Dental Therapy in the United States: An Evidence Review

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Dental Workforce Trends in the US

- Workforce supply & distribution
  - Daunting shortage of minoritized providers that persists despite overall supply continuing to grow
  - Geographic maldistribution of care providers
  - Little change to the occupational hierarchy in the past century
  - Large exodus of assistants and hygienists due to COVID-19 pandemic with slow recovery
  - Training pipelines are expensive and clogged due to faculty shortages and lack of clinical training sites
- Care of underserved patients
  - Systems of coverage and care delivery are bifurcated (public/private) with vastly different resource bases and subsequent disparities in outcomes
  - Medical-dental split hinders care of special needs populations and the development of value-based models
- Small business practice model
  - Unable to incorporate 21st-century tools at scale, idiosyncratic personality-driven, yet changing…
- Lack of oral health parity
  - Lack of universal coverage
  - Lack of required access to care as part of social contract

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US Dental Therapy Timeline

2005

Dental Health Aide Therapists (DHAT) authorized in 2002 via the Community Health Aide Program (CHAP), began training in New Zealand in 2003 and in practice 2005 in the Alaska Native Tribal Health Consortium (ANTHC)

2009

- MN passes the first state-level DT legislation, creates two levels of the provider DT & ADT
- ADA files lawsuit against ANTHC

2014

ME authorizes DT

2015

Commission on Dental Accreditation (CODA) approves guidelines for dental therapy programs

2016

- VT passes DT bill
- DHATs begin practicing in WA, followed by law allowing Tribal practice
- DHATs begin practicing in OR as a pilot project

2018

- AZ and MI pass DT bills
- VT is awarded T12 grant from HRSA for program development

2019

- CT, ID, MT, NV, NM authorize dental therapy. National partnership for dental therapy is formalized

2020

- OR approves a second DT pilot project.
- The DT program at Iḷisaġvik College, Alaska's only Tribal college is the first to gain CODA accreditation

2021

- Five states have DTs in practice (AK, OR, WA, ME, MN)

2022

- CO authorizes Dental Therapy
- Skagit Valley Program Accredited and running
- HRSA report recommends supporting DT education
- UMN receives CODA accreditation
- WI Authorizes DT
- WA expands authorization to state (14 states total)
- Northwestern Technical College DT program launched (WI)

For more info: https://www.dentaltherapy.org/

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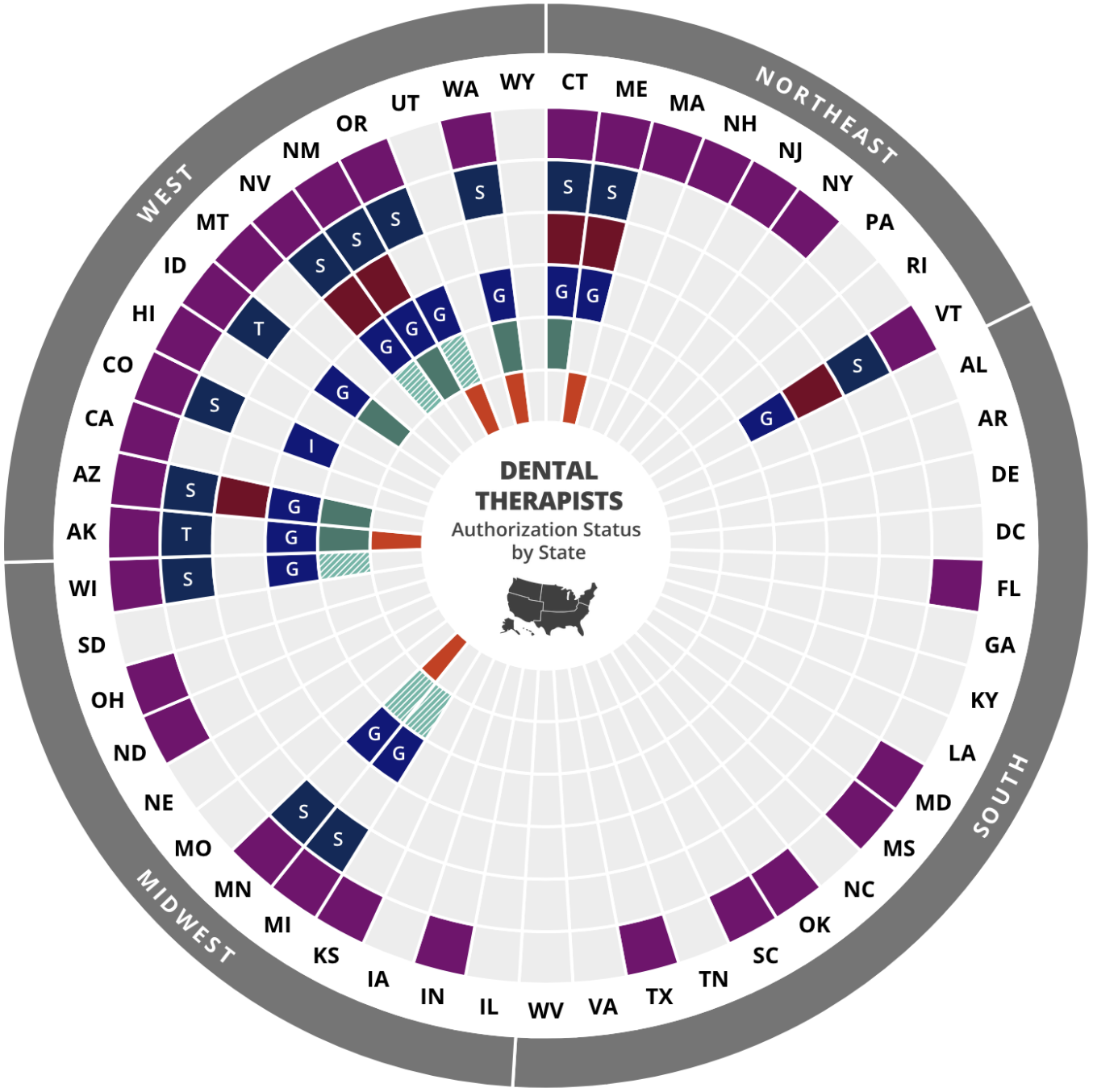

Campaign for Dental Therapy in the State (Active or Prior)

Authorization of Dental Therapy

T Tribal Dental Therapy
S Statewide
Learn More ›

Mandated Dual Dental Hygiene and/or Degree Requirement in State Statute

Dental Therapist Supervision Level by Dentist

D Direct
I Indirect
G General

Population/Setting Restrictions on DT Practice

Setting Only
Population Only
Both

Dental Therapists Practicing in the State

Source: Oral Health Workforce Research Center
http://www.oralhealthworkforce.org

Purpose of the Evidence Review

- While there is an abundance of literature on the US adoption of dental therapists, the summative literature to date has not been systematically assessed for the type and quality of evidence.
- Resistance to the adoption of dental therapy is often predicated on myths and misinformation that the occupation is unsafe, low quality, somehow harmful to patients, or lacks patient acceptability.
- The purpose of this scoping review is to synthesize and assess the research on dental therapy in the US and Tribal nations between its introduction in 2005 and 2025.

Study Methodology

Overview and steps

- Scoping reviews follow a systematic approach to map evidence on a specific topic and identify main concepts, theories, sources, and knowledge gaps
- Scoping Review Steps
  - Literature Search (peer reviewed and grey literature)
  - Screening (title and abstract)
  - Full Text Review
  - Data Abstraction and Quality Assessment
- The online platform Covidence was used to conduct the review
  - 124 articles were included in the review

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Study Methodology

Inclusion and Exclusion Criteria & Key Questions

Inclusion	Exclusion
▪ Studies on dental therapy* ▪ Original research, including descriptive studies ▪ U.S. based research	▪ Letters to the editor, opinion pieces, etc. ▪ International studies (e.g. studies based in the U.K., New Zealand, and Canada)

*Due to the overlap between ADHPs and DTs, we also included research on ADHPs in the US.

Key Study Questions

1. What is the current evidence base for dental therapists in the US?
2. What is the available evidence and how has research been conducted thus far?
3. Where are the gaps in the available knowledge base on dental therapists?

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Study Methodology

Quality Assessment

Ways of Evaluating Important and Relevant Data (WEIRD) Tool	Meta Quality Assessment Tool (MetaQAT)

▪ Used exclusively for descriptive studies
  ▪ i.e., descriptions of 'real world' health, welfare, or other programs/interventions; descriptions of the implementation of programs, policies or interventions; descriptions of policy processes or system reforms
▪ Includes a set of questions to respond yes/no/unclear and a final grading system
	▪ Tool designed to be "both generic and specific" for broad utility
	▪ Used studies that do not fall under the WEIRD tool criteria
	  ▪ e.g., randomized studies, non-randomized studies (ITS, CBS, cohort studies, case-control studies), other observational studies such as regression analyses, primary qualitative studies, systematic reviews
	▪ Adapted the WEIRD tool grading system for final assessment

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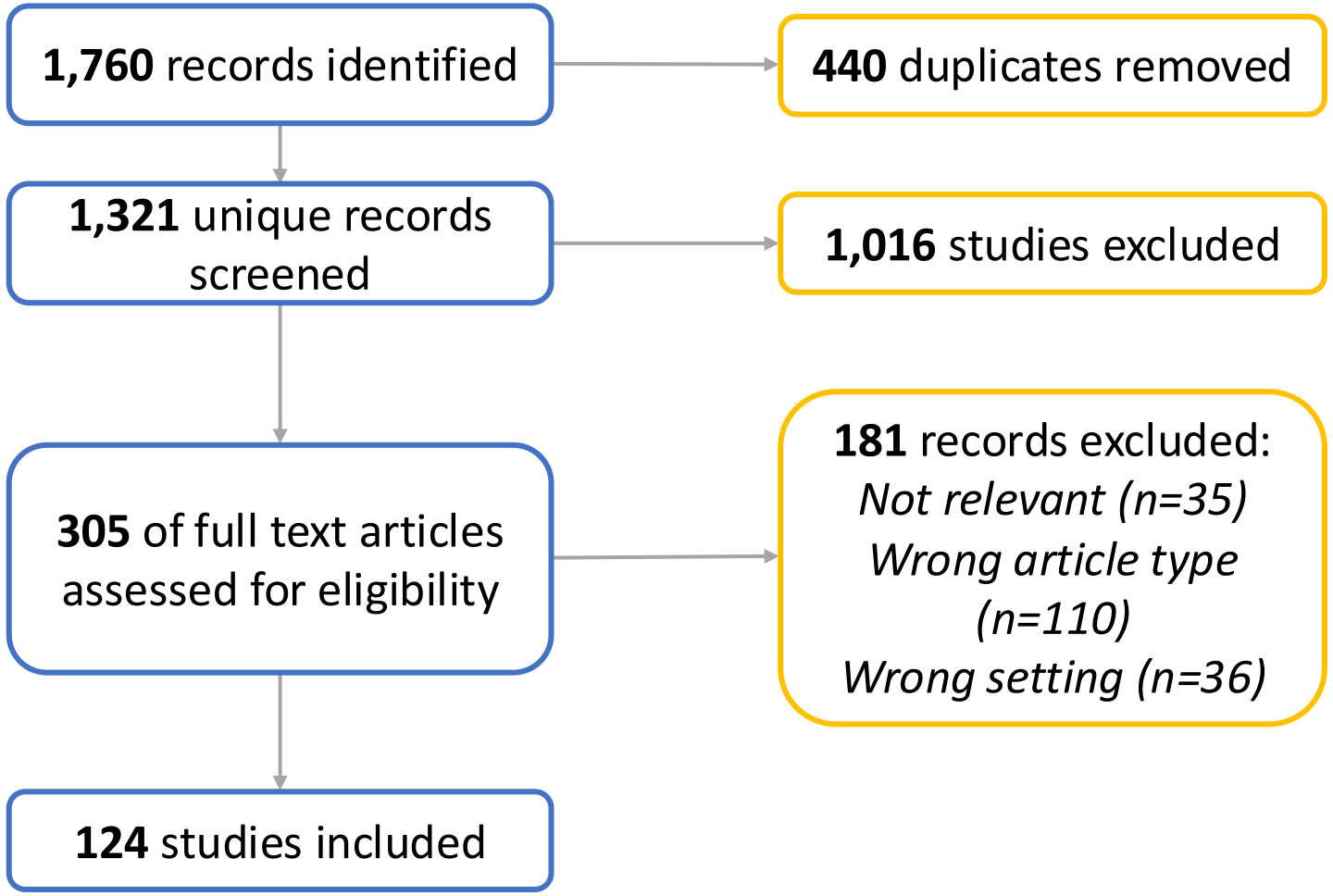
Study Overview



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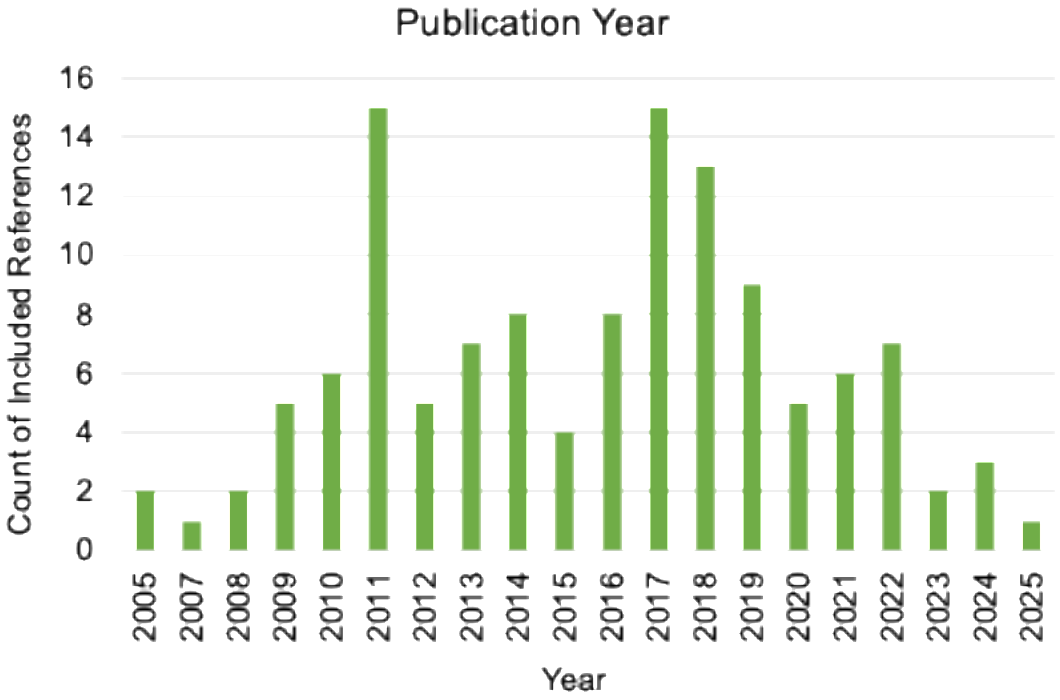
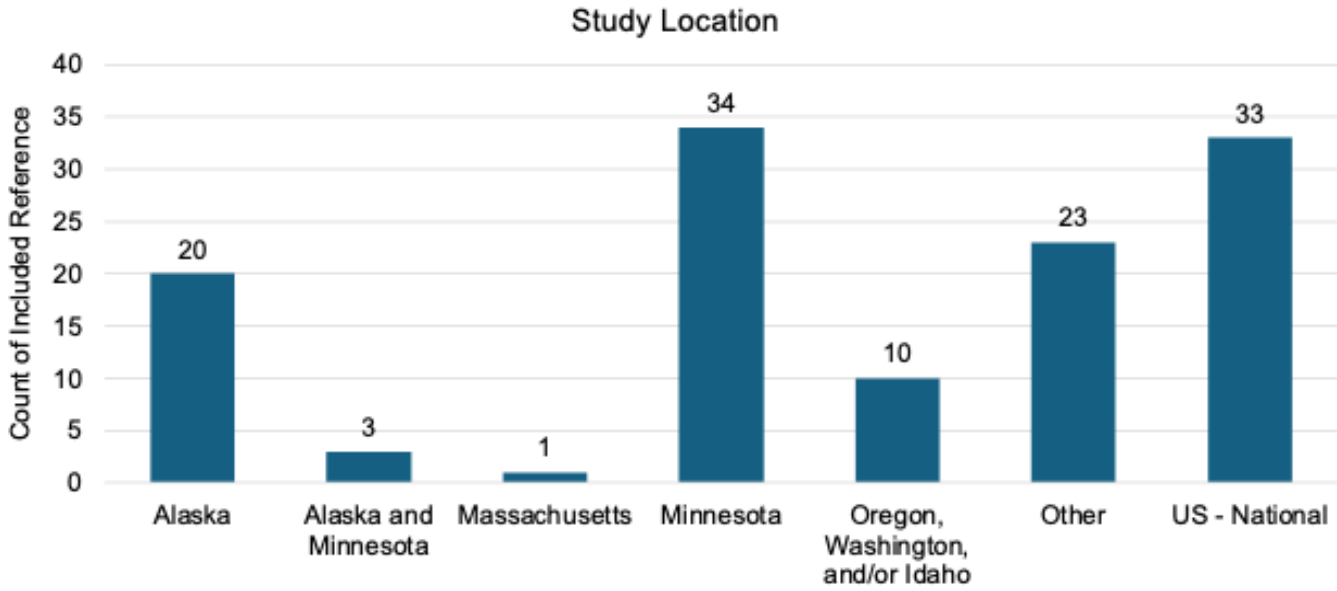
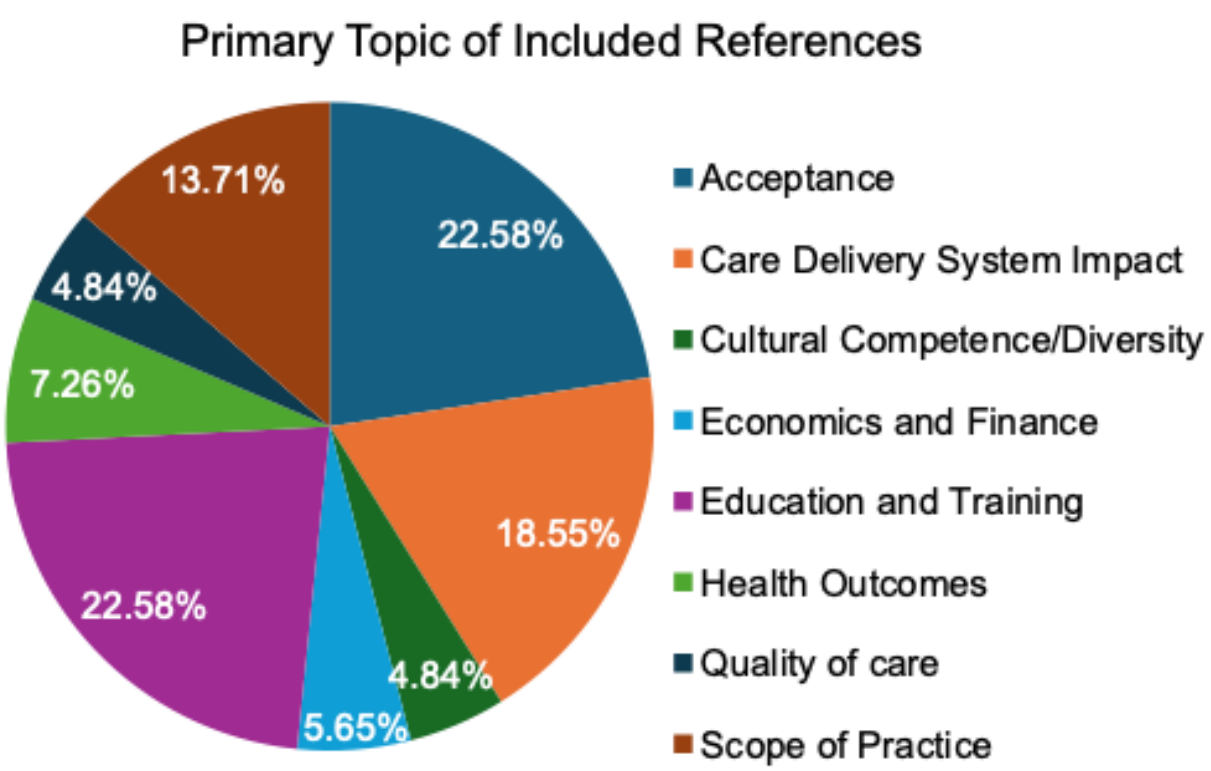
Evidence Overview

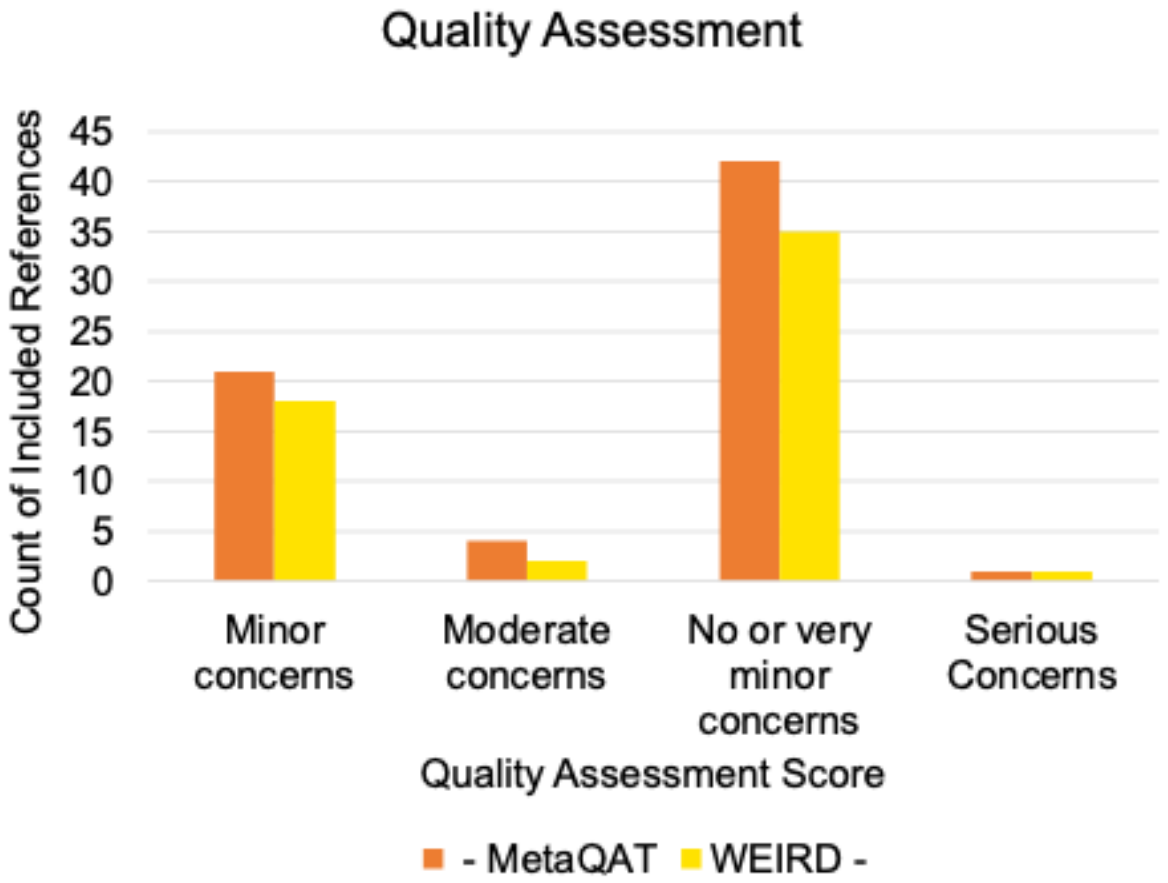




"Other" includes: North Carolina, Connecticut, Wisconsin, Colorado, Kentucky, Maryland, Tennessee, Michigan, as well as papers that cover multiple states

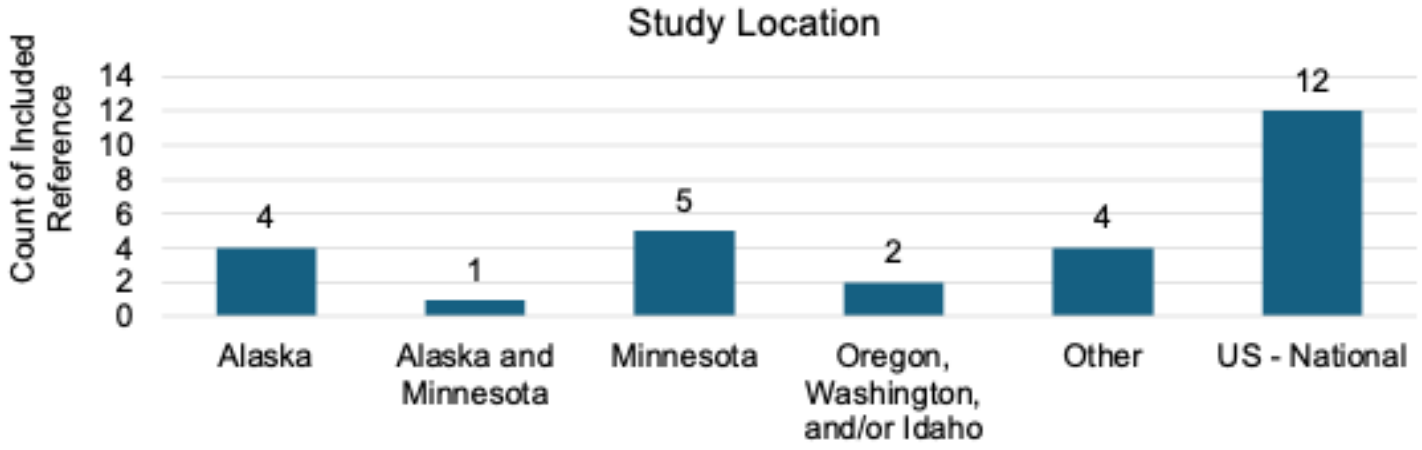
Evidence Overview

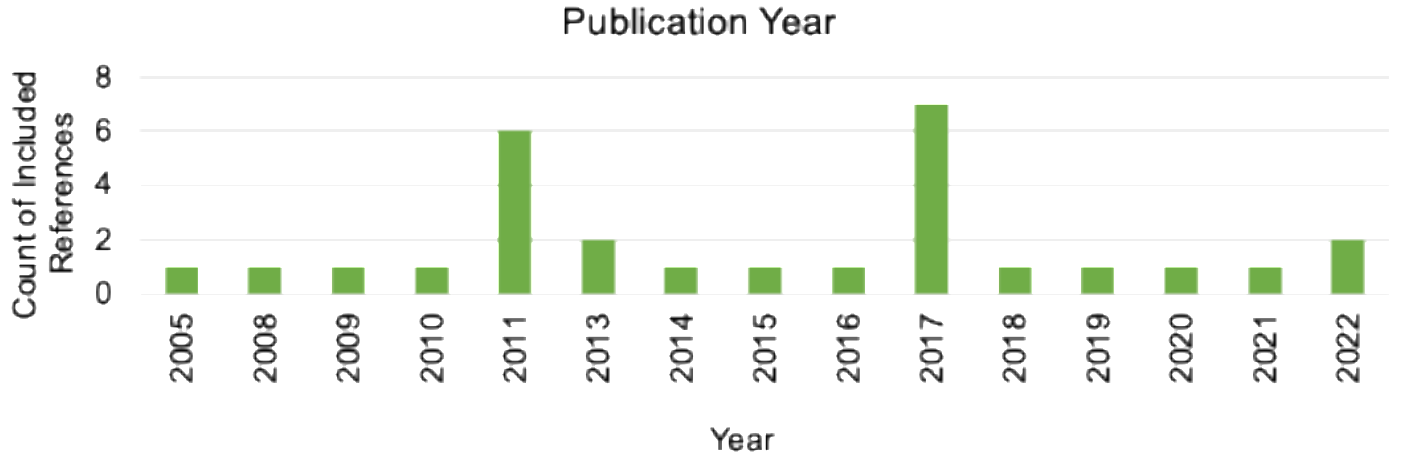




Education

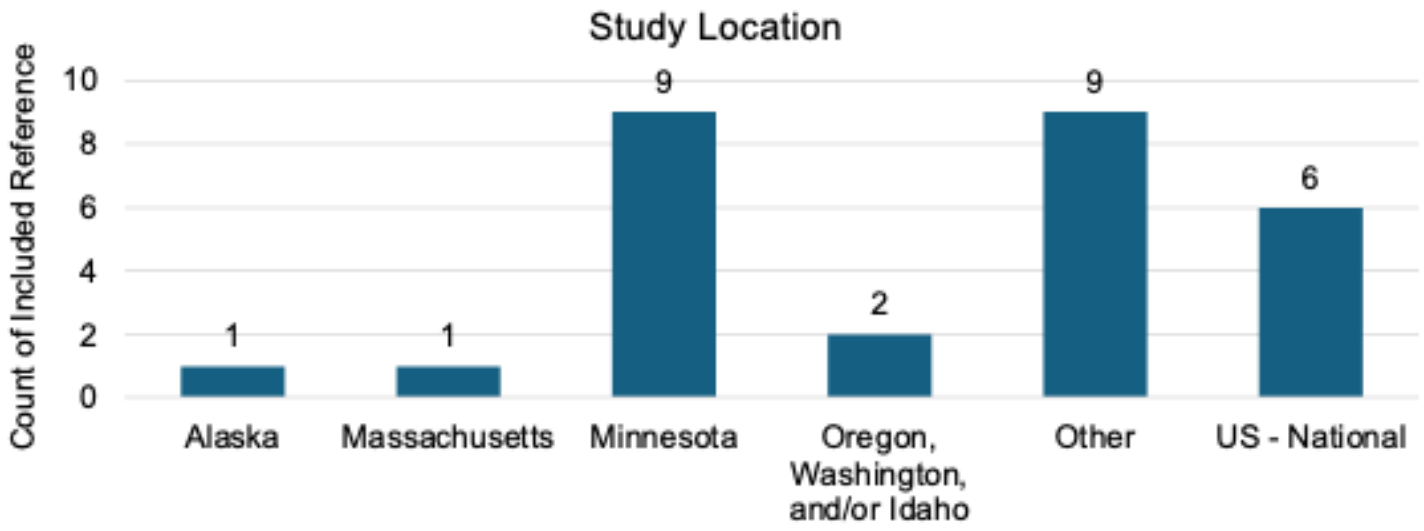
- Models of education: Early articles focused on describing what dental therapy education should look like compared to what existing programs actually look like. Recent articles compare the existing programs and how the differences in programs may impact the future of the profession.
- Dental therapy regulation: Early articles described how dental therapy should be regulated while later articles documented the process by which individual states determined regulations for education and assessed pilot efforts to educate dental therapists
- Attitudes and perceptions of educational program stakeholders: Descriptive and analytic studies captured the attitudes/perceptions of faculty related to educating dental therapy students as well as student's attitudes and perceptions to many different factors relating to their education

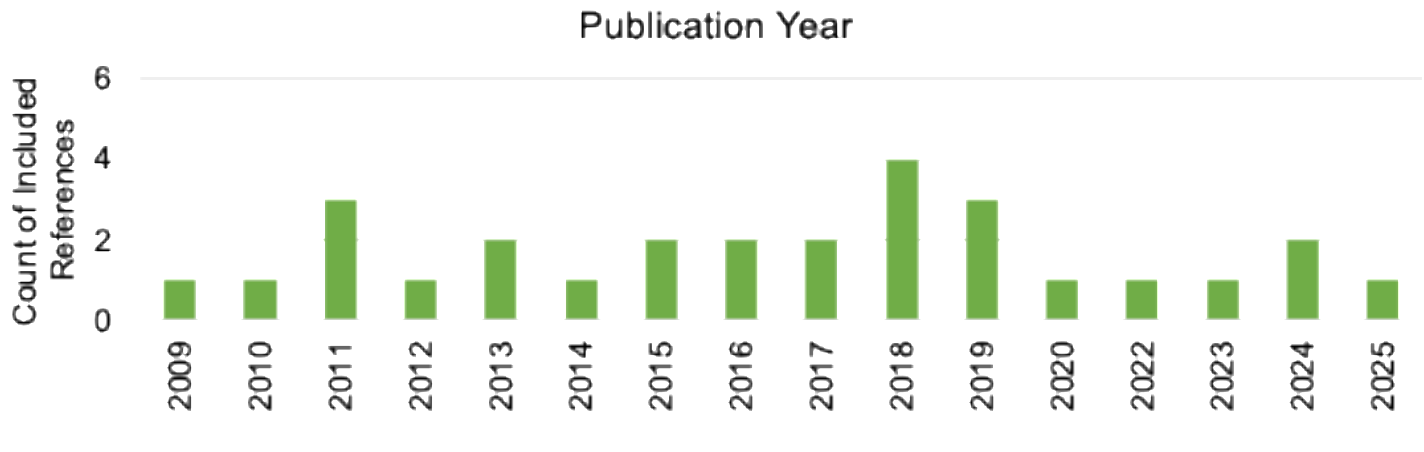




Acceptance

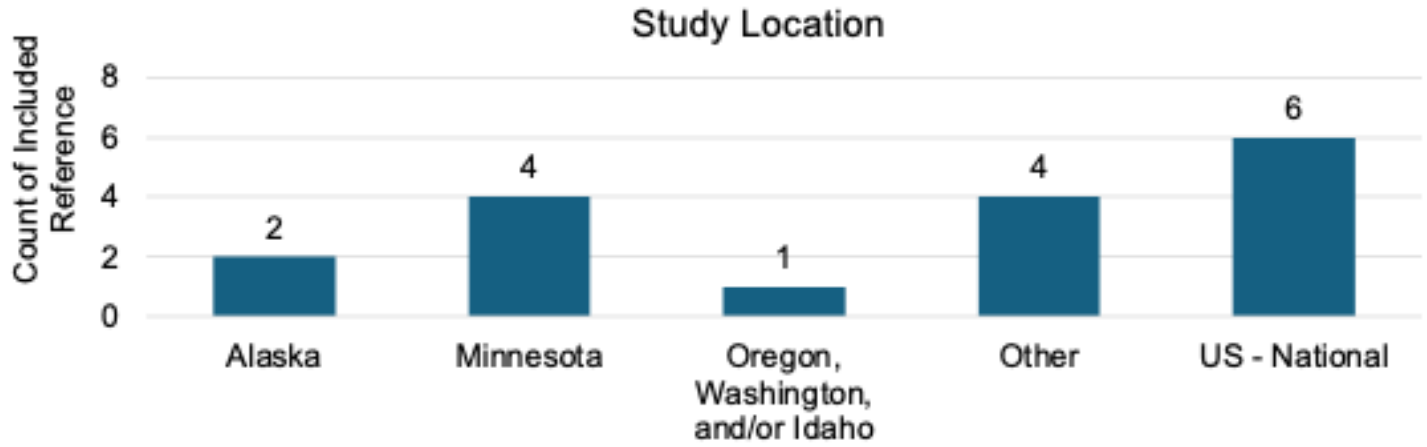
- Dentists are the group most resistant to the concept of dental therapy, though dental school faculty were more receptive to the concept than private practice dentists. As dental therapy became more widely understood, dentists' attitudes tended to become more positive.
- Surveys of other groups (dental hygiene educators, dental hygienists and consumers), following deployment of DTs in Minnesota, tended to be supportive of DTs.
- Surveys of hygienists asked about their interest in becoming dental therapists and the response was generally positive.





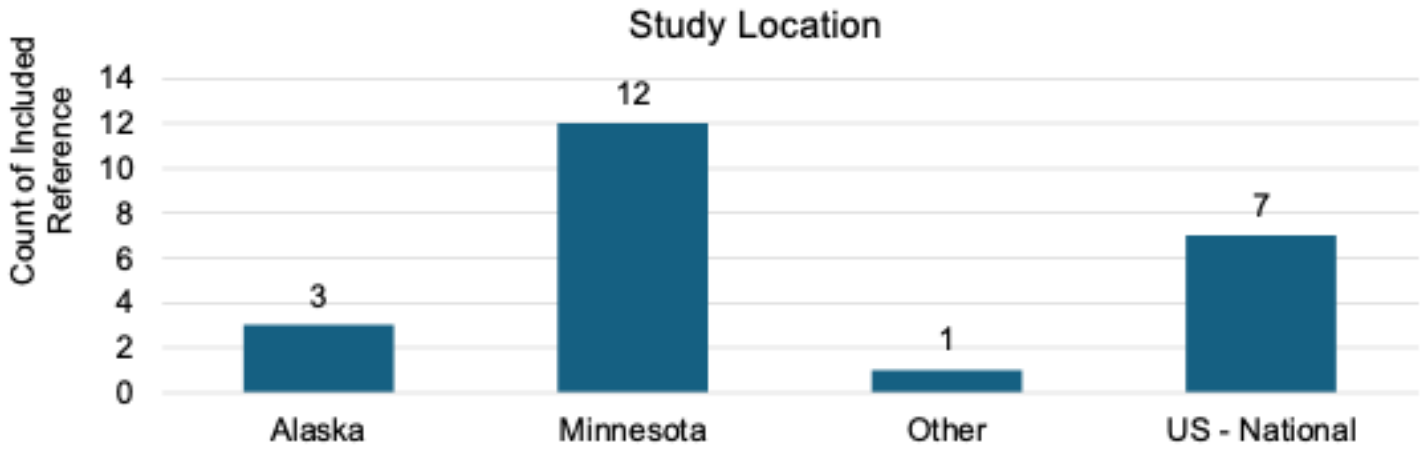
Scope of Practice

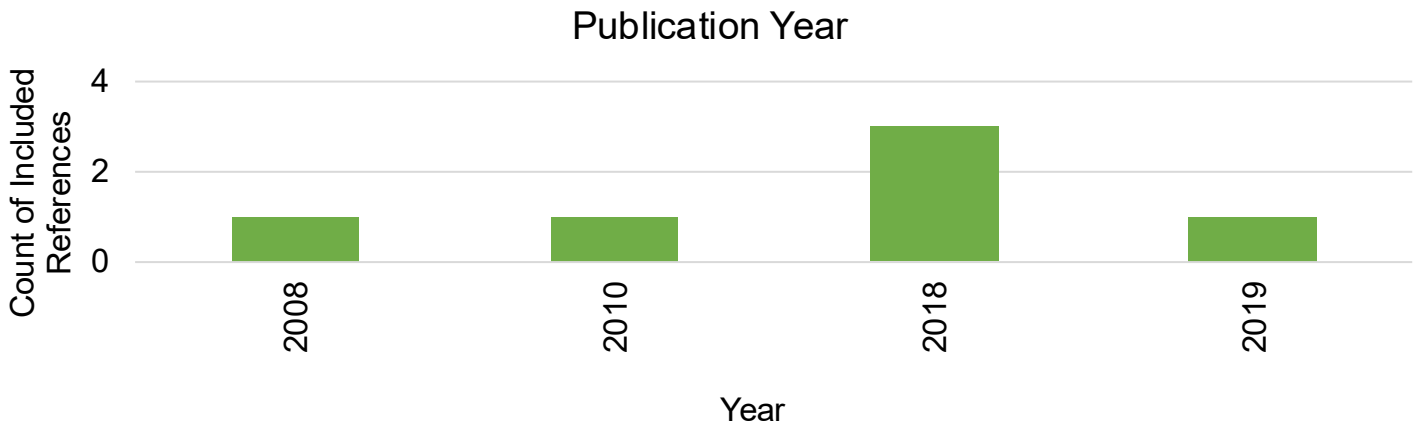
- There is growing acceptance of the need for DTs to increase access to oral health care and consensus across stakeholder groups that the DT should be trained to perform evaluations and common restorative procedures.
- Variation in prerequisite training, degree requirement, tasks permitted, levels of supervision, and patient populations across states inhibits licensure portability.

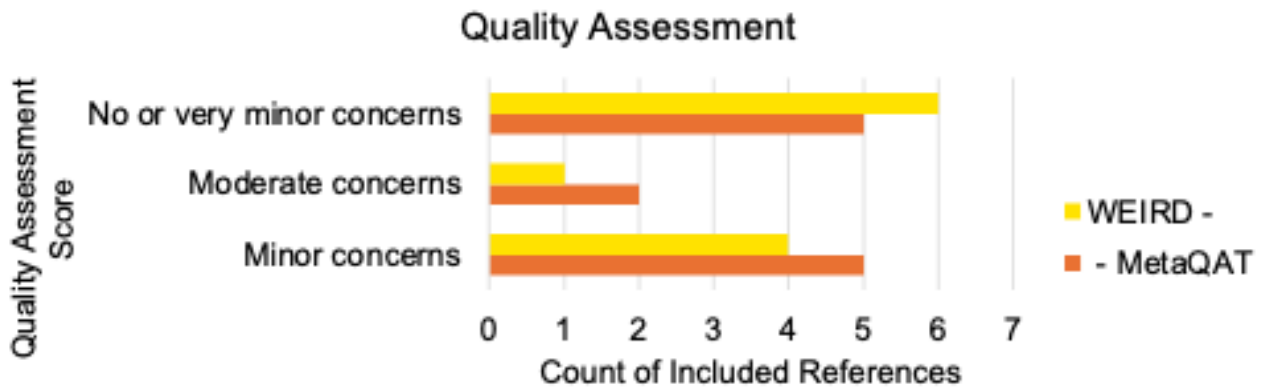


Care Delivery System Impact

- Many of the studies described or analyzed the successful practices of dental therapists in single sites or systems
- In Minnesota, annual updates on the state of the profession using license and survey data to describe the field
- Hypothetical modeling studies predict impact on the economics and operations of practices, or describe how they can be integrated into care systems
- Work in AK and MN, where DT's have been working the longest, show positive impact on access and health outcomes. (Chi, Elani)

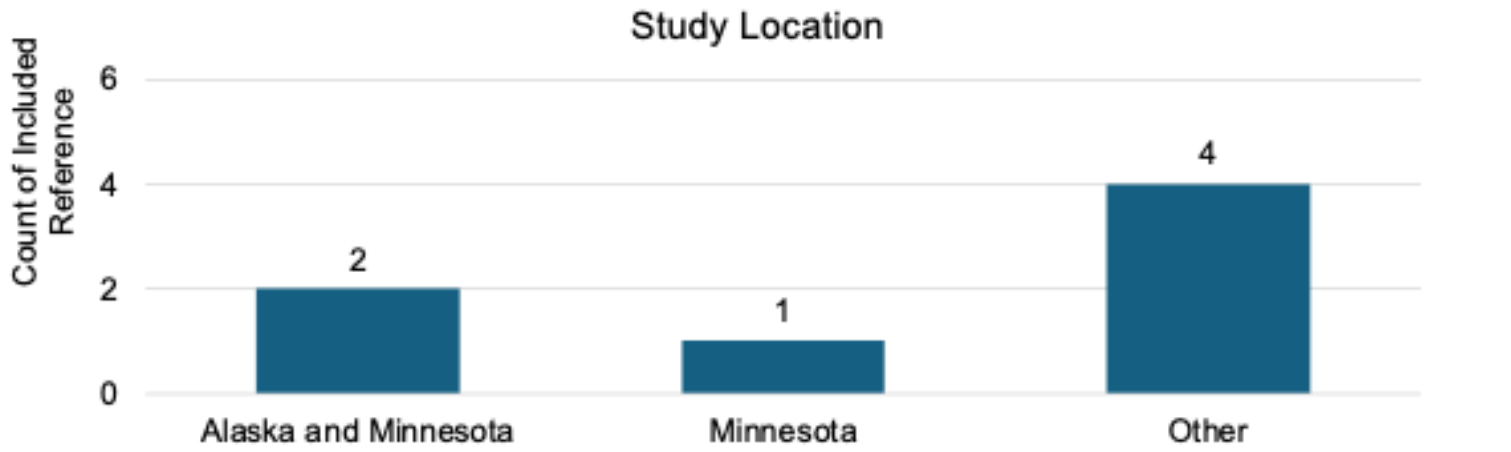


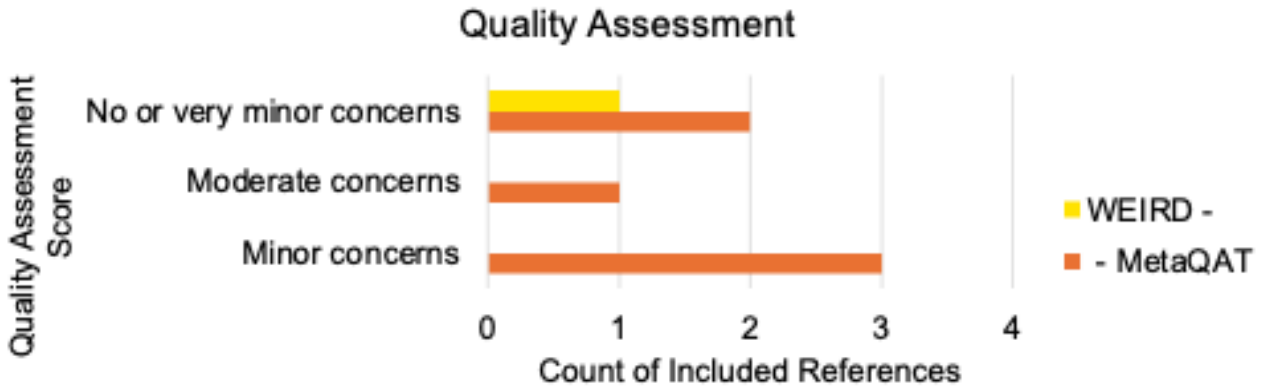




Economics

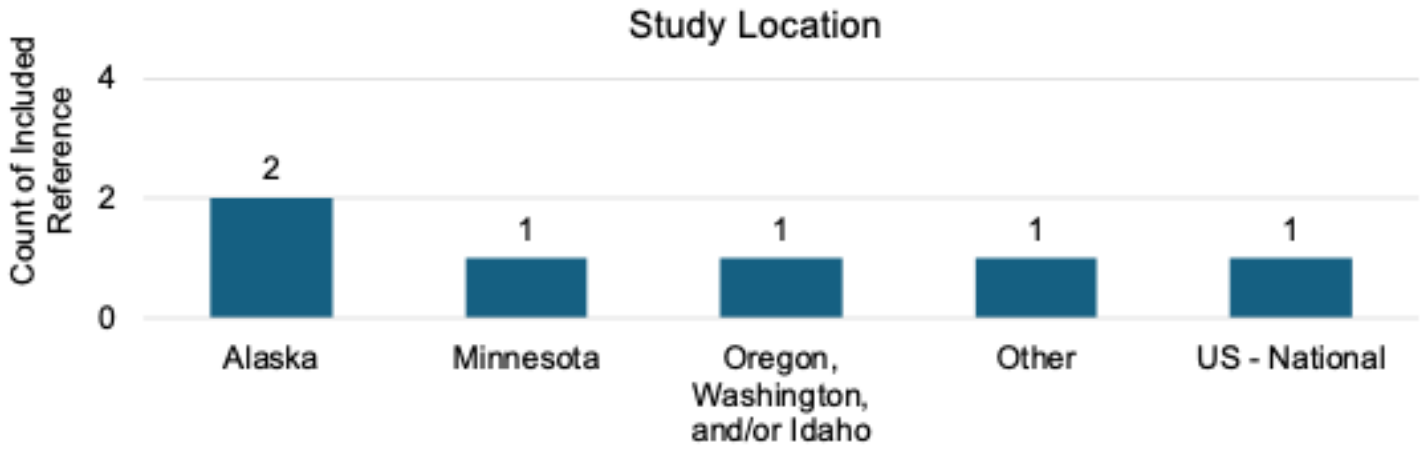
- Hypothetical modeling studies predict the impact on finances
- Case studies of single sites or practices also touch on the financial impact
- Themes include
  - DTs increase productivity and profit for the settings in which they are employed,
  - DTs increase dentists' availability for high-skilled procedures,
  - DTs increase Medicaid/CHIP utilization.

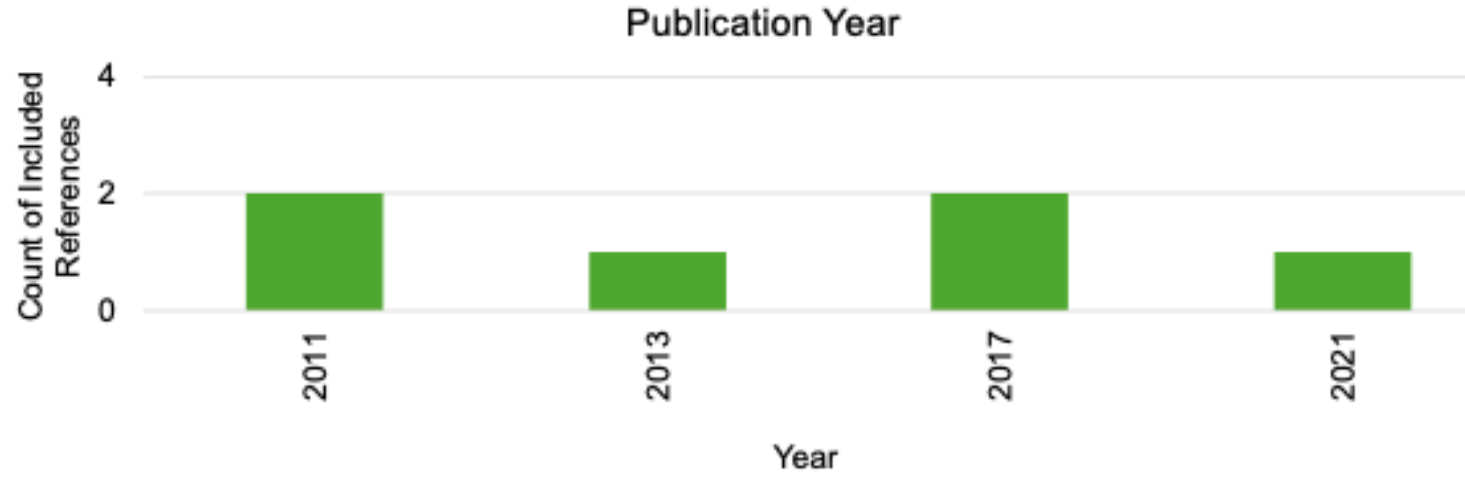




Cultural Competency & Diversity

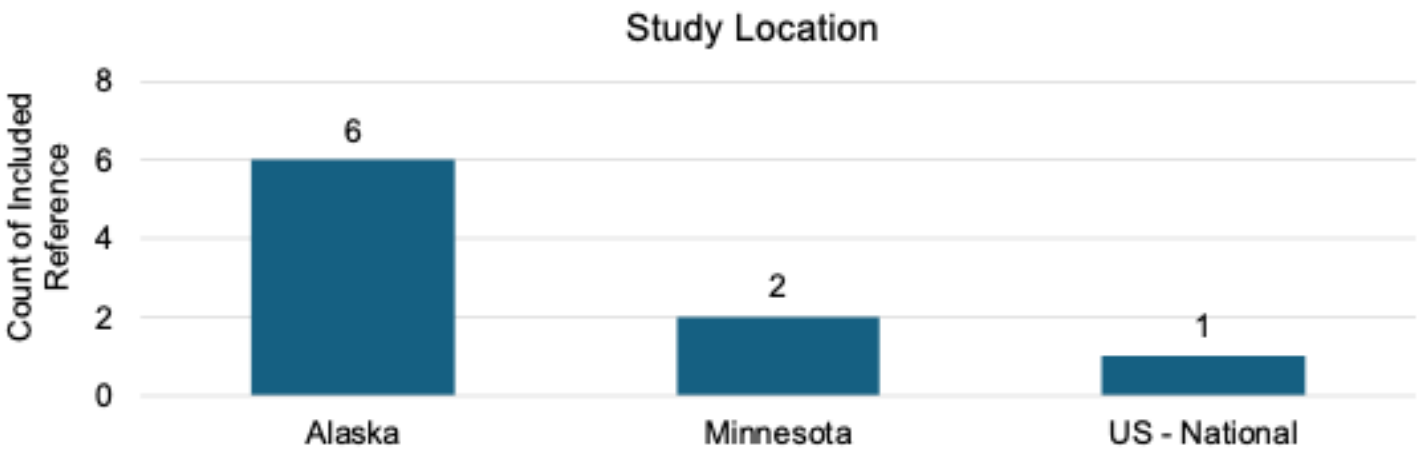
- Themes include
  - enhancing the diversity of the dental care workforce.
  - the importance of tribal representation and reinforcement of tribal sovereignty
  - the positive effect of cultural competence on patient trust and health outcomes
- Descriptive Studies in this category included qualitative work based on personal narratives and interviews with community members served by dental therapists.





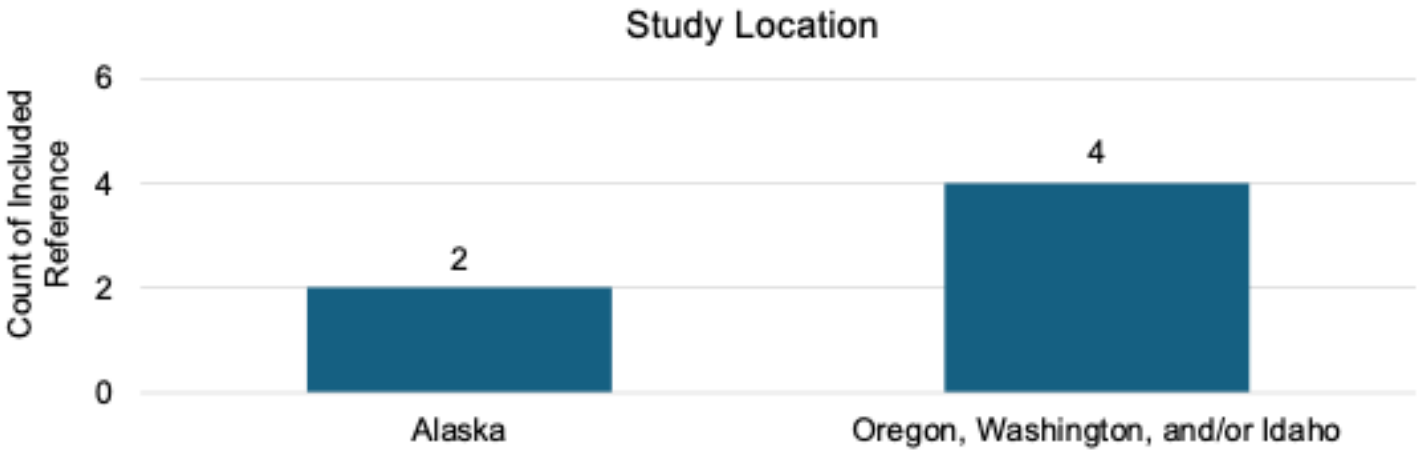
Health Outcomes

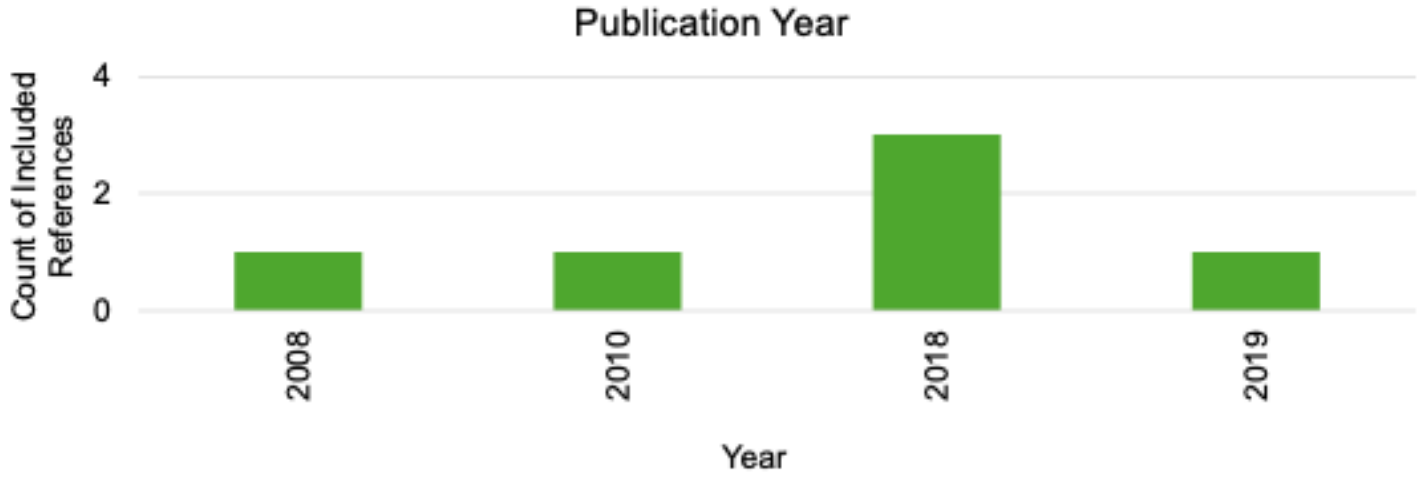
- Descriptive Studies in this category included studies on the clinical quality of treatment provided by dental therapists (2008-2011). These were based on early quality evaluations of restorations placed by dental therapists as well as competency evaluations of graduating dental therapists and dental students.
- Analytic Studies in this category included community-level evaluations of the supply of treatment provided by dental therapists and dentists (2017-2020). These were based on claims data associated with dental therapists and dentists.

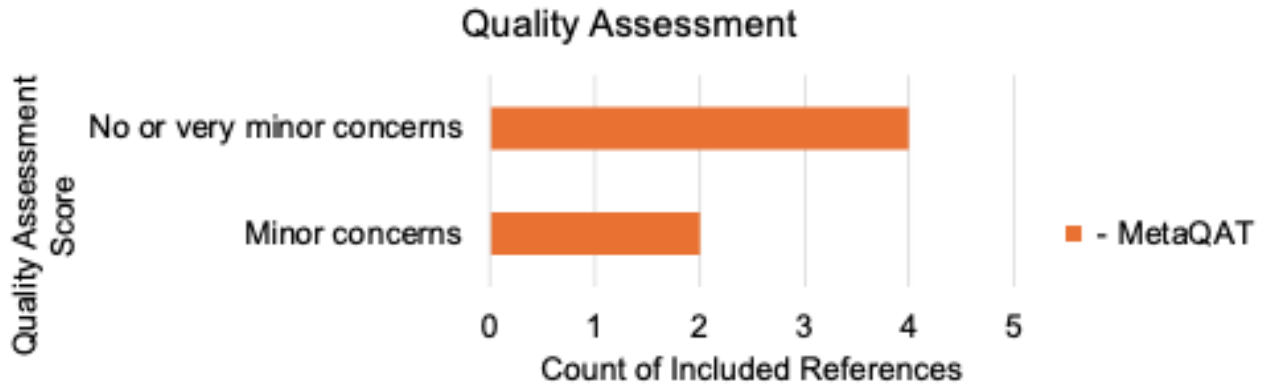


Quality of Care

- Several of these studies were site visit reports from Oregon's pilot project.
- Focus of the remainder of the studies was on technical performance, supervision and treatments provided in AK and MN
- Clinical performance was consistently on par with dentists. Furthermore, there were no instances of patient harm or irreversible adverse effects
- Patient experience and satisfaction are important components of care quality, and both were positive in qualitative assessments







Conclusions

- A significant body of research has been amassed since 2005 on the education and practice of dental therapists in the US. All of it is positive. The impacts on health equity are compelling.
- Much of this literature is descriptive in nature, although more recent work in areas with longer-standing programs is starting to have more data on outcomes. Human subjects and theoretical framing are key concerns with the quality of the research studies meeting inclusion criteria
- Gaps exist in most topical areas; however, it is unlikely we will fill these gaps until there is wider implementation and adoption for broader population or comparative research.
  - Economic research may be stymied by health system resistance to providing research access to patient and system level data
  - Quality of care outcomes research may be stymied by overarching problems with studying these issues in all dental care settings (ie. Lack of diagnostic codes)

Partners in the work

UCSF Healthforce Center

- Aubri Kottek, MPH, Research Analyst, UCSF School of Dentistry
- Miranda Werts, MPH, Research Analyst, UCSF School of Dentistry

Faculty Partners

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- Margie Langelier, MSHSA, Co-Deputy Director, Center for Health Workforce Studies, University at Albany, SUNY
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Questions?

- For more information, please email me at: elizabeth.mertz@ucsf.edu

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