

Improve Access to Dental Care for Rural and Underserved Populations using Telehealth Technology

Amy B. Martin, DrPH^{1,2}, Joni D. Nelson, PhD^{1,2}, Grishma P. Bhavsar, PhD², James McElligot, MD¹, David Garr, MD¹, Renata S. Leite, DDS¹



UNIVERSITY OF
SOUTH CAROLINA
Arnold School of Public Health

MUSC
JAMES B. EDWARDS
COLLEGE of DENTAL
MEDICINE

Background and Purpose

Nearly 15 years ago conversations ignited around the applications of telehealth for oral health care, given national recognition by the Surgeon General's Report for Oral Health in America (2000). Following was the Institute of Medicine's report, "Improving Access to Oral Health Care for Vulnerable and Underserved Populations (2011), which recommends teledentistry as a way of ameliorating traditional geographic access to care barriers for rural and underserved communities, although the challenge of its application for definitive treatment remains elusive under most states' dental practice acts. Additional challenges to adoption of telehealth technologies by dentists include training deficiencies, insufficient networks to support the application, overall low use of technology, and reimbursement concerns.

In efforts to advance the potential clinical applications of teledentistry, we conducted a statewide feasibility assessment that includes the identification of consulting specialists, pilot demonstration applications, reimbursement and regulatory issues in South Carolina (SC). The study was purposed to understand the interest and need for the usage of telehealth technology by professional dental health providers in SC (e.g. general dentist, pediatric dentist, oral surgeon, etc.).

Methods

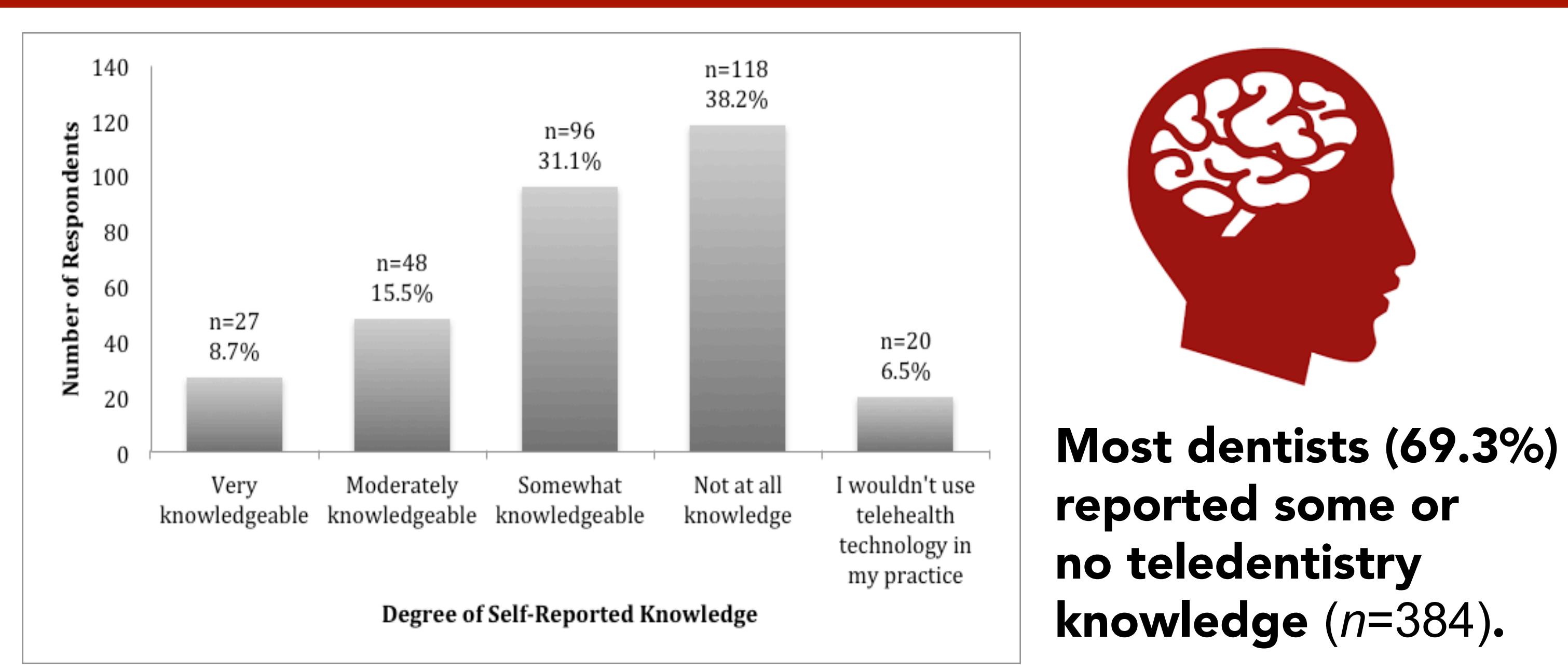
- Target Audience and Survey Administration:** Surveys were administered electronically in 2013 through the SC Dental Association. Members of this group represents more than 80% of SC dental practitioners from varying dental specialties, including: General dentistry, pediatric dentistry, oral surgery, periodontics, endodontics, and orthodontics with a response rate of 19.5% (n=384).
- Respondents were informed with a brief introduction to the purpose of the survey in electronic format. Survey questions focused knowledge of telehealth for dental practice application, but the bulk of the survey focused on two domains: 1) need for telehealth technology; and 2) interest in using telehealth technology for dental care delivery. We included both dichotomous and open-ended questions within the survey to allow respondents to include additional descriptive information.

Summary of abbreviated questions asked in the teledentistry feasibility survey assessment	
Survey construct categories	Questions
Dental practice and practitioner characteristics (All respondents)	<ul style="list-style-type: none">What is your dental specialty?Currently in South Carolina, Medicaid is the only third party payer that reimburses for telehealth services. Approximately what percentage of your patients are Medicaid beneficiaries?
Estimating the need for telehealth technology for oral health improvement (All respondents)	<ul style="list-style-type: none">In a typical year, how many times do you need to consult with any of the following specialists on a treatment plan or patient care issue?When providing services to, or developing treatment plans for, patients with complex needs, would you use outside consultants if they were made available to you through telehealth services?
Assessing the interest in utilizing telehealth technology for dental care delivery (Asked only of potential consultants)	<ul style="list-style-type: none">If telehealth services were available and reimbursable to facilitate your consultation services to primary care providers (general and pediatric dentists) for the purpose of developing care plans, would you be willing to serve as a consulting clinician for any of the following patient populations?

- Data Collection and Analysis:** All data were collected through EpiInfo. Frequency analyses were used to reveal response percentages per survey item. The unit of analysis was individual respondents, not individual dental practice facilities. Dependent variables were Medicaid patient population size (less or greater than 10%), career stage (early/middle and advanced), and National Health Service Corps participation (yes or no). Practice and provider characteristics were screener questions. We conducted descriptive and chi-square analyses.
- The study was approved by the Institutional Review Board at the University of South Carolina.

1. Medical University of South Carolina; 2. University of South Carolina

Results



General and pediatric dentists (n=264) responded to questions about initiating a specialty consult using telehealth. The largest number of respondents indicated a need for endodontics (40.2%) and oral and maxillofacial surgery (37.9%) consultations; others included orthodontics (30.7%), periodontics (28.4%) and pediatrics (12.5%).

Medicaid patient population size was the only dependent measure with statistical significance. Compared to <10% Medicaid, >10% was more likely to:	<10% Medicaid	>10% Medicaid
Frequently need consults for orthodontics (p=0.0043), (n=264)	25.5%	43.3%
Frequently need consults for pediatrics (p<0.0001), (n=264)	5.9%	29.0%
Use telehealth for children with special healthcare needs (p=0.0017), (n=259)	44.1%	65.8%
Telehealth use for complex health conditions or immunosuppressed (p=0.0004), (n=259)	54.3%	78.1%
Telehealth application for conditions exacerbated by unmet dental needs (p=0.0022) (n=259)	44.6%	65.8%
Use telehealth for extending practice to underserved populations (p=0.0004), (n=291)	14.6%	33.8%

- ① Consultations for diagnosis (72.9%)
- ② Emergencies (56.7%)
- ③ Continuing education (53.3%)

General and pediatric dentists reported on their potential use of telehealth resources to to improve practice and care delivery (n=291).

Discussion

- Despite the need to improve knowledge about how telehealth can be used to improve access to dental care, there appears to be sufficient interest among dentists who responded to the survey in the potential use of telehealth. Specialties with greatest need, were endodontics and oral and maxillofacial surgery. Patient populations identified as potential beneficiaries of teledentistry were immunosuppressed patients and children with special health care needs.
- The survey has provided valuable information to policymakers and the South Carolina Dental Association as the state explores how telehealth can be used to improve access to dental care and oral health disparities.
- Teledentistry remains a salient resolution for closing the gap in geographic access to the unmet medical needs of underserved populations in a southern state, encompassing mainly whole-county health professional shortages areas. But, further study will determine if demand for teledentistry is in balance with consultant availability.

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