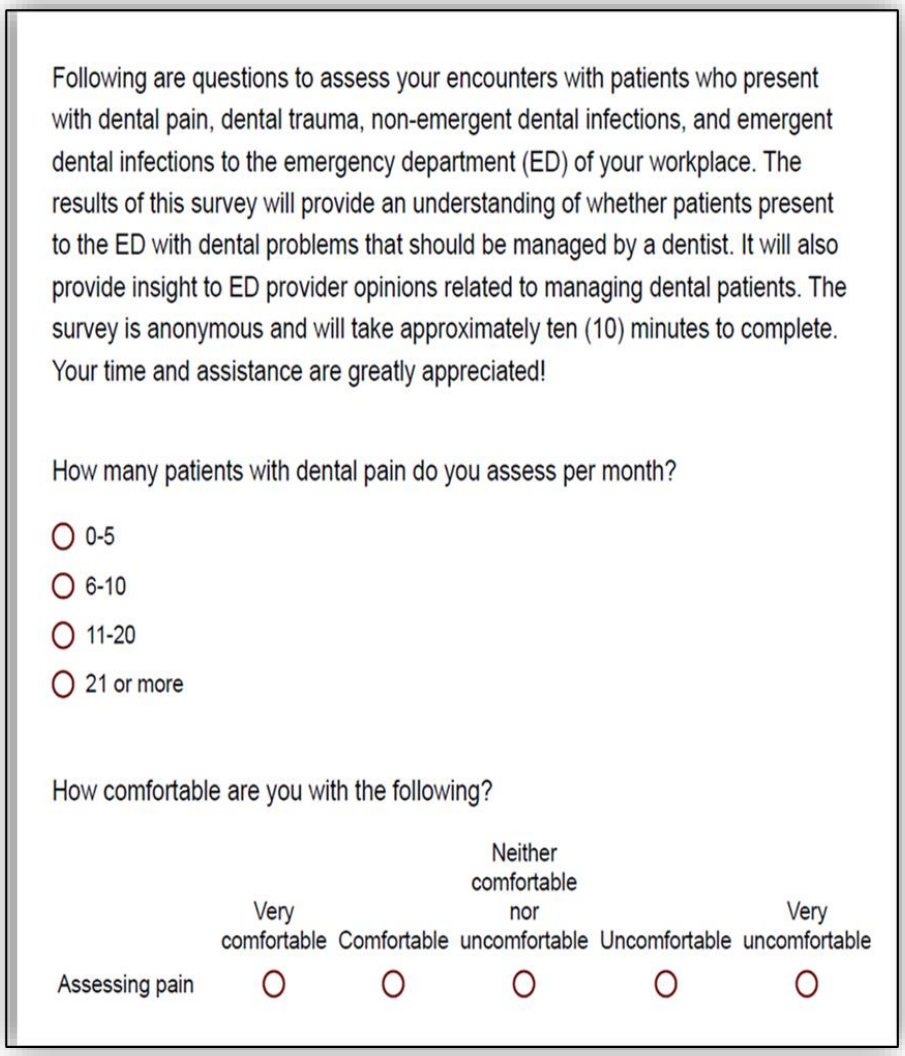
If approved by the ACEP board members of the state chapter, the introductory email was shared with members via a monthly newsletter or sent directly to potential survey participants.

Eligible Participants

1. Members of ACEP (medical student, resident physician, fellowship physician, emergency medicine physician)
2. Must practice emergency medicine in the continental United States and its territories
3. English is the primary language spoken
4. Must be at least 18 years of age or older

The 20-question survey was created in Qualtrics™ (Provo, Utah) with the assistance of NL. The survey questions, as seen by the participants in Qualtrics™, are included in Figures 2a-2j. A simplified list of the survey questions is in Figure 3.

Figure 2a: Survey questions 1 and 2 as viewed in Qualtrics™ by the survey



Following are questions to assess your encounters with patients who present with dental pain, dental trauma, non-emergent dental infections, and emergent dental infections to the emergency department (ED) of your workplace. The results of this survey will provide an understanding of whether patients present to the ED with dental problems that should be managed by a dentist. It will also provide insight to ED provider opinions related to managing dental patients. The survey is anonymous and will take approximately ten (10) minutes to complete. Your time and assistance are greatly appreciated!

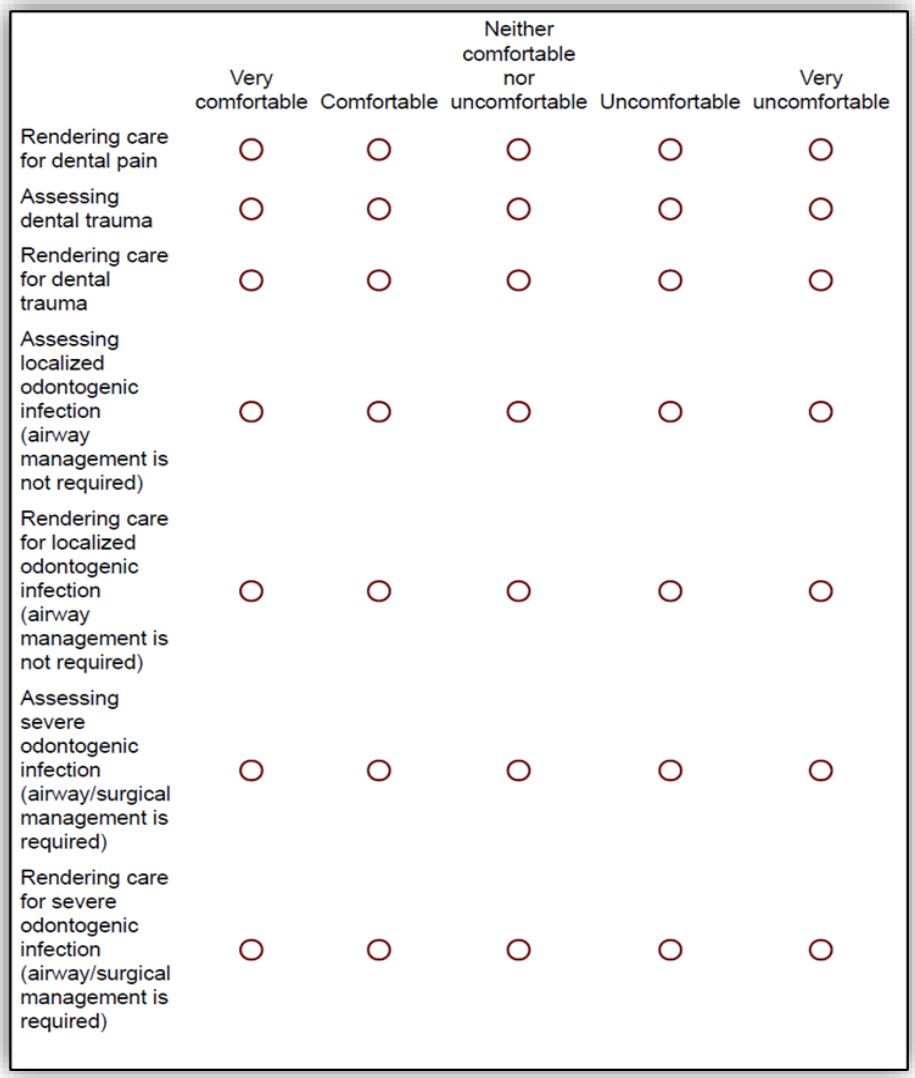
How many patients with dental pain do you assess per month?

- ○ 0-5
- ○ 6-10
- ○ 11-20
- ○ 21 or more

How comfortable are you with the following?

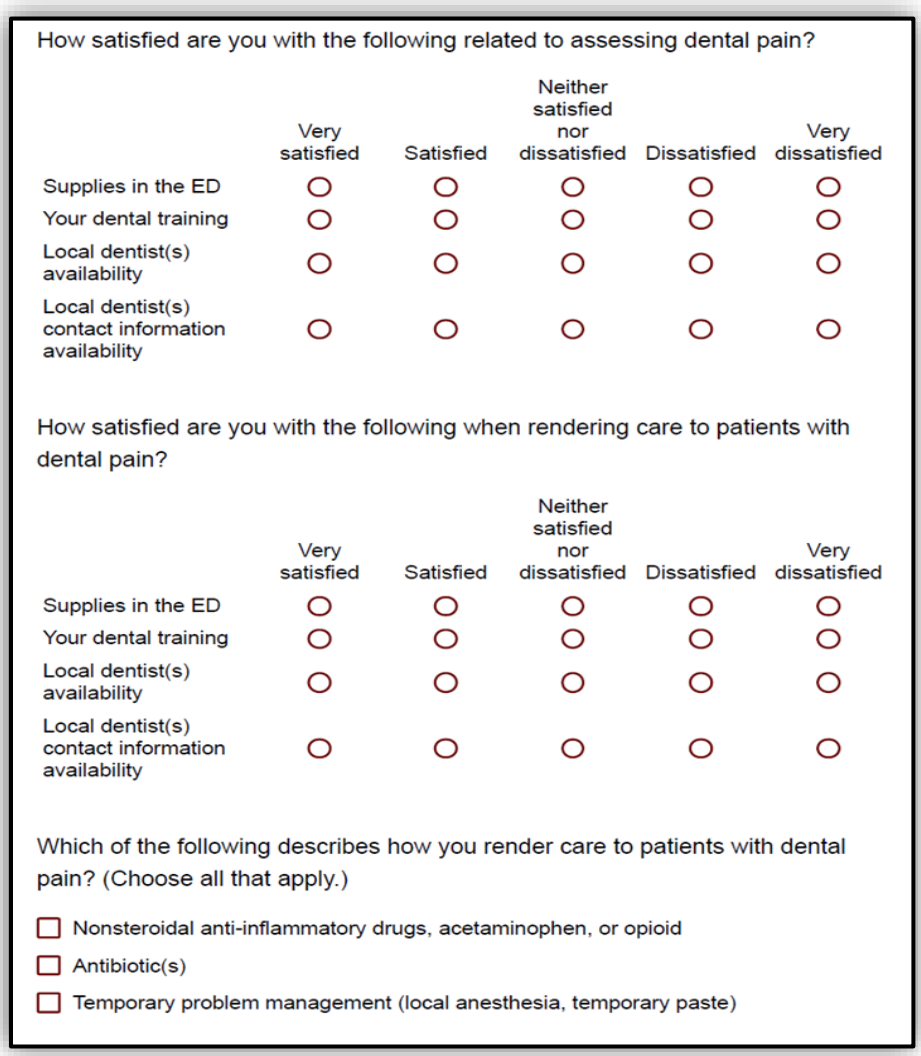
	Very comfortable	Comfortable	Neither comfortable nor uncomfortable	Uncomfortable	Very uncomfortable
Assessing pain	○	○	○	○	○

Figure 2b: Survey question 2 as viewed in Qualtrics™ by the survey participant.



	Very comfortable	Comfortable	Neither comfortable nor uncomfortable	Uncomfortable	Very uncomfortable
Rendering care for dental pain	○	○	○	○	○
Assessing dental trauma	○	○	○	○	○
Rendering care for dental trauma	○	○	○	○	○
Assessing localized odontogenic infection (airway management is not required)	○	○	○	○	○
Rendering care for localized odontogenic infection (airway management is not required)	○	○	○	○	○
Assessing severe odontogenic infection (airway/surgical management is required)	○	○	○	○	○
Rendering care for severe odontogenic infection (airway/surgical management is required)	○	○	○	○	○

Figure 2c: Survey questions 3-5 as viewed in Qualtrics™ by the survey participant.



How satisfied are you with the following related to assessing dental pain?

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
Supplies in the ED	○	○	○	○	○
Your dental training	○	○	○	○	○
Local dentist(s) availability	○	○	○	○	○
Local dentist(s) contact information availability	○	○	○	○	○

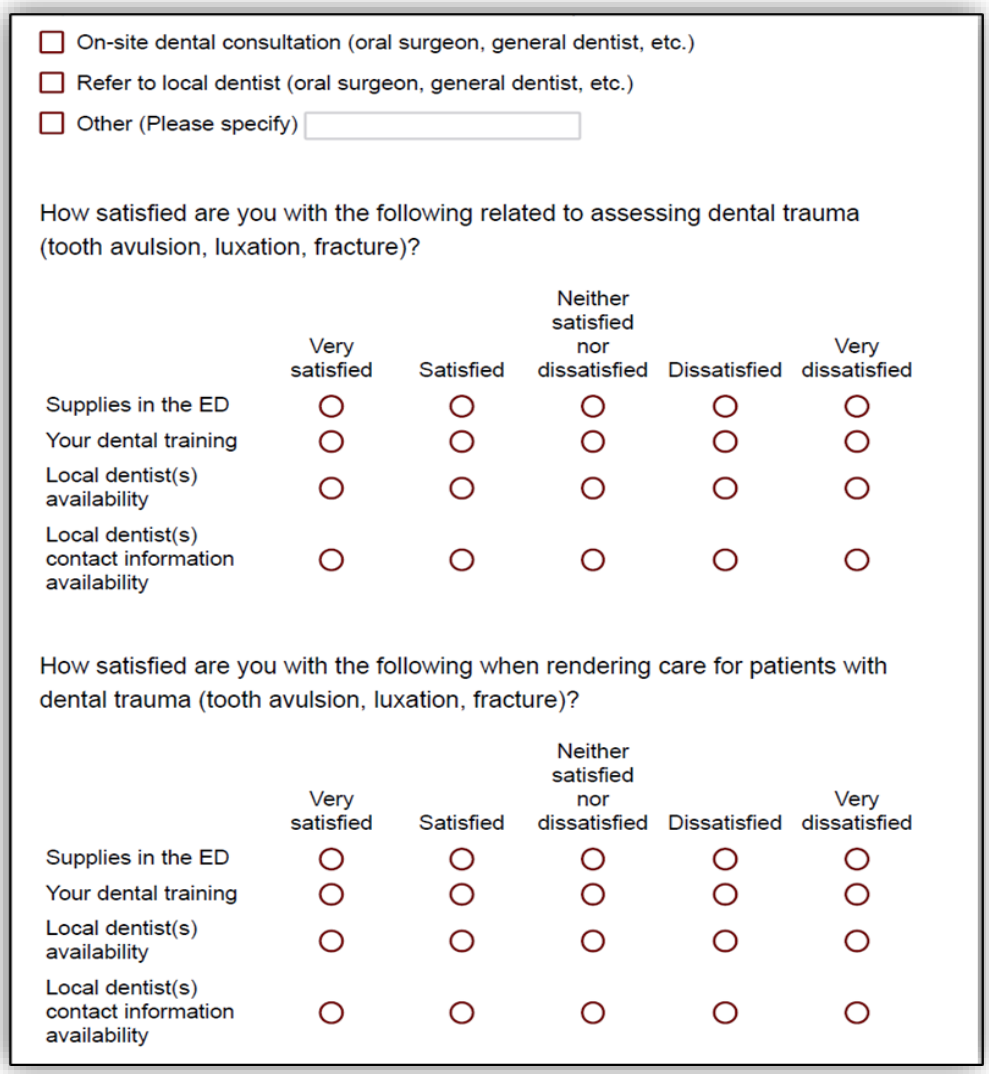
How satisfied are you with the following when rendering care to patients with dental pain?

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
Supplies in the ED	○	○	○	○	○
Your dental training	○	○	○	○	○
Local dentist(s) availability	○	○	○	○	○
Local dentist(s) contact information availability	○	○	○	○	○

Which of the following describes how you render care to patients with dental pain? (Choose all that apply.)

- ☐ Nonsteroidal anti-inflammatory drugs, acetaminophen, or opioid
- ☐ Antibiotic(s)
- ☐ Temporary problem management (local anesthesia, temporary paste)

Figure 2d: Survey questions 6 and 7 as viewed in Qualtrics™ by the survey participant.



- ☐ On-site dental consultation (oral surgeon, general dentist, etc.)
- ☐ Refer to local dentist (oral surgeon, general dentist, etc.)
- ☐ Other (Please specify) _____

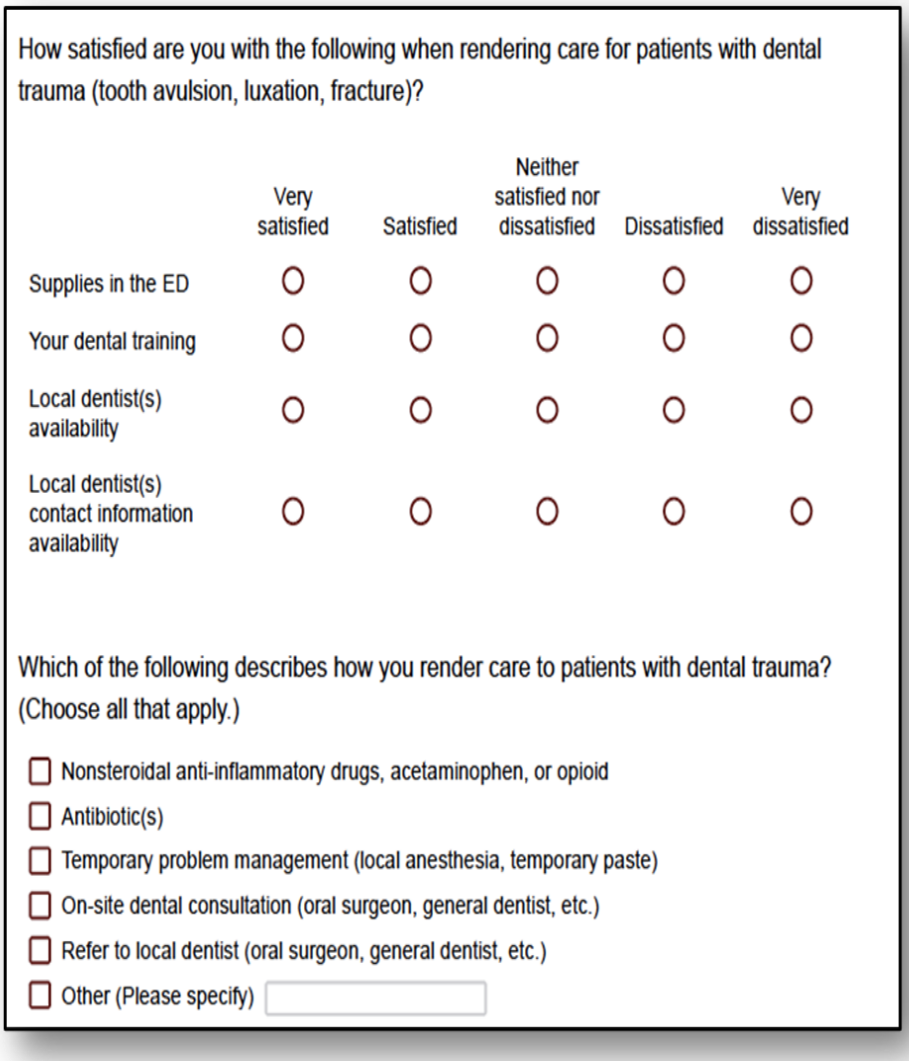
How satisfied are you with the following related to assessing dental trauma (tooth avulsion, luxation, fracture)?

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
Supplies in the ED	○	○	○	○	○
Your dental training	○	○	○	○	○
Local dentist(s) availability	○	○	○	○	○
Local dentist(s) contact information availability	○	○	○	○	○

How satisfied are you with the following when rendering care for patients with dental trauma (tooth avulsion, luxation, fracture)?

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
Supplies in the ED	○	○	○	○	○
Your dental training	○	○	○	○	○
Local dentist(s) availability	○	○	○	○	○
Local dentist(s) contact information availability	○	○	○	○	○

Figure 2e: Survey question 8 as viewed in Qualtrics™ by the survey participant.



How satisfied are you with the following when rendering care for patients with dental trauma (tooth avulsion, luxation, fracture)?

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
Supplies in the ED	○	○	○	○	○
Your dental training	○	○	○	○	○
Local dentist(s) availability	○	○	○	○	○
Local dentist(s) contact information availability	○	○	○	○	○

Which of the following describes how you render care to patients with dental trauma? (Choose all that apply.)

- ☐ Nonsteroidal anti-inflammatory drugs, acetaminophen, or opioid
- ☐ Antibiotic(s)
- ☐ Temporary problem management (local anesthesia, temporary paste)
- ☐ On-site dental consultation (oral surgeon, general dentist, etc.)
- ☐ Refer to local dentist (oral surgeon, general dentist, etc.)
- ☐ Other (Please specify) _____

Figure 2f: Survey question 9 as viewed in Qualtrics™ by the survey participant.

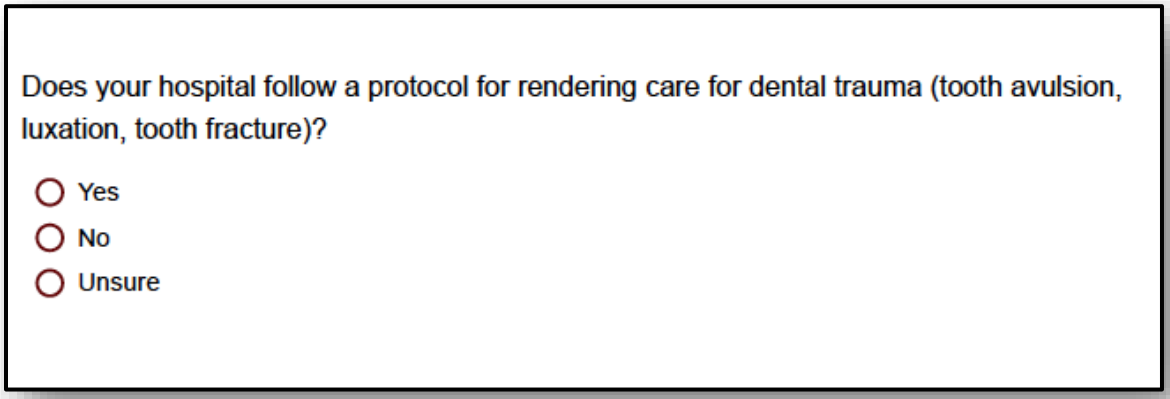
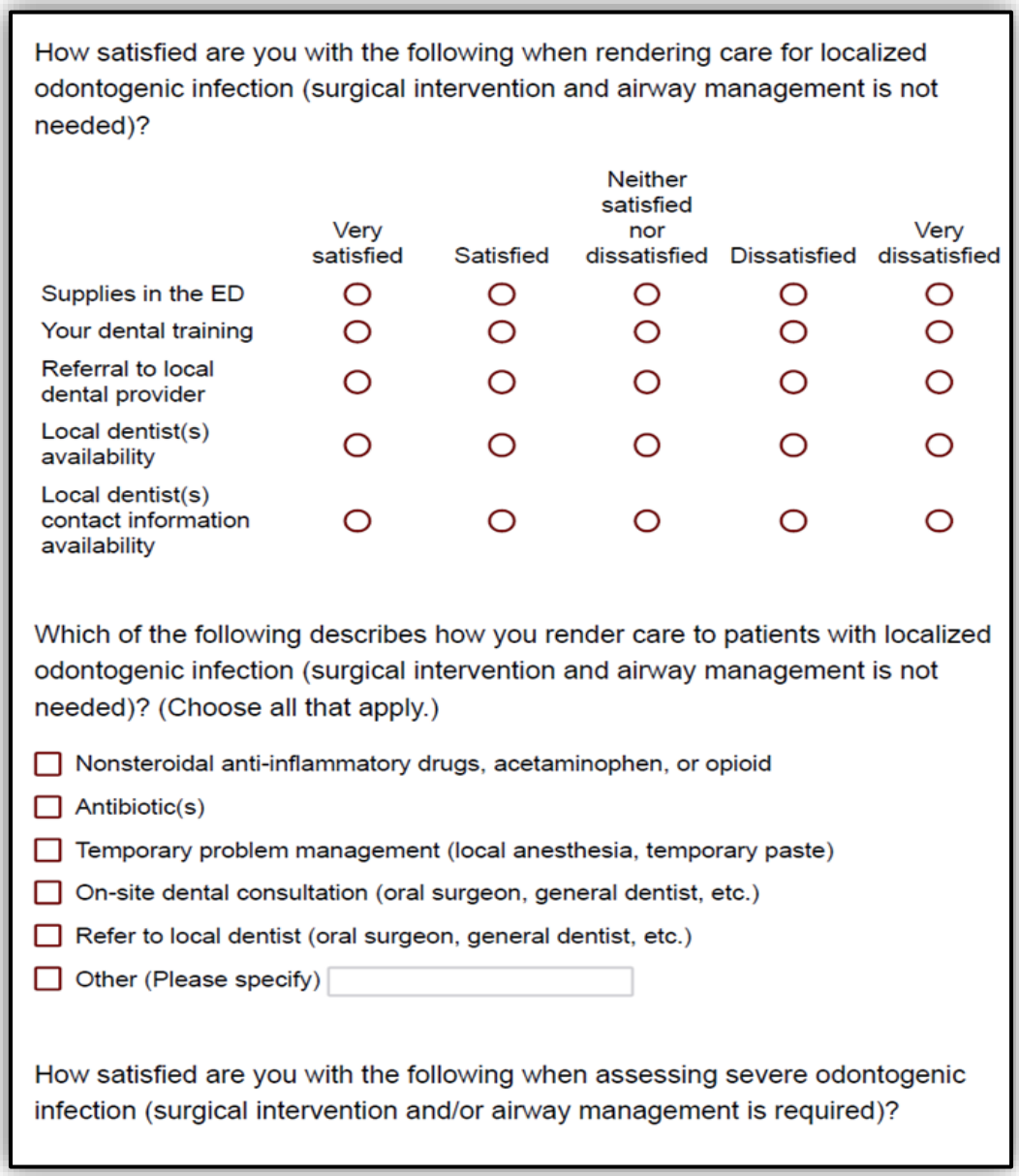


Figure 2g: Survey questions 10-12 as viewed in Qualtrics™ by the survey participant.



How satisfied are you with the following when rendering care for localized odontogenic infection (surgical intervention and airway management is not needed)?

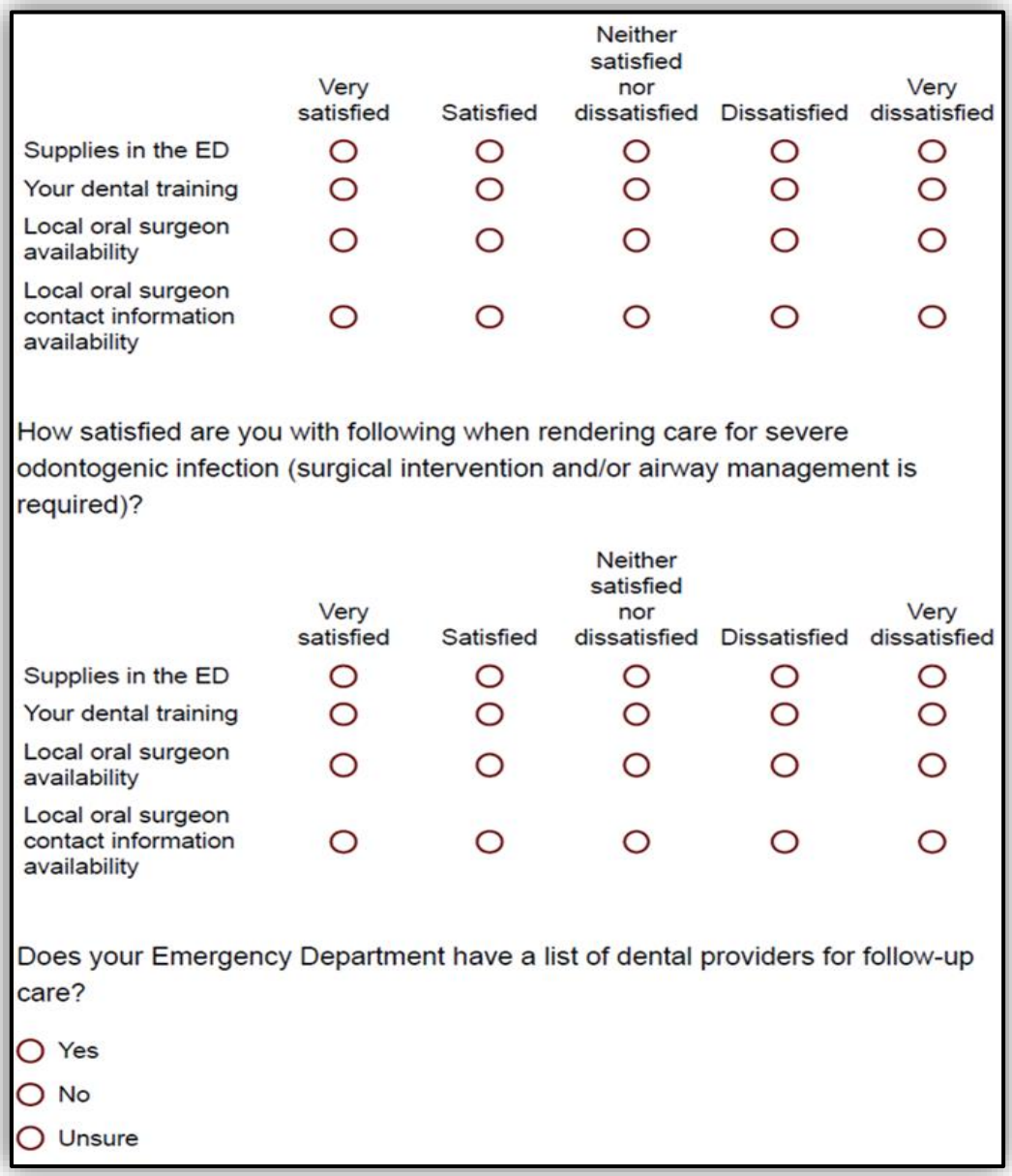
	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
Supplies in the ED	○	○	○	○	○
Your dental training	○	○	○	○	○
Referral to local dental provider	○	○	○	○	○
Local dentist(s) availability	○	○	○	○	○
Local dentist(s) contact information availability	○	○	○	○	○

Which of the following describes how you render care to patients with localized odontogenic infection (surgical intervention and airway management is not needed)? (Choose all that apply.)

- ☐ Nonsteroidal anti-inflammatory drugs, acetaminophen, or opioid
- ☐ Antibiotic(s)
- ☐ Temporary problem management (local anesthesia, temporary paste)
- ☐ On-site dental consultation (oral surgeon, general dentist, etc.)
- ☐ Refer to local dentist (oral surgeon, general dentist, etc.)
- ☐ Other (Please specify)

How satisfied are you with the following when assessing severe odontogenic infection (surgical intervention and/or airway management is required)?

Figure 2h: Survey questions 13 and 14 as viewed in Qualtrics™ by the survey participant.



	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
Supplies in the ED	○	○	○	○	○
Your dental training	○	○	○	○	○
Local oral surgeon availability	○	○	○	○	○
Local oral surgeon contact information availability	○	○	○	○	○

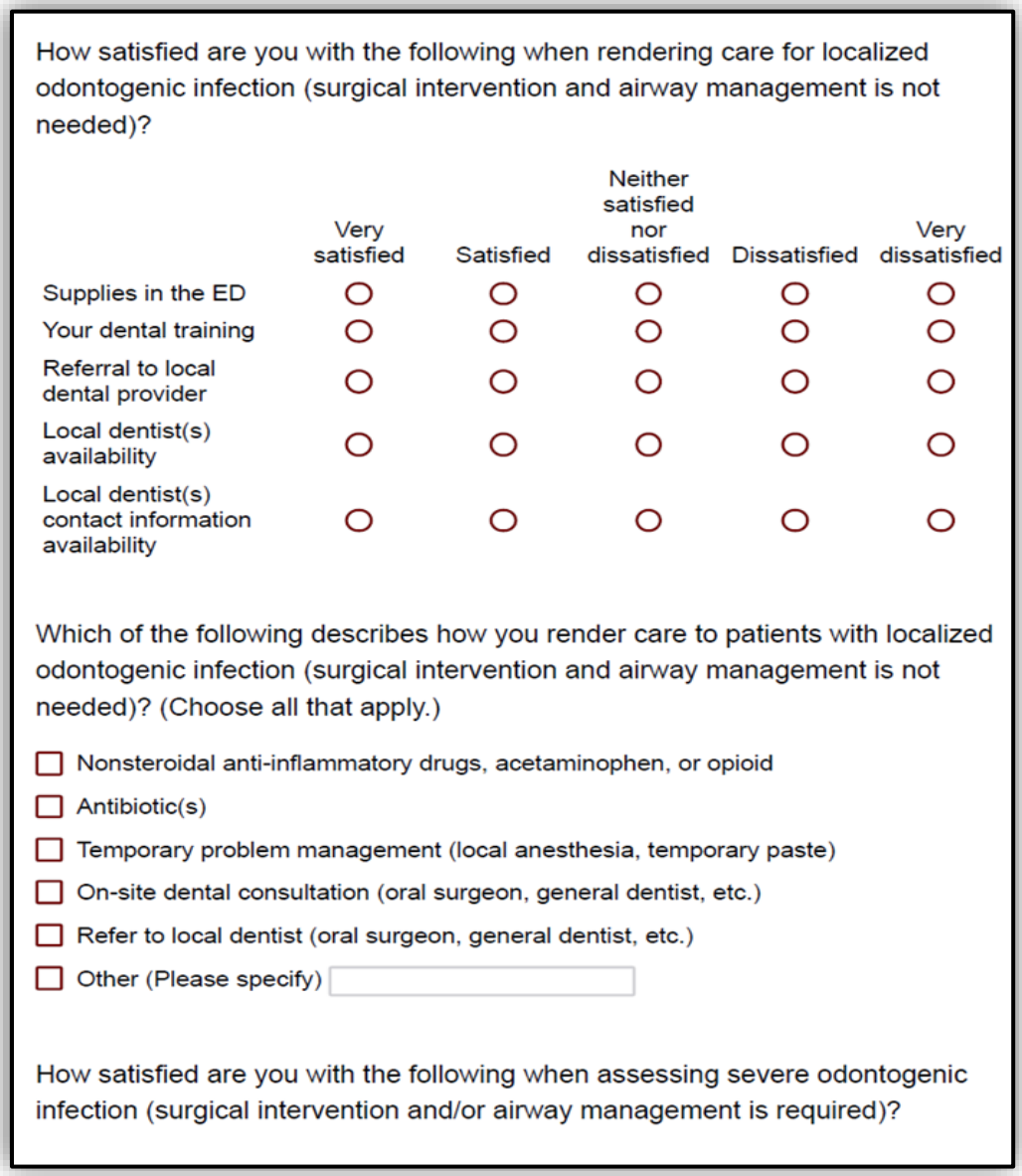
How satisfied are you with following when rendering care for severe odontogenic infection (surgical intervention and/or airway management is required)?

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
Supplies in the ED	○	○	○	○	○
Your dental training	○	○	○	○	○
Local oral surgeon availability	○	○	○	○	○
Local oral surgeon contact information availability	○	○	○	○	○

Does your Emergency Department have a list of dental providers for follow-up care?

○ Yes
○ No
○ Unsure

Figure 2i: Survey questions 15-18 as viewed in Qualtrics™ by the survey participant.



How satisfied are you with the following when rendering care for localized odontogenic infection (surgical intervention and airway management is not needed)?

	Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
Supplies in the ED	○	○	○	○	○
Your dental training	○	○	○	○	○
Referral to local dental provider	○	○	○	○	○
Local dentist(s) availability	○	○	○	○	○
Local dentist(s) contact information availability	○	○	○	○	○

Which of the following describes how you render care to patients with localized odontogenic infection (surgical intervention and airway management is not needed)? (Choose all that apply.)

- ☐ Nonsteroidal anti-inflammatory drugs, acetaminophen, or opioid
- ☐ Antibiotic(s)
- ☐ Temporary problem management (local anesthesia, temporary paste)
- ☐ On-site dental consultation (oral surgeon, general dentist, etc.)
- ☐ Refer to local dentist (oral surgeon, general dentist, etc.)
- ☐ Other (Please specify) _____

How satisfied are you with the following when assessing severe odontogenic infection (surgical intervention and/or airway management is required)?

Figure 2j: Survey questions 19 and 20 as viewed in Qualtrics™ by the survey participant.

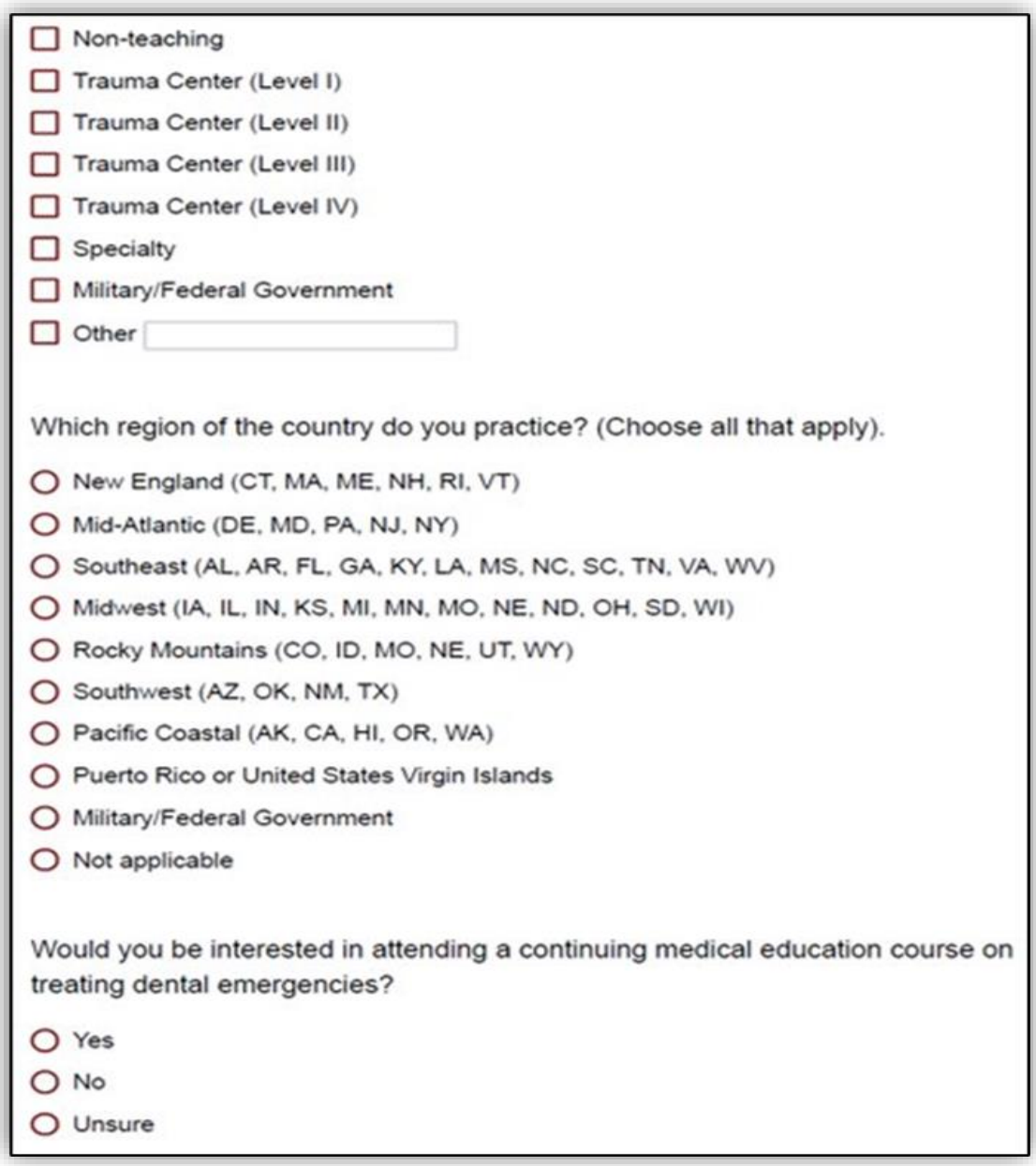


Figure 3. Condensed list of survey questions.

Question 1. How many patients with dental pain do you assess per month?
Question 2. How comfortable are you with the following?
Question 3. How satisfied are you with the following related to assessing dental pain?
Question 4. How satisfied are you with the following when rendering care to patients with dental pain?
Question 5. Which of the following describes how you render care to patients in dental pain?
Question 6. How satisfied are you with the following related to assessing dental trauma (tooth avulsion, luxation, fracture)?
Question 7. How satisfied are you with the following when rendering care for patients with dental trauma (tooth, avulsion, luxation, fracture)?
Question 8. Which of the following describes how you render care to patients with dental trauma)?
Question 9. Does your hospital follow a protocol for rendering care for dental trauma (tooth avulsion, luxation, fracture)?
Question 10. How satisfied are you with the following when rendering care for localized odontogenic infection (surgical intervention and airway management is not needed)?
Question 11. How satisfied are you with the following when rendering care to localized odontogenic infection (surgical intervention airway management not needed)?
Question 12. Which of the following describes how you render care to patients with localized odontogenic infection (surgical intervention and airway management is not needed)?
Question 13. How satisfied are you with the following when assessing severe odontogenic infection (surgical intervention and/ or airway management is required)?
Question 14. How satisfied are you with the following when rendering care for severe odontogenic infection (surgical intervention and/ or airway management is required)?
Question 15. Does your Emergency Department have a list of dental providers for follow-up care?
Question 16. Which of the following describes your dentistry training?
Question 17. How many years have you been practicing Emergency medicine?
Question 18. Which of the following best describes your primary hospital setting?
Question 19. Which region of the country do you practice?
Question 20. Would you be interested in attending a continuing medical education course on treating dental emergencies?

The survey went live in February 2023, was submitted by DG to the Maryland ACEP, and posted in their newsletter in March 2023. In June 2023, the survey was re-submitted to the Maryland ACEP to increase the response rate. From July 2023 to September 2023, no new responses were recorded. The survey was made available to all ACEP state chapters in the USA in September 2023. The executive director of each ACEP state chapter was contacted via email to gauge their interest in this project. Some state chapters did not participate for various reasons, and others were happy to participate. Since ACEP is a large organization, sending the survey to individual ED physicians was impossible. The following ACEP state chapters participated: Utah, Arizona, Ohio, New Mexico, Florida, Delaware, New Hampshire, Nebraska, and Georgia. The survey was closed in December 2023.

Statistical Analysis

The chi-square test for comfort level in rendering care to dental trauma using two levels: comfortable vs. not comfortable and satisfaction with dental training with a $p=0.002$ was applied. Fisher's exact test was used due to small and zero frequencies, with a p-value <0.05 to address the null hypotheses. Univariate regression analysis predicted comfort level rendering care for dental trauma and dental training.

Results

The analytic data set collected survey data on 81 ED physicians, residents, and medical students. Fisher's exact test was used to determine if there were associations between assessing and rendering care for pain trauma and infection. **Table 1** displays the association between ED physician characteristics (years of practice, board certification status, and number of dental patients treated) and providing temporary pain management.

Only the number of practice years revealed significant differences (p=0.038). The probability that a respondent practicing less than ten years provided temporary pain management for dental pain is .79.

Table 1. Association between rendering care as temporary dental pain management and ED physician characteristics (p<0.05). *Indicates a significant difference

	TEMPORARY PAIN MANAGEMENT	RESPONDED AS NO	RESPONDED AS YES	P-VALUE
	N = 81	N = 30	N = 51	
YEARS OF PRACTICE (%)				**0.038***
<10	33 (41.2)	7 (23.3)	26 (53)	
10-20	28 (35)	13 (43.3)	15 (30)	
>20	19 (23.8)	10 (33.3)	9 (18)	
NA	1	0	1	
ACEP AFFILIATION (%)				**0.304**
BOARD ELIGIBLE	11 (13.6)	2 (6.7)	9 (17.6)	
BOARD CERTIFIED	63 (77.8)	26 (86.7)	37 (72.5)	
NA	7 (8.6)	2 (6.7)	5 (9.8)	
NUMBER OF PATIENTS TREATED (%)				**0.392**
0-5	30 (37)	9 (30)	21 (41.2)	
6-10	35 (43.2)	16 (53.3)	19 (37.3)	
10 OR MORE	16 (19.8)	5 (16.7)	11 (21.6)	

In contrast, the likelihood that a respondent did not offer temporary pain management is .21. **Table 2** reports that the only ED physician characteristic associated with rendering care for local odontogenic infection is years of practice (p=0.017). The probability of a respondent with less than ten years of practice experience providing temporary pain management for local dental infections is .70.

Table 2. Association between rendering care for local odontogenic infection and ED physician characteristics (p<0.05). *Indicates a significant difference.

	TEMPORARY PAIN MANAGEMENT	RESPONDED AS NO	RESPONDED AS YES	P-VALUE
	N = 81	N = 39	N = 42	
YEARS OF PRACTICE (%)				**0.017***
<10	33 (41.2)	10 (25.6)	23 (56.1)	
10-20	28 (35)	18 (46.2)	10 (24.4)	
>20	19 (23.8)	11 (28.2)	8 (19.5)	
NA	1	0	1	
ACEP AFFILIATION (%)				**0.158**
BOARD ELIGIBLE	11 (13.6)	3 (7.7)	8 (19)	
BOARD CERTIFIED	63 (77.8)	34 (87.2)	29 (69)	
NA	7 (8.6)	2 (5.1)	5 (11.9)	
NUMBER OF PATIENTS TREATED (%)				**0.635**
0-5	30 (37)	13 (33.3)	17 (40.5)	
6-10	35 (43.2)	19 (48.7)	16 (38.1)	
10 OR MORE	16 (19.8)	7 (17.9)	9 (21.4)	

In **Table 3**, Regarding respondent comfort level with severe odontogenic infection, there was a significant difference (p<0.03) between those comfortable and uncomfortable rendering care. The probability that a respondent was uncomfortable rendering care was .45, whereas the likelihood of being comfortable was .33.

Table 3. Comfort level with severe odontogenic infection (p<0.05). *Indicates a significant difference

	ALL PROVIDERS	COMFORTABLE	NOT COMFORTABLE	NEITHER/NOR	P-VALUE
	N = 81	N = 58	N = 9	N = 14	
COMFORT LEVEL ASSESSING SEVERE DENTAL INFECTION (%)					
VERY COMFORTABLE	1 (1.2)	0 (0)	1 (11.1)	0 (0)	**<0.057**
COMFORTABLE	3 (3.7)	3 (5.2)	0 (0)	0 (0)	
NEITHER/NOR	23 (28.4)	16 (27.6)	2 (22.2)	5 (35.7)	
UNCOMFORTABLE	21 (25.9)	19 (32.8)	0 (0)	2 (14.3)	
VERY UNCOMFORTABLE	26 (32.1)	17 (29.3)	3 (33.3)	5 (42.9)	
NO RESPONSE	7 (8.6)	3 (5.2)	3 (33.3)	1 (7.1)	
COMFORT LEVEL RENDERING CARE FOR SEVERE DENTAL INFECTION (%)					
VERY COMFORTABLE	2 (2.5)	2 (3.4)	0 (0)	0 (0)	**<0.03***
COMFORTABLE	25 (30.9)	19 (32.8)	1 (11.1)	5 (35.7)	
NEITHER/NOR	17 (21)	14 (24.1)	0 (0)	3 (21.4)	
UNCOMFORTABLE	23 (28.4)	18 (31)	2 (22.2)	3 (21.4)	
VERY UNCOMFORTABLE	14 (17.3)	5 (8.6)	6 (66.7)	3 (21.4)	

Table 4 demonstrates satisfaction with support for rendering care for severe odontogenic infection. Only two variables, satisfaction with supplies in the ED and the physician's dental training, were significant (p<0.001; p<0,003). Those comfortable rendering care had a probability of .60 being satisfied with supplies, while those uncomfortable rendering care had a probability of .67 being dissatisfied with supplies. Respondents who were uncomfortable rendering care also had a .78 probability of being dissatisfied with their dental training.

Table 4. Satisfaction with support for rendering care for severe odontogenic infection (p<0.05). *Indicates a significant difference

	ALL PROVIDERS	COMFORTABLE	NOT COMFORTABLE	NEITHER/NOR	P-VALUE
	N = 81	N = 58	N = 9	N = 14	
SATISFACTION WITH ED SUPPLIES (%)					**<0.001***
1-VERY SATISFIED	11 (13.6)	10 (17.2)	0 (0)	1 (7.1)	
2-SATISFIED	29 (35.8)	25 (43.1)	0 (0)	3 (28.6)	
3-NEITHER/NOR	18 (22.2)	12 (20.7)	3 (33.3)	3 (21.4)	
4-DISSATISFIED	14 (17.3)	8 (13.8)	1 (11.1)	5 (35.7)	
5-VERY DISSATISFIED	9 (11.1)	3 (5.2)	5 (55.6)	1 (7.1)	
SATISFACTION WITH DENTIST AVAILABILITY (%)					**0.413**
1-VERY SATISFIED	3 (3.7)	2 (3.4)	0 (0)	1 (7.1)	
2-SATISFIED	11 (13.6)	9 (15.5)	1 (11.1)	1 (7.1)	
3-NEITHER/NOR	11 (13.6)	9 (15.5)	1 (11.1)	1 (7.1)	
4-DISSATISFIED	28 (35.8)	23 (39.7)	1 (11.1)	5 (35.7)	
5-VERY DISSATISFIED	27 (33.3)	15 (25.9)	6 (66.7)	6 (42.9)	
SATISFACTION WITH DENTIST CONTACT INFO (%)					**0.513**
1-VERY SATISFIED	5 (6.2)	4 (6.9)	0 (0)	1 (7.1)	
2- SATISFIED	15 (18.5)	11 (19)	2 (22.2)	2 (14.3)	
3-NEITHER/NOR	16 (19.8)	12 (20.7)	0 (0)	4 (28.6)	
4-DISSATISFIED	18 (22.2)	15 (25.9)	1 (11.1)	2 (14.3)	
5-VERY DISSATISFIED	27 (33.3)	16 (27.6)	6 (66.7)	5 (35.7)	
SATISFACTION WITH DENTAL TRAINING (%)					**<0.003***
1-VERY SATISFIED	3 (3.7)	3 (5.2)	0 (0)	0 (0)	
2- SATISFIED	29 (35.8)	22 (37.9)	1 (11.1)	6 (42.9)	
3-NEITHER/NOR	19 (23.5)	15 (25.9)	1 (11.1)	3 (21.4)	
4-DISSATISFIED	20 (24.7)	16 (27.6)	1 (11.1)	3 (21.4)	

Significant differences were found in the respondent's comfort levels with managing dental trauma **(Table 5)**. Only 12.5% indicated being comfortable with assessing dental trauma ($p<0.001$), and 76% were uncomfortable rendering care for dental trauma. There was also a significant difference ($p=0.006$) between respondents who were satisfied with available supplies (37.5%) to treat dental trauma in the ED and those who were not satisfied (50%).

Table 5. Comfort level with dental trauma ($p<0.05$).
***Indicates a significant difference**

	ALL PROVIDERS	COMFORTABLE	NOT COMFORTABLE	NEITHER/NOR	P-VALUE
	N = 81	N = 32	N = 25	N = 24	
COMFORT LEVEL ASSESSING DENTAL TRAUMA (%)					
VERY COMFORTABLE	1 (1.2)	1 (3.1)	0 (0)	0 (0)	**<0.001***
COMFORTABLE	3 (3.7)	3 (9.4)	0 (0)	0 (0)	
NEITHER/NOR	23 (28.4)	17 (53.1)	2 (8)	4 (16.7)	
UNCOMFORTABLE	21 (25.9)	5 (15.6)	9 (36)	7 (29.2)	
VERY UNCOMFORTABLE	26 (32.1)	3 (9.4)	11 (44)	12 (50)	
NO RESPONSE	7 (8.6)	3 (9.4)	3 (12)	1 (4.2)	
COMFORT LEVEL RENDERING CARE FOR DENTAL TRAUMA (%)					
VERY COMFORTABLE	2 (2.5)	2 (6.2)	0 (0)	0 (0)	**<0.001***
COMFORTABLE	25 (30.9)	19 (59.4)	1 (4)	5 (20.8)	
NEITHER/NOR	17 (21)	4 (12.5)	5 (20)	8 (33.3)	
UNCOMFORTABLE	23 (28.4)	3 (9.4)	10 (40)	10 (41.7)	
VERY UNCOMFORTABLE	14 (17.3)	4 (12.5)	9 (36)	1 (4.2)	

Satisfaction with support for assessing dental trauma can only be associated with dental training (**Table 6**, $p<0.05$). Respondents who were not comfortable assessing dental trauma had a probability of .89 to be dissatisfied with their dental training. **Table 7** displays satisfaction levels with support for rendering care to dental trauma. Associations were found between satisfaction level and ED supplies ($p=0.006$) and dental training ($p<0.001$). Of those respondents who were comfortable with rendering care to dental trauma, 59.4% were satisfied with ED supplies, and 18.7% were dissatisfied. Respondents who were comfortable rendering care were also satisfied with their dental training (65.6%), although those who were uncomfortable had a .64 probability of also being dissatisfied with their dental training.

Table 6: Satisfaction with support for assessing dental trauma ($p<0.05$). *Indicates a significant difference

	ALL PROVIDERS	COMFORTABLE	NOT COMFORTABLE	NEITHER/NOR	P-VALUE
	N = 81	N = 56	N = 9	N = 16	
SATISFACTION WITH ED SUPPLIES (%)					**0.932**
1-VERY SATISFIED	11 (13.6)	9 (16.1)	1 (11.1)	1 (6.2)	
2-SATISFIED	29 (35.8)	21 (37.5)	3 (33.3)	5 (31.2)	
3-NEITHER/NOR	18 (22.2)	11 (19.6)	3(33.3)	4 (25)	
4-DISSATISFIED	14 (17.3)	10 (17.9)	1 (11.1)	3 (18.8)	
5-VERY DISSATISFIED	9 (11.1)	5 (8.9)	1 (11.1)	3 (18.8)	
SATISFACTION WITH DENTIST AVAILABILITY (%)					**0.376**
1-VERY SATISFIED	3 (3.7)	3 (5.4)	0 (0)	0 (0)	
2-SATISFIED	11 (13.6)	7 12.5)	3 (33.3)	1 (6.2)	

Table 6 continued

3-NEITHER/NOR	11 (13.6)	9 (16.1)	1 (11.1)	1 (6.2)	
4-DISSATISFIED	28 (35.8)	17 (30.4)	2 (22.2)	10 (62.5)	
5-VERY DISSATISFIED	27 (33.3)	20 (35.7)	3 (33.3)	4 (25)	
SATISFACTION WITH DENTIST CONTACT INFO (%)					**0.679**
1-VERY SATISFIED	5 (6.2)	3 (5.4)	1 (11.1)	1 (6.2)	
2- SATISFIED	15 (18.5)	12 (21.4)	2(22.2)	1 (6.2)	
3-NEITHER/NOR	16 (19.8)	11 (19.6)	1 (11.1)	4 (25)	
4-DISSATISFIED	18 (22.2)	10 (17.9)	2 (22.2)	6 (37.5)	
5-VERY DISSATISFIED	27 (33.3)	20 (35.7)	3 (33.3)	4 (25)	
SATISFACTION WITH DENTAL TRAINING (%)					**<0.001***
1-VERY SATISFIED	3 (3.7)	3 (5.4)	0 (0)	0 (0)	
2- SATISFIED	29 (35.8)	28 (50)	0 (0)	1 (6.2)	
3-NEITHER/NOR	19 (23.5)	13 (23.2)	1 (11.1)	5 (31.2)	
4-DISSATISFIED	20 (24.7)	8 (14.3)	5 (55.6)	7 (43.8)	
5-VERY DISSATISFIED	10 (12.3)	4 (7.1)	3 (33.3)	3 (18.8)	

Table 7: Satisfaction level with support for rendering care to dental trauma (p<0.05). *Indicates a significant difference

	ALL PROVIDERS	COMFORTABLE	NOT COMFORTABLE	NEITHER/NOR	P-VALUE
	N = 81	N = 32	N = 25	N = 24	
SATISFACTION WITH ED SUPPLIES (%)					**0.006***
1-VERY SATISFIED	11 (13.6)	5 (15.6)	5 (2)	1 (4.2)	
2-SATISFIED	29 (35.8)	14 (43.8)	7 (28)	8 (33.3)	
3-NEITHER/NOR	18 (22.2)	7 (21.9)	8 (32)	3 (12.5)	
4-DISSATISFIED	14 (17.3)	1 (3.1)	2 (8)	11 (45.8)	
5-VERY DISSATISFIED	9 (11.1)	5 (15.6)	3 (12)	1 (4.2)	
SATISFACTION WITH DENTIST AVAILABILITY (%)					**0.776**
1-VERY SATISFIED	3 (3.7)	2 (6.2)	1 (4)	0 (0)	
2-SATISFIED	11 (13.6)	5 (15.6)	4 (16)	2 (8.3	
3-NEITHER/NOR	11 (13.6)	3 (9.4)	2 (8)	6 (25)	
4-DISSATISFIED	29 (35.8)	12 (37.5)	9 (36)	8 (33.3)	
5-VERY DISSATISFIED	27 (33.3)	1 (31.2)	9 (36)	8 (33.3)	
SATISFACTION WITH DENTIST CONTACT INFO (%)					**0.071**
1-VERY SATISFIED	5 (6.2)	2 (6.2)	3 (12)	0 (0)	
2- SATISFIED	15 (18.5)	7 (21.9)	3 (12)	5 (2.8)	
3-NEITHER/NOR	16 (19.8)	6 (18.8)	1 (4)	9 (37.5)	
4-DISSATISFIED	18 (22.2)	6 (18.8)	9 (36)	3 (12.5)	
5-VERY DISSATISFIED	27 (33.3)	11 (34.4)	9 (36)	7 (29.2)	

Table 7 continued

SATISFACTION WITH DENTAL TRAINING (%)					**<0.001***
1-VERY SATISFIED	3 (3.7)	1 (3.1)	2 (8)	0 (0)	
2- SATISFIED	29 (35.8)	20 (62.5)	3 (12)	6 (25)	
3- NEITHER/NOR	19 (23.5)	6 (18.8)	4 (16)	9 (37.5)	
4- DISSATISFIED	20 (24.7)	1 (3.1)	11 (44)	8 (33.3)	
5-VERY DISSATISFIED	10 (12.3)	4 (12.5)	5 (20)	1 (4.2)	

Table 8 indicates that of all the parameters considered to affect comfort level in assessing dental trauma, there was only an association with the years of practice experience (p=0.011). Respondents with ten or more years of experience comprised 69.7% of those who reported being comfortable with assessing dental trauma. In contrast, those with less than ten years of experience comprised 77.8% of those who were not comfortable assessing dental trauma. A significant difference was found in the comfort level of rendering care for dental trauma between ED physicians who were satisfied with their dental training and those who were not satisfied (**Table 9,** p=0.001). Board certification status was the only ED physician characteristic that was shown to have an association with the perceived ability to render care for dental trauma (p=0.031). Of the 57% of respondents referred to a dentist for managing dental trauma, 69.6% were board-certified **(Table 10)**. The remaining contingency tables and other statistical analyses, which revealed no significant findings, are provided as a courtesy at the end of this paper as Appendix A.

Table 8: Association of comfort level in assessing dental trauma and other parameters (p<0.05). *Indicates a significant difference

	ALL PROVIDERS	COMFORTABLE	NOT COMFORTABLE	NEITHER/NOR	P-VALUE
	N = 81	N = 56	N = 9	N = 16	
YEARS OF PRACTICE (%)					**0.011***
NO RESPONSE	1 (1.2)	0 (0)	0 (0)	1 (6.2)	
<10	33 (40.7)	17 (30.4)	7 (77.8)	9 (56.2)	
10 – 20	28 (34.6)	22 (39.3)	1 (11.1)	5 (31.2)	
>20	19 (23.5)	17 (30.4)	1 (11.1)	1 (6.2)	
ACEP AFFILIATION (%)					**0.206**
BOARD ELIGIBLE	11 (13.6)	7 (12.5)	3 (33.3)	1 (6/2)	
BOARD CERTIFIED	63 (77.8)	45 (80.4)	6(66.7)	12 (75)	
NA	7 (8.6)	4 (7.1)	0 (0)	3 (18.8)	
TEACHING HOSPITAL (%)					**0.889**
NO	43 (53.1)	30 (53.6)	4 (44.4)	9 (56.2)	
YES	38 (46.9)	26 (46.4)	5 (55.6)	7 (43.8)	
LEVEL 1 TRAUMA (%)					**0.616**
NO	55 (67.9)	38 (67.9)	5 (55.6)	12 (75)	
YES	26 (32.1)	18 (32.1)	4 (44.4)	4 (25)	
LEVEL II TRAUMA (%)					**0.704**
NO	73 (90.1)	5 (89.3)	9 (100)	14 (87.5)	
YES	8 (9.9)	6 (10.7)	0 (0)	12 (12.5)	
LEVEL III TRAUMA (%)					**0.704**
NO	73 (90.1)	5 (89.3)	9 (100)	14 (87.5)	
YES	8 (9.9)	6 (10.7)	0 (0)	12 (12.5)	
LEVEL IV TRAUMA (%)					**0.454**
NO	76 (93.8)	53 (94.6)	9 (100)	14 (87.5)	
YES	5 (6.2)	3 (5.4)	0 (0)	2 (12.5)	

Table 9. Logistic Regression Model: comfort level in rendering care for dental trauma (p<0.05). *Indicates a significant difference

	Odds Ratio	95% C.I.	P-value
Not satisfied vs. satisfied with dental training	10.29	[2.534, 41.751]	0.001*
Neither/Nor vs. satisfied with dental training	3.21	[0.663, 15.578]	0.15

Table 10. Association between rendering care for dental trauma and ED physician characteristics (p<0.05). *Indicates a significant difference

	REFER TO DENTIST	RESPONDED AS NO	RESPONDED AS YES	P-VALUE
	N = 81	N = 35	N = 46	
YEARS OF PRACTICE (%)				**0.958**
<10	33 (41.2)	14 (40)	19 (42.2)	
10-20	28 (35)	13 (37.1)	15 (33.3)	
>20	19 (23.8)	8 (22.9)	11 (24.4)	
NA	1	0	1	
ACEP AFFILIATION (%)				**0.031***
BOARD ELIGIBLE	11 (13.6)	4 (11.4)	7 (15.2)	
BOARD CERTIFIED	63 (77.8)	31 (88.6)	32 (69.6)	
NA	7 (8.6)	0 (0)	7 (15.2)	
NUMBER OF PATIENTS TREATED (%)				**0.089**
0-5	30 (37)	9 (25.7)	21 (45.7)	
6-10	35 (43.2)	2 (57.1)	15 (32.6)	
10 OR MORE	16 (19.8)	6 (17.1)	10 (21.7)	

Discussion

This survey evaluated physicians, resident members, and medical students of ACEP and their comfort level when assessing and rendering care for pain, infection, and trauma. When this study was designed, a nationwide distribution process was investigated before the survey questions were written. The ACEP organization actively distributed surveys. It was planned that DG, an ACEP member, would be the study contact person for access to the ACEP distribution of the surveys. Unfortunately, when the survey was ready for distribution, ACEP administrators informed CJ that the activity was paused until further notice. Ultimately, due to budget constraints, ACEP ceased to act as a conduit for survey distribution, and CJ was required to seek alternate avenues for delivery. This task proved tedious and inefficient, resulting in much more limited dissemination than initially planned.

The software system Qualtrics™ was used to input survey questions. Identifying data for each provider was confidential; however, the IP addresses were recorded. Qualtrics™ records a survey response even if the survey is opened and not completed. In this study, 234 responses were recorded upon the survey closure. Upon manually reviewing each response and placing the data into an Excel file, 136 provider responses were counted. After further analysis, only 81 complete surveys were available for statistical analysis. Reasons for the difference in surveys opened versus surveys completed include potential respondents changing their mind about participating, opening out of curiosity only, then closing, not completing the survey due to time constraints, or not completing the survey because they viewed it as too cumbersome. It is also possible that some initial survey openings were later re-opened and completed. With the information gained in this survey regarding dissatisfaction with dental training, ED supplies, and comfort level managing

severe infection and dental trauma, future studies can be designed with targeted questions and a simplified survey design. No associations were found with demographics in this study. This may be related to a small sample size, uneven distribution, or an indication that no such relationships exist. Comfort level was assessed based on four variables: very comfortable, comfortable, neither/nor, very uncomfortable, and very uncomfortable. Due to a low response rate, very comfortable and comfortable responses were pooled together, and very uncomfortable and uncomfortable responses were pooled together into comfortable and not comfortable groups, respectively.

When assessing and rendering care for dental trauma, the ED physician was uncomfortable, coinciding with their dental training. This result is similar to the findings of Abu Dawoud et al., who surveyed physicians who did not know how to manage TDIs. A Canadian emergency clinic surveyed physicians managing TDIs weekly, but self-reported confidence levels were as low as 7%.[89] When rendering care for severe odontogenic infections (airway management needed), 67% of physicians were dissatisfied with their ED supplies and dental training (Table 4).

Supplies, dental training, and access to a dentist are related to the comfort level in assessing and rendering care for dental trauma. This study found an association between the ED physician's dental training and their comfort level. Logistic regression analysis (Table 9) showed ED physicians were ten times more comfortable managing dental trauma if they were satisfied with their dental training. Like this study, the Canadian survey concluded that training in managing TDI was most important, along with a step-by-step pathway for treatment.[89]

Age was related to the comfort level in assessing and rendering care for dental

conditions; in Table 8, years of practice influenced comfort level in assessing dental trauma. When physicians assessing dental trauma had ten years or more of practice experience (69.7%), they were more comfortable than physicians with less than ten years of practice experience (30.4%). This was also true of the Canadian survey, which found that years in practice brought more comfort in managing dental trauma.[89] Although more years in practice seem to suggest more comfort, it does not mean that patients are being managed effectively

Being board-certified was significant when rendering care for dental trauma by referring to a dentist (Table 10). There was no response frequency for Question #9 (Figure 3), but based on the responses in Qualtrics, 76% of providers did not have a protocol for rendering trauma in their hospital. Familiarization with the International Association of Dental Traumatology or American Association of Endodontists guidelines as a start would benefit ED physicians.[90-92]

Table 1 refers to Question #5 (Figure 3). There was an association between the years in practice and rendering care for dental pain with temporary pain management (local anesthesia, temporary paste) p=0.038. A patient presenting to the ED with dental pain is typically due to pulpitis, often without swelling. An antibiotic is not indicated in the absence of systemic infection or an inability to establish drainage.[90] Rendering care with analgesics, temporary pain management, and referring to the dentist's office for definitive treatment is most appropriate.

Table 2 refers to Question #12 (Figure 3). There was an association between the years in practice and rendering care for local odontogenic infection with temporary pain management (local anesthesia temporary paste). A patient presenting to the ED with an

odontogenic infection can be attributed to a necrotic pulp with or without swelling. An antibiotic is indicated for odontogenic infections with systemic signs and symptoms. The factors contributing to ED physician prescribing habits are beyond the scope of this survey. The Canadian survey found associations between prescribing behaviors due to diagnostic dilemmas, patient condition decline, and patient demands.[82] Rendering care for local odontogenic infection with an analgesic, antibiotic (with systemic involvement), temporary pain management, and referring to a dentist's office are the most appropriate responses to queries about rendering care. This can be further explored in the future. Due to barriers encountered with survey distribution and a low respondent rate, the analysis of some questions was not possible, and overall, question analysis was prioritized based on importance.

Conclusion

It was determined that ED physicians were not comfortable in assessing and rendering care for dental trauma. Their satisfaction with their dental training directly influenced their comfort level in rendering care for severe odontogenic infection, assessing trauma, and rendering care for dental trauma. Those not comfortable with rendering care for severe odontogenic infection were dissatisfied with ED supplies. In contrast, those who were comfortable with rendering care for dental trauma were satisfied with ED supplies. The comfort level in assessing dental trauma was higher in those who practiced for more than ten years. Continuing medical education courses for ED providers managing dental emergencies could include instruction on assessing and rendering care for dental trauma and rendering care for severe odontogenic infection.

Appendix A. Statistical analysis for all questions, including findings not significant.

Comfort level with rendering care for severe odontogenic infection

	ED Provider	Comfortable	Not comfortable	Neither/Nor	P-value
	N = 81	N = 58	N = 9	N = 14	
Number of patients with dental pain - no. (%)					
0-5	3 (37)	23 (39.7)	2 (22.2)	5 (35.7)	.835
6-10	35 (43.2)	23 (39.7)	5 (55.6)	7 (5)	
10-21	16 (19.8)	12 (2 .7)	2 (22.2)	2 (14.3)	
Satisfaction with ED supplies -					
No. (%) 1Very satisfied	11 (13.6)	1 (17.2)	0 (0)	1 (7.1)	. 2
2 Satisfied	29 (35.8)	25 (43.1)	0 (0)	4 (28.6)	
3 Neither/Nor	18 (22.2)	12 (2 .7)	3 (33.3)	3 (21.4)	
4 Dissatisfied	14 (17.3)	8 (13.8)	1 (11.1)	5 (35.7)	
5 Very dissatisfied	9 (11.1)	3 (5.2)	5 (55.6)	1 (7.1)	
Satisfied with dental training - No. (%)					
1Very satisfied	6 (7.4)	6 (1 .3)	0 (0)	0 (0)	
2 Satisfied	2 (24.7)	18 (31)	0 (0)	2 (14.3)	
3 Neither/Nor	23 (28.4)	15 (25.9)	2 (22.2)	6 (42.9)	
4 Dissatisfied	26 (32.1)	18 (31)	2 (22.2)	6 (42.9)	
5Very dissatisfied	6 (7.4)	1 (1.7)	5 (55.6)	0 (0)	
Satisfaction with dentist referral - No.					
(%)	3 (3.7)	2 (3.4)	0 (0)	1 (7.1)	.412
1Very satisfied					
2 Satisfied	11 (13.6)	9 (15.5)	1 (11.1)	1 (7.1)	
3 Neither/Nor	11 (13.6)	9 (15.5)	1 (11.1)	1 (7.1)	
4 Dissatisfied	29 (35.8)	23 (39.7)	1 (11.1)	5 (35.7)	
5 Very dissatisfied	27 (33.3)	15 (25.9)	6 (66.7)	6 (42.9)	
Satisfaction with dentist availability - No. (%)					
1Very satisfied	5 (6.2)	4 (6.9)	0 (0)	1 (7.1)	.497
2 Satisfied	15 (18.5)	11 (19)	2 (22.2)	2 (14.3)	
3 Neither/Nor	16 (19.8)	12 (2 .7)	0 (0)	4 (28.6)	
4 Dissatisfied	18 (22.2)	15 (25.9)	1 (11.1)	2 (14.3)	
5 Very Dissatisfied	27 (33.3)	16 (27.6)	6 (66.7)	5 (35.7)	
Satisfaction with dentist contact info - No. (%)					
1Very satisfied	3 (3.7)	3 (5.2)	0 (0)	0 (0)	. 5
2 Satisfied	29 (35.8)	22 (37.9)	1 (11.1)	6 (42.9)	
3Neither/Nor	19 (23.5)	15 (25.9)	1 (11.1)	3 (21.4)	
4 Dissatisfied	2 (24.7)	16 (27.6)	1 (11.1)	3 (21.4)	
5Very Dissatisfied	1 (12.3)	2 (3.4)	6 (66.7)	2 (14.3)	
Satisfaction assessing odontogenic infect. -					
No. (%)	1 (1.2)	0 (0)	1 (11.1)	0 (0)	. 53
1Very satisfied					
2 Satisfied	3 (3.7)	3 (5.2)	0 (0)	0 ( )	
3 Neither/Nor	23 (28.4)	16 (27.6)	2 (22.2)	5 (35.7)	
4 Dissatisfied	21 (25.9)	19 (32.8)	0 (0)	2 (14.3)	
5Very dissatisfied	26 (32.1)	17 (29.3)	3 (33.3)	6 (42.9)	
	7 (8.6)	3 (5.2)	3 (33.3)	1 (7.1)	
Satisfaction rendering care for odontogenic infect. -					
no. (%) 1Very satisfied	2 (2.5)	2 (3.4)	0 (0)	0 (0)	. 26
2 Satisfied	25 (3 .9)	19 (32.8)	1 (11.1)	5 (35.7)	
3Neither/Nor	17 (21)	14 (24.1)	0 (0)	3 (21.4)	
4 Dissatisfied	23 (28.4)	18 (31)	2 (22.2)	3 (21.4)	
5 Very dissatisfied	14 (17.3)	5 (8.6)	6 (66.7)	3 (21.4)	

Comfort level with assessing dental trauma

	ED Providers	Comfortable	Not comfortable	Neither/Nor	P-value
	N = 81	N = 56	N = 9	N = 16	
Number of patients with dental pain - no. (%)					
0-5	3 (37)	2 (35.7)	5 (55.6)	5 (31.2)	.545
6-10	35 (43.2)	24 (42.9)	2 (22.2)	9 (56.2)	
1 -21	16 (19.8)	12 (21.4)	2 (22.2)	2 (12.5)	
Satisfaction with ED supplies - no. (%)					
1Very satisfied	11 (13.6)	9 (16.1)	1 (11.1)	1 (6.2)	.926
2 Satisfied	29 (35.8)	21 (37.5)	3 (33.3)	5 (31.2)	
3 Neither/Nor	18 (22.2)	11 (19.6)	3 (33.3)	4 (25)	
4 Dissatisfied	14 (17.3)	1 (17.9)	1 (11.1)	3 (18.8)	
5 Very dissatisfied	9 (11.1)	5 (8.9)	1 (11.1)	3 (18.8)	
Satisfaction with dental training - no. (%)					
1Very satisfied	6 (7.4)	6 (1 .7)	0 (0)	0 (0)	< . 1
2 Satisfied	2 (24.7)	2 (35.7)	0 (0)	0 (0)	
3Neither/Nor	23 (28.4)	17 (3 .4)	1 (11.1)	5 (31.2)	
4 Dissatisfied	26 (32.1)	9 (16.1)	7 (77.8)	1 (62.5)	
5 Very dissatisfied	6 (7.4)	4 (7.1)	1 (11.1)	1 (6.2)	
Satisfaction with dentist referral - no. (%)					
1Very satisfied	3 (3.7)	3 (5.4)	0 (0)	0 (0)	.373
2 Satisfied	11 (13.6)	7 (12.5)	3 (33.3)	1 (6.2)	
3 Neither	11 (13.6)	9 (16.1)	1 (11.1)	1 (6.2)	
4 Dissatisfied	29 (35.8)	17 (3 .4)	2 (22.2)	1 (62.5)	
5 Very Dissatisfied	27 (33.3)	2 (35.7)	3 (33.3)	4 (25)	
Satisfaction with dentist availability. - No. (%)					
1Very satisfied	5 (6.2)	3 (5.4)	1 (11.1)	1 (6.2)	.665
2 Satisfied	15 (18.5)	12 (21.4)	2 (22.2)	1 (6.2)	
3 Neither/Nor	16 (19.8)	11 (19.6)	1 (11.1)	4 (25)	
4 Dissatisfied	18 (22.2)	1 (17.9)	2 (22.2)	6 (37.5)	
5 Very dissatisfied	27 (33.3)	2 (35.7)	3 (33.3)	4 (25)	
Satisfaction with dentist contact info - No. (%)					
1Very satisfied	3 (3.7)	3 (5.4)	0 (0)	0 (0)	< . 1
2 Satisfied	29 (35.8)	28 (5)	0 (0)	1 (6.2)	
3 Neither/Nor	19 (23.5)	13 (23.2)	1 (11.1)	5 (31.2)	
4 Dissatisfied	2 (24.7)	8 (14.3)	5 (55.6)	7 (43.8)	
5 Very dissatisfied	1 (12.3)	4 (7.1)	3 (33.3)	3 (18.8)	
Satisfaction when assessing trauma - No. (%)					
1Very satisfied	1 (1.2)	0 (0)	0 (0)	1 (6.2)	< . 1
2 Satisfied	3 (3.7)	3 (5.4)	0 (0)	0 (0)	
3 Neither/Nor	23 (28.4)	23 (41.1)	0 (0)	0 (0)	
4 Dissatisfied	21 (25.9)	14 (25)	1 (11.1)	6 (37.5)	
5 Very dissatisfied	26 (32.1)	13 (23.2)	5 (55.6)	8 (5)	
	7 (8.6)	3 (5.4)	3 (33.3)	1 (6.2)	
Satisfaction when rendering care for trauma - No. (%)					
1Very satisfied	2 (2.5)	2 (3.6)	0(0)	0 (0)	< . 1
2 Satisfied	25 (3 .9)	25 (44.6)	0(0)	0 (0)	
3 Neither/Nor	17 (21)	13 (23.2)	0(0)	4 (25)	
4 Dissatisfied	23 (28.4)	13 (23.2)	3 (33.3)	7 (43.8)	
5 Very dissatisfied	14 (17.3)	3 (5.4)	6 (66.7)	5 (31.2)	

Comfort level in assessing dental trauma and other parameters

	ED Providers	Comfortable	Not comfortable	Neither/Nor	P-value
	N = 81	N = 56	N = 9	N = 16	
Number of patients with dental pain - No. (%)					
0-5	3 (37)	2 (35.7)	5 (55.6)	5 (31.2)	.562
6-10	35 (43.2)	24 (42.9)	2 (22.2)	9 (56.2)	
10-21 &>21	16 (19.8)	12 (21.4)	2 (22.2)	2 (12.5)	
Years of practice - No. (%)					
No response	1 (1.2)	0 (0)	0 (0)	1 (6.2)	. 17
<10	33 (4 .7)	17 (3 .4)	7 (77.8)	9 (56.2)	
10 -20	28 (34.6)	22 (39.3)	1 (11.1)	5 (31.2)	
> 20	19 (23.5)	17 (3 .4)	1 (11.1)	1 (6.2)	
Affiliation with ACEP - No. (%)					
Board Eligible	11 (13.6)	7 (12.5)	3 (33.3)	1 (6.2)	.21
Board Certified	63 (77.8)	45 (8 .4)	6 (66.7)	12 (75)	
NA	7 (8.6)	4 (7.1)	0 (0)	3 (18.8)	
Teaching hospital - no. (%)					
No	43 (53.1)	3 (53.6)	4 (44.4)	9 (56.2)	.88
Yes	38 (46.9)	26 (46.4)	5 (55.6)	7 (43.8)	
Trauma I: No. (%)					
No	55 (67.9)	38 (67.9)	5 (55.6)	12 (75)	.596
Yes	26 (32.1)	18 (32.1)	4 (44.4)	4 (25)	
Trauma II: No. (%)					
No	73 (9 .1)	5 (89.3)	9 (1)	14 (87.5)	.714
Yes	8 (9.9)	6 (1 .7)	0 (O)	2 (12.5)	
Trauma III: - No. (%)					
No	73 (9 .1)	5 (89.3)	9 (1)	14 (87.5)	.719
Yes	8 (9.9)	6 (1 .7)	0 (O)	2 (12.5)	
Trauma IV- No. (%)					
No	76 (93.8)	53 (94.6)	9 (1)	14 (87.5)	.466
Yes	5 (6.2)	3 (5.4)	0 (O)	2 (12.5)	

Comfort level in rendering care for dental trauma and other parameters

	ED Provider	Comfortable	Not comfortable	Neither/Nor	P-value
	N = 81	N = 32	N = 25	N = 24	
Number of patients with dental pain - No. (%)					
0 -5	3 (37)	6 (18.8)	13 (52)	11 (45.8)	. 81
6-10	35 (43.2)	17 (53.1)	8 (32)	1 (41.7)	
10 -21 &>21	16 (19.8)	9 (28.1)	4 (16)	3 (12.5)	
Years of practice - No. (%)					
No response	1 (1.2)	0 (0)	0 (0)	1 (4.2)	.111
< 10	33 (4 .7)	1 (31.2)	14 (56)	9 (37.5)	
10 -20	28 (34.6)	1 (31.2)	7 (28)	11 (45.8)	
>20	19 (23.5)	12 (37.5)	4 (16)	3 (12.5)	
Affiliation with ACEP - No. (%)					
Board Eligible	11 (13.6)	5 (15.6)	5 (2)	1 (4.2)	.243
Board Certified	63 (77.8)	26 (81.2)	18 (72)	19 (79.2)	
NA	7 (8.6)	1 (3.1)	2 (8)	4 (16.7)	
Teaching hospital - no. (%)					
No	43 (53.1)	16 (5)	14 (56)	13 (54.2)	.922
Yes	38 (46.9)	16 (5)	11 (44)	11 (45.8)	
Trauma I: No.(%)					
No	55 (67.9)	23 (71.9)	16 (64)	16 (66.7)	.838
Yes	26 (32.1)	9 (28.1)	9 (36)	8 (33.3)	
Trauma II - No. (%)					
No	73 (9 .1)	28 (87.5)	23 (92)	22 (91.7)	.8 7
Yes	8 (9.9)	4 (12.5)	2 (8)	2 (8.3)	
Trauma III: No. (%)					
No	73 (9 .1)	27 (84.4)	23 (92)	23 (95.8)	.371
Yes	8 (9.9)	5 (15.6)	2 (8)	1 (4.2)	
Trauma IV: No. (%)					
No	76 (93.8)	29 (9 .6)	25 (1)	22 (91.7)	.315
Yes	5 (6.2)	3 (9.4)	0 (O)	2 (8.3)	

Rendering care for dental pain	
Q5 response frequencies N = 81	
Refer - No. (%)	
No	
Yes	32 (39.5)
	49 (6 .5)
Analgesic - no. (%)	
No	1 (12.3)
Yes	71 (87.7)
Antibiotic - No. (%) No	
response	11 (13.6)
Response	7 (86.4)
Temporary management - No. (%)	
No	3 (37)
Yes	51 (63)
Consult - No. (%)	
No	65 (8 .2)
Yes	16 (19.8)
Other - No. (%)	
No	77 (95.1)
Yes	4 (4.9)

Rendering care for dental trauma

Q8 response frequencies N = 81	
Refer - No. (%)	
No	35 (43.2)
Yes	46 (56.8)
Analgesic - No. (%)	
No	13 (16)
Yes	68 (84)
Antibiotic - No. (%)	
No	25 (3 .9)
Yes	56 (69.1)
Temporary management - No. (%)	
No	27 (33.3)
Yes	54 (66.7)
Consult - No. (%)	
No	56 (69.1)
Yes	25 (3 .9)
Trauma other - No.	
(%) No	76 (93.8)
Yes	5 (6.2)

Rendering care for local odontogenic infection

Q12 response frequencies N = 81

Refer - No. (%)	
No	12 (14.8)
Yes	4 (49.4)
Analgesic - No. (%)	
No	12 (14.8)
Yes	69 (85.2)
Antibiotic - No. (%)	
No	2 (2.5)
Yes	79 (97.5)
Temporary management - No. (%)	
No	39 (48.1)
Yes	42 (51.9)
Consult - No. (%)	
No	64 (79)
Yes	17 (21)
Other - No. (%)	
No	74 (91.4)
Yes	7 (8.6)

Logistic Regression Model: Comfort level rendering care for dental trauma

	Odds Ratio	95% C.I.	P-value
Not satisfied vs satisfied with dental training	1 .29	[2.534, 41.751]	. 1
Neither/ nor vs. satisfied with dental training	3.21	[.663, 15.578]	.15

Rendering care of dental pain characteristics

	Analgesic	No	Yes	NA
	N = 81	N = 1	N = 71	
Years of practice - No. (%)				
<10	33 (41.2)	1 (1)	32 (45.7)	. 46
10-20	28 (35)	4 (4)	24 (34.3)	
>20	19 (23.8)	5 (5)	14 (2)	
NA	1		1	
Affiliation with ACEP - No. (%)				
Board Eligible	11 (13.6)	0 (0)	11 (15.5)	.38
Board Certification	63 (77.8)	1 (1)	53 (74.6)	
NA	7 (8.6)	0 (0)	7 (9.9)	
Number of patients treated - No. (%)				
0-5	3 (37)	2 (2)	28 (39.4)	.399
6-10	35 (43.2)	5 (5)	3 (42.3)	
1 -21 & >21	16 (19.8)	3 (3)	13 (18.3)	

Association bet care of pain and characteristics

	Temporarily pain management	No	Yes	NA
	N = 81	N = 3	N = 51	
Years of practice - no. (%)				
<10	33 (41.2)	7 (23.3)	26 (52)	. 43
10 -20	28 (35)	13 (43.3)	15 (3)	
>20	19 (23.8)	1 (33.3)	9 (18)	
NA	1		1	
Affiliation with ACEP - no. (%)				
Board Eligible	11 (13.6)	2 (6.7)	9 (17.6)	.297
Board Certified	63 (77.8)	26 (86.7)	37 (72.5)	
NA	7 (8.6)	2 (6.7)	5 (9.8)	
Number of patients treated - no. (%)				
0-5	3 (37)	9 (3)	21 (41.2)	.386
6-10	35 (43.2)	16 (53.3)	19 (37.3)	
10 -21 & >21	16 (19.8)	5 (16.7)	11 (21.6)	

Rendering care or dental pain and characteristics

	Referral to dentist	No	Y7es	NA
	N = 81	N = 65	N = 16	
Years of practice - No. (%)				
<10	33 (41.2)	27 (41.5)	6 (4)	.876
10-20	28 (35)	22 (33.8)	6 (4)	
>20	19 (23.8)	16 (24.6)	3 (2)	
NA	1	0	1	
Affiliation with ACEP - No. (%)				
Board Eligible	11 (13.6)	8 (12.3)	3 (18.8)	.548
Board Certified	63 (77.8)	52 (8)	11 (68.8)	
NA	7 (8.6)	5 (7.7)	2 (12.5)	
Number of patients treated - No. (%)				
0-5	3 (37)	23 (35.4)	7 (43.8)	.664
6-10	35 (43.2)	28 (43.1)	7 (43.8)	
10 -21 & >21	16 (19.8)	14 (21.5)	2 (12.5)	

Rendering care for dental trauma characteristics

	Analgesic	No	Yes	NA
	N = 81	N = 13	N = 68	
Years of practice - No. (%)				
<10	33 (41.2)	5 (38.5)	28 (41.8)	.862
10-20	28 (35)	4 (3 .8)	24 (35.8)	
>20	19 (23.8)	4 (3 .8)	15 (22.4)	
NA	1		1	
Affiliation with ACEP - No. (%)				
Board Eligible	11 (13.6)	2 (15.4)	9 (13.2)	> .99
Board Certification	63 (77.8)	1 (76.9)	53 (77.9)	
NA	7 (8.6)	1 (7.7)	6 (8.8)	
Number of patients treated - No. (%)				
0-5	3 (37)	4 (3 .8)	26 (38.2)	.861
6-10	35 (43.2)	6 (46.2)	29 (42.6)	
10-21 & >21	16 (19.8)	3 (23.1)	13 (19.1)	

Rendering care for dental trauma and characteristics

	Antibiotics	No	Yes	NA
	N = 81	N = 25	N = 56	
Years of practice - No. (%)				
<10	33 (41.2)	11 (45.8)	22 (39.3)	. 83
10-20	28 (35)	11 (45.8)	17 (3 .4)	
>20	19 (23.8)	2 (8.3)	17 (3 .4)	
NA	1	1		
Affiliation with ACEP - No. (%)				
Board Eligible	11 (13.6)	3 (12)	8 (14.3)	.828
Board Certified	63 (77.8)	19 (76)	44 (78.6)	
NA	7 (8.6)	3 (12)	4 (7.1)	
Number of patients treated - No. (%)				
0-5	3 (37)	13 (52)	17 (3 .4)	.182
6-10	35 (43.2)	8 (32)	27 (48.2)	
10 -21 & >21	16 (19.8)	4 (16)	12 (21.4)	

Rendering care for dental trauma and characteristics

	Temporary pain management	No	Yes	NA
	N = 81	N = 27	N = 54	
Years of practice - No. (%)				
<1	33 (41.2)	8 (29.6)	25 (47.2)	.314
1 -2	28 (35)	11 (4 .7)	17 (32.1)	
>2	19 (23.8)	8 (29.6)	11 (2 .8)	
NA	1		1	
Affiliation with ACEP - No. (%)				
Board Eligible	11 (13.6)	4 (14.8)	7 (13)	> .99
Board Certified	63 (77.8)	21 (77.8)	42 (77.8)	
NA	7 (8.6)	2 (7.4)	5 (9.3)	
Number of patients treated - no. (%)				
0-5	3 (37)	8 (29.6)	22 (4 .7)	.48
6-10	35 (43.2)	12 (44.4)	23 (42.6)	
10 -21 & >21	16 (19.8)	7 (25.9)	9 (16.7)	

Rendering care for dental trauma and characteristics

	Referral to a dentist	No	Yes	NA
	N = 81	N = 35	N = 46	
Years of practice - No. (%)				
<10	33 (41.2)	14 (4)	19 (42.2)	.957
10-20	28 (35)	13 (37.1)	15 (33.3)	
>20	19 (23.8)	8 (22.9)	11 (24.4)	
NA	1	0	1	
Affiliation with ACEP - No. (%)	11 (13.6)	4 (11.4)	7 (15.2)	. 25
Board Eligible				
Board Certified	63 (77.8)	31 (88.6)	32 (69.6)	
NA	7 (8.6)	0 (0)	7 (15.2)	
Number of patients treated - No. (%)	3 (37)	9 (25.7)	21 (45.7)	.1 9
0-5				
6-10	35 (43.2)	2 (57.1)	15 (32.6)	
10 -21 & >21	16 (19.8)	6 (17.1)	1 (21.7)	

Rendering care for local odontogenic infection and characteristics

	Analgesics	No	Yes	NA
	N = 81	N = 12	N = 69	
Years of practice - No. (%)				
<10	33 (41.2)	3 (25)	3 (44.1)	.487
10-20	28 (35)	5 (41.7)	23 (33.8)	
>20	19 (23.8)	4 (33.3)	15 (22.1)	
NA	1	0	1	
Affiliation with ACEP - No. (%)				
Board Eligible	11 (13.6)	0(0)	11 (15.9)	.175
Board Certified	63 (77.8)	12 (1)	51 (73.9)	
NA	7 (8.6)	0 (0)	7 (1.1)	
Number of patients treated - No. (%)				
0-5	3 (37)	4 (33.3)	26 (37.7)	.847
6-10	35 (43.2)	5 (41.7)	3 (43.5)	
10 -21 & >21	16 (19.8)	3 (25)	13 (18.8)	

Rendering care for local odontogenic and characteristic

	Antibiotics	No	Yes	NA
	N = 81	N = 2	N = 79	
Years of practice - No. (%)				
<10	33 (41.2)	1 (5)	32 (41)	> .99
10-20	28 (35)	1 (5)	27 (34.6)	
>20	19 (23.8)	0 (0)	19 (24.4)	
NA	1	0	1	
Affiliation with ACEP - No. (%)				
Board Eligible	11 (13.6)	0 (0)	11 (13.9)	> .99
Board Certified	63 (77.8)	2 (1)	61 (77.2)	
NA	7 (8.6)	0 (0)	7 (8.9)	
Number of patients treated - No. (%)				
0-5	3 (37)	1 (5)	29 (36.7)	> .99
6-10	35 (43.2)	1 (5)	34 (43)	
10 -21 & >21	16 (19.8)50	0 (0)	16 (2 .3)	

Rendering care for local odontogenic infection and characteristics

	Temporary pain management	No	Yes	NA
	N = 81	N = 39	N = 42	
Years of practice - No. (%)				
<10	33 (41.2)	1 (25.6)	23 (56.1)	. 16
10 -20	28 (35)	18 (46.2)	1 (24.4)	
>20	19 (23.8)	11 (28.2)	8 (19.5)	
NA	1	0	1	
Affiliation with ACEP - No. (%)				
B Eligible	11 (13.6)	3 (7.7)	8 (19)	.171
B Certified	63 (77.8)	34 (87.2)	29 (69)	
NA	7 (8.6)	2 (5.1)	5 (11.9)	
Number of patients treated - No. (%)				
0-5	3 (37)	13 (33.3)	17 (4 .5)	.61
6-10	35 (43.2)	19 (48.7)	16 (38.1)	
10 -21 & >21	16 (19.8)	7 (17.9)	9 (21.4)	

Rendering care for dental trauma and characteristics

	Referral to a dentist	No	Yes	NA
	N = 81	N = 4	N = 41	
Years of practice - No. (%)				
<10	33 (41.2)	15 (37.5)	18 (45)	.7 3
10-20	28 (35)	14 (35)	14 (35)	
>20	19 (23.8)	11 (27.5)	8 (2)	
NA	1	0	1	
Affiliation with ACEP - No. (%)				
Board Eligible	11 (13.6)	6 (15)	5 (12.2)	.176
Board Certified	63 (77.8)	33 (82.5)	3 (73.2)	
NA	7 (8.6)	1 (2.5)	6 (14.6)	
Number of patients treated - No. (%)				
0-5	3 (37)	14 (35)	16 (39)	.398
6-10	35 (43.2)	2 (5)	15 (36.6)	
10 -21 & >21	16 (19.8)	6 (15)	1 (24.4)	

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