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Sharing voice during deliberative engagement to improve guideline adherence in dental clinics: Findings from a qualitative evaluation of an online deliberative forum discussion

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Sharing voice during deliberative engagement to improve guideline adherence in dental clinics: Findings from a qualitative evaluation of an online deliberative forum discussion

Sharing voice

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Abstract

Objectives: Selecting effective implementation strategies to support guideline-concordant dental care is a complex process. For this research project, an online deliberative forum brought together staff from dental clinics to discuss the strengths and weaknesses of implementation strategies and barriers to implementation of a component of a dental (pit-and-fissure) guideline. The goal was to determine whether deliberative engagement enabled participants sharing of promotive and prohibitive voice about implementation strategies to promote guideline-concordant care.

Design: Qualitative analysis of online chat transcripts of facilitated deliberations from 31 small group sessions

Setting: Kaiser Permanente Dental (KP Dental) in the US

Participants: All staff from 16 dental offices

Results: The directed content analysis revealed that participants shared prohibitive and promotive voice when offering critique of the barriers and the implementation strategies suggested by the researchers. The analysis also revealed that the main focus of the deliberations often was not on the aspect of the pit-and-fissure guideline selected by the research team for deliberation.

Conclusions: The deliberative forum discussions was a productive venue to ask staff in dental clinics to share their perspectives on strategies to promote guideline-concordant care as well as barriers. Participants demonstrated prohibitive voice and engaged critically with the materials the research team had put together. An important limitation of the deliberation was that the discussion often centered around an aspect of the pit-and-fissure guideline that already was implemented well. To ensure a deliberation oriented towards resolving challenging aspects of the pit-and-fissure guideline, greater

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familiarity with the guideline would have been important, as well as more intimate knowledge of the current discrepancies in guideline-concordant care.

Strengths and limitations of this study

- This study used deliberative forums that to our knowledge have not been tested previously in healthcare for engaging staff members in selecting implementation strategies to improve guideline-concordant care
- Our findings tentatively suggest that deliberative forums could be an appropriate tool to engage medical staff in the deliberation of implementation strategies
- An important insight was that medical staff need to be familiar with the relevant guideline to support deliberations that are focused on the appropriate content of a guideline

Trial registration: This project is registered at ClinicalTrials.gov with ID NCT04682730. The trial was first registered on 12/18/2020. https://clinicaltrials.gov/ct2/show/NCT04682730

Keywords: Guideline-concordant care, implementation, evidence-based dentistry, deliberative engagement, participant voice, qualitative analysis

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Introduction

The implementation of evidence-based guidelines into routine medical care is recognized as an important step in closing the evidence-to-practice gap and improving health outcomes (1, 2). Supporting the effective implementation of such guidelines to ensure guideline-concordant care, however, is a well-recognized challenge (3-5). Implementation strategies, defined as "methods or techniques used to enhance adoption, implementation and sustainability of a clinical program or practice" (6) are an important tool. Selecting appropriate implementation strategies, however, is a complex process, and there is no clear consensus on which methods are most effective (7).

Deliberative engagement is an approach originating in political science that seeks to increase public participation in decision-making by public institutions (8) and may offer a novel approach to deliberate the strength and weaknesses of implementation strategies. During deliberative discussions, citizens are brought together to discuss their perspectives on a given topic. At the core of deliberative engagement rests the assumption that people develop a more informed opinion about issues when they have an opportunity to engage with expert information and the diverse perspectives of others in well-structured discussions (9). When provided with the informed opinions resulting from deliberative engagement, public officials are able to take complex considerations into account when crafting policy, resulting in decisions that both reflect public input and enjoy greater legitimacy among them (10). In a similar vein, clinic leaders making decisions about implementation strategies based on providers' and staffs' informed opinions may make better informed decisions that enjoy wider support by staff.

The concept of voice – "intentionally expressing relevant ideas, information, and opinions about possible improvements" (11) - captures the notion of speaking up and sharing one own's opinion during deliberative discussions to arrive at an informed opinion. Voice is distinguished into promotive and prohibitive voice (13). Promotive voice focuses on expressions of people's suggestions for improving

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existing work practices or introducing new procedures, while prohibitive voice describes expressions of their concern about existing or impending practices or behaviors that may harm an organization (14-16). For this research project, we designed an online deliberative forum for staff working in dental clinics. Within each clinic, staff members from different professional roles were brought together to debate the strengths and weaknesses of possible implementation strategies to support adherence to one aspect of a sealant placement guideline. These possible implementation strategies were identified by the research team through a systematic, stakeholder-informed process (17). The underlying premise of the research project was that the deliberative forum would enable staff to share their perspectives (including promotive or prohibitive voice) on the implementation strategies and to be able to learn from each other's perspectives. Participants would be then be able to arrive at an informed opinion about the strengths and weaknesses of these implementation strategies. Dental staff would then share their informed perspectives with dental management to inform the selection of implementation strategies that from staffs' perspective are most appropriate for promoting guideline-concordant placement of treatment sealants.

For this article, we have analyzed the transcripts from deliberations from online forums to determine if deliberative engagement supported the sharing of promotive and prohibitive voice about implementation strategies by participants. To our knowledge, there are no previous studies exploring the role of deliberative engagement in debating the strengths and weaknesses of implementation strategies in a health care setting. Understanding if the online deliberative forums are a useful tool to aid the selection of implementation strategies is important, as effective tools are needed to improve implementation of evidence-based practices and consequently clinical behavior change.

Methods

Research setting

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The Kaiser Permanente Dental (KP Dental) program is part of the Kaiser Permanente Northwest (KPNW) integrated health care system and provides comprehensive, prepaid dental care services to over 260,000 dental plan members in Oregon and southwest Washington. KP Dental is a partnership between Permanente Dental Associates (PDA) and the Kaiser Foundation Health Plan of the Northwest. PDA employs over 150 dentists and specialists including 117 general dentists and 9 pediatric dentists providing care in 21 dental clinics. The health plan operates patient care facilities, provides insurance coverage for members, and employs allied dental staff, including dental hygienists and expanded function dental assistants working in the same dental clinics.

For this study, the research team conducted online deliberative forums in 16 dental clinics as part of a stepped-wedge, cluster randomized trial to test the effectiveness of deliberative engagement to identify implementation strategies for the adoption of the pit-and-fissure dental sealant guideline at KP Dental (18). We excluded five dental offices that were oriented to urgent care primarily as a result of the COVID-19 pandemic. The pit-and-fissure dental sealant guideline recommends placement of preventive and therapeutic sealants on occlusal (biting) tooth surfaces (19). Preventive sealants are foremost placed on permanent molars of children and adolescents (20). Therapeutic sealants are recommended for placement on occlusal surfaces to arrest incipient caries (21). Guideline adherence to the placement of preventive sealants was high at KP Dental; however, adherence to the placement of therapeutic sealants was low (see Polk et al forthcoming for more details), and the focus of this study was on improving adherence to this aspect of the guideline.

The deliberative engagement consisted of three stages. During the first stage, all staff working in selected KP dental offices attended a 15-minute presentation. During this presentation, staff received an introduction to the study, an orientation to the deliberative forum, a concise summary of the pit-and-fissure dental sealant guideline, data summarizing the organization's adherence to the guideline regarding placement of therapeutic sealants, information about organizational barriers to improving

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guideline adherence and possible implementation strategies. The barriers had been established during a formative evaluation that had been conducted as part of this study (22). Implementation strategies that had the potential to address these barriers had been identified during a scoping review (see Guerrero et. al 2021 for the identification process). This information was summarized in a workbook that stakeholders received after the 15-minute presentation for self-study (see Polk et. al 2021 for an excerpt of the workbook).

In the second stage of the deliberative engagement, all staff members participated in 90-minute, small-group online forums. The online forums utilized the Common Ground for Action (CGA) platform,[1] where participants exchanged views in chat boxes about barriers and solutions to placing sealants for therapeutic purposes. CGA enables a recursive process during which participants receive guidance and support from facilitators as they make individual choices and reflect on as a group on those choices. Interaction in CGA forums involves participants posting written messages to a running chat thread visible throughout the forums. As a result of the pandemic, we adapted the study design to adopt online engagement; CGA is the only available tool designed specifically to support deliberative engagement online. The third and final stage of the deliberative engagement was the completion of a survey after the forum to enable staff to share their opinions about the most appropriate strategies for implementation in their dental clinics based on their opinions.

For the forum discussion, KP dental staff were assigned to small groups with 4-9 staff members each. The number of groups for each dental clinic depended on the size of the clinic. Research team members assigned clinic staff to small groups which included at least one expanded function dental assistant, at least one dental hygienist, one dentist, and one other office role such as LPN, orthodontist, or front office staff per group. The rationale for assigning staff by role to small groups was to ensure that different

[1] https://www.nifi.org/en/cga-online-forums

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professional roles were represented in each group, as the research team presumed different perspectives on improving guideline-concordant care would be associated with different professional roles.

KP dental staff did not receive incentives for participation. All participants completed all research activities during their work time. Participants received an information sheet that included elements of consent; a waiver of written consent was obtained. The study was approved by the Kaiser Permanente Northwest Institutional Review Board (approval #1394486).

Patient and public involvement

None

Data collection

The small group chat forum discussions were facilitated by professional moderators who were trained in civic engagement. These moderators explained the forum discussion to participants using standardized text that had been prepared before the discussion sessions. Moderators were able to draw on additional standardized prompts during the discussion but also facilitated the discussion spontaneously by responding to participants' questions and remarks, encouraging participation, and ensuring that all participants contributed equally. All exchanges during the deliberative forum were captured in transcripts that were available for download upon session completion. The transcripts for qualitative analysis were randomly selected. The total number of small groups (N) for each dental clinic was randomly assigned a value from 1 to N to determine which small group to pick. The number was then assigned a letter (1=A, 2=B, 3=C, etc.) for each small group within each dental clinic and in total, 31 transcripts (two from each clinic; one clinic had only one small group) were randomly selected for analysis.

Data analysis

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The chat transcripts were analyzed by an experienced qualitative researcher using a directed content analysis approach (23). A directed content analysis approach is guided by existing theory, in this case the assumptions about voice and exchange of diverse perspectives during deliberative engagement described above. Based on this specific theoretical underpinning, four codes were formulated prior to the beginning of the data analysis: "prohibitive voice" was defined as any expressions of participants' concern about existing practices, behaviors, barriers, suggestions and opinions; "promotive voice" was defined as any contributions that aim to improve existing work practices and procedures; "agreement" was defined as any statements supporting positions taken by others or endorsement of the status quo, and "deferral" was defined as deferring to the opinion of others, and/or to powers beyond participants' influence. After coding 2-3 transcripts using these predefined codes, additional codes were added. The final coding dictionary included four additional codes for a total of eight: "confusion about the forum" was defined as any expressions that captured that participants were uncertain about the goal of the forum, "(critical) reflections" were defined as any statements that captured critical thoughts about existing procedures and the deliberative engagement process, "other barriers" were defined as any statements describing what participants perceived as additional barriers to the implementation of the sealant guideline, and "sealant guideline" was defined as any contributions that indicated that participants were uncertain about the content of the sealant guideline or had misunderstood the sealant guideline. The coding dictionary was used to code all 31 chat transcripts that had been selected randomly.

Results

Clinic characteristics

16 clinics participated in the deliberative forum discussions. The number of small groups at each clinic depended on the anticipated number of participants and is listed in Table 1. In total, 363 staff members

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participated in the forum discussions, and 61 small group discussions were held across all clinics and steps.

[Place Table 1 near here]

Findings from analysis of forum chats

The directed content analysis of the chat transcripts revealed that 1) participants engaged critically with the materials prepared for the deliberative forums by sharing voice and that 2) participants demonstrated limited critical engagement with each other's ideas and opinions to identify relevant implementation strategies. We will illustrate both findings in more detail.

1) Participants engaged critically with the implementation strategies suggested by the research team by sharing prohibitive and promotive voice

Across most forum discussions, participants engaged with the suggested implementation strategies. After issuing their initial votes on their preferred implementation strategies, participants had the opportunity to reflect on and respond to a graphic displaying, in aggregate, the groups' preferences related to different strategies. Participants – across all professional roles – voiced their concerns about proposed strategies and barriers.

Some staff members pointed out that placing sealants currently was not a priority. The pandemic had created a backlog of patient visits, and staff in many dental offices felt that it was important to prioritize other activities that would address this backlog. One expanded function dental assistant commented: "This isn't the right time to implement anything new right now. We need to focus on access for our patients that have been waiting for stuff that is already treatment planned."

Many staff members took issue with the implementation strategies proposed by the research team. Several strategies proposed top-down approaches such as developing implementation blueprints, obtaining written commitments by staff, or involving executive boards. Many of these strategies were

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met with resistance: “I think treatment planning should be left up to the professionally trained and licensed provider, who is the one that sees what is actually going on. I don’t feel corporate pressure to diagnose outside a provider’s professional comfort zone will be well received.” [Hygienist] Despite some opposition, others saw value in formalizing implementation steps and appreciated being able to follow a clearly spelled-out workflow: “Formal implementation blueprints adds structure and order, so the workflow is more consistent and efficient. Less running around and losing time.” [Dentist]

In general, many participants perceived the potential positive impact of (implementing) several implementation strategies (i.e., promotive voice). This included the involvement of an expert to better identify qualifying lesions, reminders to place sealants, or changes to the layout of the office:

> “I think changing physical structure could help. You are more likely to do the sealant if everything is readily available than if you have to go looking. I think this also includes thinking about how the treatment plan is laid out and how the appointment is structured. A well-thought-out approach to the appointment is likely to results in more adherence to the policy.” [Dentist]

Few participants suggested new strategies that had not been previously proposed by the researchers for facilitating the implementation of the guideline. Participants nevertheless voiced concerns that placing sealants on incipient caries would require staff to accomplish additional responsibilities without providing more time: “[…] resources are slim and people already feel spread thin, it can be difficult to add “ONE MORE THING” to someone’s plate.” [Clinic manager] At the same time, many other participants expressed their general willingness and openness to implement change, if found necessary.

Participants also expressed their disagreement with the barriers the implementation strategies were meant to address. Many participants mentioned time and staffing as the main reason why sealants were not placed commonly. Regarding time challenges, participants described that dentists need to diagnose the need for a sealant. Usually, a dentist would only check in with a patient at the end of a hygiene visit, when there was not time to place the sealant during the appointment, and patients were unlikely to

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return for a separate appointment only to place sealants. Other barriers mentioned included limited access to appointment times and other treatment priorities, including the limited relevance of sealants for fulfilling KP Dental's mission.

Many participants were primarily concerned about the appropriateness of placing sealants on incipient caries. They were unfamiliar with the evidence, and others disagreed with the evidence, considering the risks outweighing the benefits: "Why do we place sealant on early caries? I think it is best to remove caries and place sealants. There are chance caries will continue to grow under sealants; that is why some providers don't support sealant on early caries." [Dentist] Staff recognized that implementation of the guideline was incumbent on greater support of the guideline by all staff: "Looks to me like this is basically promotion and education regarding the guideline. People won't follow a guideline that is either unknown or unfamiliar to them." [Dentist] Without greater support by all staff, implementation of the guideline was considered challenging.

Throughout the deliberation, participants were appreciative of the opinions of their colleagues and provided support by agreeing and highlighting valuable aspects of each other's views. Colleagues readily backed each other in their disagreement with implementation strategies or barriers. This support and agreement could be observed across professional roles. Regardless of the role of the participant sharing their views, others readily supported their position. The readiness to support each other's views of the implementation strategies, also included participants' interpretation and knowledge of the sealant guideline. Support for each other was displayed very consistently. This support was expressed through statements such as "I agree," "this is true," "you are very correct," "100%" or "ditto."

2) Participants' discussions focused largely on preventive rather than therapeutic aspects of the guideline

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During the coding aimed at understanding how participants engaged voice during the deliberation, the finding that the focus of the deliberation often was not on the focus selected by the researchers emerged inductively. Many participants focused on the aspect of the guideline recommending placement of sealants on sound occlusal surfaces of permanent teeth on children as a prevention strategy. Strategies were debated how guideline-concordant care for placing preventive sealants could be improved: “If we had time and staff I think we all agree that sealants are a good preventive option for patients and we all feel confident in placing them.” [Expanded function dental assistant] Other suggestions included placing sealants at the time of check-up to avoid having a separate appointment, organizing mini sealant clinics to place a lot of sealants on one day or creating lists of potential patients under 12 who were still in need of sealants. At times, participants rejected the notion that guideline adherence needed to be improved, emphasizing that they readily placed *preventive sealants* on children.

In those instances where sealants for therapeutic purposes were debated, participants frequently raised questions or concerns about it. One hygienist wondered: “I don't know all our providers thoughts on placing over decay, it could be a sensitive topic?” A dentist shared that “Some dentists or hygienists may not believe that placing sealants over early occlusal caries is not effective or has potential to harm the patient, may feel license at stake.” This sentiment was also reflected in the statement by another hygienist: “I worry about placing a sealant over something that is not "ok'd" by a Dentist as I have seen decay under sealants.”

Discussion

In this article, we explored the perspectives of dental clinic staff regarding implementation strategies developed to support one aspect of a dental sealant guideline. Dental clinic staff expressed their perspectives during a facilitated, online deliberation. Our analysis showed that the forum was well suited to gather staff input on proposed implementation strategies. Participants expressed prohibitive voice –

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expressions of concerns about proposed work practices – as well as promotive voice – the sharing of ideas for actions and changes to promote guideline concordant behavior - during forum discussions.

However, the focus of the deliberation often was not as intended on deliberating sealants for therapeutic purposes, but for preventive purposes. To our knowledge, the use of deliberative forums as a tool to discuss strengths and weaknesses of implementation strategies with stakeholders has previously not been analyzed.

KP dental staff's expression of prohibitive voice may suggest that KPNW clinics are open, accepting work environments in which employees' can share their perspectives free of fear from negative repercussions. This conclusion follows from existing research (13). Employees' openness to share their critical perspectives plays a crucial role in continuous improvement to advance organizations (24). This willingness to engage critically with suggestions for implementation strategies lays a strong foundation to develop a guideline implementation process that reflects stakeholder input and preferences.

Dental staff rejected many of the suggestions made by the research team about existing barriers and possible solutions to guideline implementation. Participants stated their reasons for considering some implementation strategies and barriers as having low value. They argued that barriers identified by the research team were not the central barriers to guideline implementation (the barriers had been identified based on formative research that included staff input) and proposed other barriers they described as more pressing. Several implementation strategies were disliked, as stakeholders argued that they emphasized top-down decision making.

While these findings tentatively support the feasibility of using deliberative forums for discussing implementation strategies, our analysis also demonstrated that staff needed to enter the deliberations better than they were in this case as they demonstrated limited individual and communal guideline knowledge. This finding emerged inductively during the analysis. It was included in the presentation of

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the findings as it had at least two important implications. First, in those instances where sealants for therapeutic purposes were deliberated, staff questioned the evidence behind the guideline and demonstrated overall little buy-in to the guideline. Staff buy-in to evidence-based care and specific guidelines is seen as crucial for successful implementation, and it has long been reported as a barrier to guideline-concordant care (25). A lack of staff buy-in to the sealant guideline hampered the deliberation as staff questioned the validity of the evidence undergirding the guideline.

Secondly, the discussion frequently centered on a topic not selected by the researchers for deliberation (placement of sealants for preventive purposes). Staff asserted that they were already following the guideline well (true with regard to placing preventive sealants), and therefore did not understand the value of further deliberating solutions. It also impacted their perceptions of the relevance of proposed solutions to implementing the guideline as the initial need to improve adherence was not recognized. There had been several opportunities for staff to learn about the content of the guideline prior to the deliberation as deliberative engagement involves providing participants with resources that support their process of becoming more informed about a given issue. We attempted to increase forum participants' familiarity with the issues by delivering a 15-minute introductory session, by providing a workbook that was structured to encourage active engagement with the material, and by embedding into the online CGA platform resource materials available to the participants on demand.

As described above, despite these resources forum participants had limited knowledge of the guideline content. This suggests that the distribution of educational materials may not have been sufficient to affect knowledge about the guideline; an assumption supported by previous research (26). Personal motivation to learn about the subject matter may also have played a role in participants' readiness to study the workbook prior to the deliberation. Another tool to support that deliberations stay on topic are the presence of subject matter experts to correct factual mistakes or address any questions participants may have about a topic of debate (27, 28). This was not feasible in this context, where guideline

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implementation was deliberated by 61 small groups over several months. It is also uncertain if expert intervention would have been meaningful and effective to achieve improved familiarity with the pit-and-fissure dental sealant guideline.

The participants' limited knowledge of the pit-and-fissure dental sealant guideline was not challenged by colleagues during the deliberation. Participants readily supported each other, their positions, and their reasoning, regardless of the focus of the deliberation and their professional roles and hierarchies. The lack of different opinions could be related to the topic of the deliberation, that is, there may not have been any difference of opinion among them. Possibly, not all knowledge that participants had about the pit-and-fissure dental sealant guideline was always shared. Or, alternatively, there may have been difference of opinion that we failed to elicit. There may have been something about the format of the deliberation, where co-workers were brought together to deliberate a topic, that stifled expression of different opinions. This could be explored further in future research.

Usually in deliberative forums, members of the public who do not know each other are brought together to deliberate a topic they care about. For this research project, we asked co-workers who see each other almost daily at work to engage their difference with regard to the pit-and-fissure guideline. This may have influenced the deliberation as people who have ongoing professional relationships with each other may find it more difficult to critically engage with each other's assumptions and knowledge. Bringing together staff from different dental clinics rather than the same dental clinics may have offered a productive solution. This, however, would make it more challenging to discuss clinic-specific implementation strategies and barriers.

There are several limitations to our research. We did not analyze all available chat transcripts but randomly selected about half of the transcripts for analysis. We examined if deliberative forums enabled participants to share promotive and prohibitive voice about implementation strategies in one organization and regarding one guideline only. It is possible we would have obtained different results if

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we had conducted the study in organizations with different cultures and another guideline. The deliberative forums had initially been planned as in-person events. Due to Covid-19, the study team pivoted to organize the forums as an online chat forum. This may have impacted participant involvement and ability to provide input or engage with each other. Finally, staff were able to participate in the introductory presentation and deliberative forum during their work time, however no specific time was reserved for review of the workbook.

The use of deliberative forums to engage stakeholders in the selection of implementation strategies should be explored further in future research. Sharing information about the guideline and guideline-concordant care prior to the deliberation is an important step of the deliberation process. Exploring ways of sharing this information effectively is crucial for ensuring that a deliberation is informed by the latest evidence and remains relevant. It is also important to better understand why we found little evidence of diverse perspectives on the value of implementation strategies. Did participants all share the same perspective, or does bringing together colleagues from the same workplace hinder critical engagement with each other's perspectives? Future research may look to discover whether the dynamics of selective critical engagement exhibited in this study change when people from different dental clinics engage in deliberation.

Conclusion

In conclusion, the deliberative forum discussions were well suited to ask staff in dental clinics to engage with implementation strategies and barriers to guideline-concordant care. We obtained evidence of both promotive and prohibitive voice. Critical engagement was oriented, however, towards the materials that the research team had put together, rather than with each other's positions and opinions. To ensure a deliberation that was more oriented towards discussing implementation strategies to improve sealant placements on incipient caries on occlusal surfaces, greater familiarity with the guideline would have been important for staff, as well as more intimate knowledge of the current discrepancies in guideline-

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concordant care. While this information had been shared with dental staff prior to the deliberation, it had not been impactful enough for staff to influence the deliberation. Expert intervention and additional training to encourage facilitators to draw out differences among participants could have been a possible tool to shape the deliberation process in ways more oriented toward the stated goal of the deliberate discussions.

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Table 1. Clinic characteristics: Size, number of small groups and number of participants			
	Clinic size*	# small groups	# participants
Vanguard clinic	M	4	25
Step 1: Clinic 1	L	7	46
Step 1: Clinic 2	S	3	16
Step 1: Clinic 3	M	3	27
Step 2: Clinic 4	S	3	18
Step 2: Clinic 5	M	4	22
Step 2: Clinic 6	L	6	36
Step 3: Clinic 7	L	5	37
Step 3: Clinic 8	M	3	20
Step 3: Clinic 9	S	1	7
Step 4: Clinic 10	L	4	22
Step 4: Clinic 11	M	4	17
Step 4: Clinic 12	S	3	15
Step 5: Clinic 13	L	4	20
Step 5: Clinic 14	S	3	15
Step 5: Clinic 15	M	4	20
TOTAL		**61**	**363**

*Clinic size was defined based on the number of dentists and staff employed at each office.

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Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

	Page/line no(s).
Title and abstract	
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1/1-2
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2-3/9-9
Introduction	
Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	4/2-8
Purpose or research question - Purpose of the study and specific objectives or questions	4-5/23-5
Methods	
Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	6/12-17
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	
Context - Setting/site and salient contextual factors; rationale**	5/10-17
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	6/2-19
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	5/19-22
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	6/2-9

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Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	6/2-9
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	6/21-24
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	6/12-17
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	6/12-17
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	7-9/2-6
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Table 2

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	9-12/913-
Limitations - Trustworthiness and limitations of findings	11/9-17

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	13/11
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	13/12-14

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014
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Sharing voice during deliberative engagement to improve guideline adherence in dental clinics: Findings from a qualitative evaluation of an online deliberative forum discussion

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Sharing voice during deliberative engagement to improve guideline adherence in dental clinics: Findings from a qualitative evaluation of an online deliberative forum discussion

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Abstract

Objectives: Selecting effective implementation strategies to support guideline-concordant dental care is a complex process. For this research project, an online deliberative forum brought together staff from dental clinics to discuss the strengths and weaknesses of implementation strategies and barriers to implementation of a component of a dental (pit-and-fissure) guideline. The goal was to determine whether deliberative engagement enabled participants' sharing of promotive and prohibitive voice about implementation strategies to promote guideline-concordant care.

Design: Qualitative analysis of online chat transcripts of facilitated deliberations from 31 small group sessions

Setting: Kaiser Permanente Dental (KP Dental) in the US

Participants: All staff from 16 dental offices

Results: The directed content analysis revealed that participants shared prohibitive and promotive voice when offering critique of the barriers and the implementation strategies suggested by the researchers. The analysis also revealed that the focus of the deliberations often was not on the aspect of the pit-and-fissure guideline intended by the research team for deliberation.

Conclusions: The deliberative forum discussions were a productive venue to ask staff in dental clinics to share their perspectives on strategies to promote guideline-concordant care as well as barriers. Participants demonstrated prohibitive voice and engaged critically with the materials the research team had put together. An important limitation of the deliberation was that the discussion often centered around an aspect of the pit-and-fissure guideline that already was implemented well. To ensure a deliberation oriented towards resolving challenging aspects of the pit-and-fissure guideline, greater familiarity with the guideline would have been important, as well as more intimate knowledge of the current discrepancies in guideline-concordant care.

Strengths and limitations of this study

- This study tested deliberative engagement to engage healthcare professionals in deliberating implementation strategies

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- A strength of the study is that deliberative engagement has not been previously tested in this context
- A limitation of our study is that it involved deliberative engagement online with no comparison made to other methods of eliciting voice, including face-to-face deliberative protocols

Trial registration: This project is registered at ClinicalTrials.gov with ID NCT04682730. The trial was first registered on 12/18/2020. https://clinicaltrials.gov/ct2/show/NCT04682730

Keywords: Guideline-concordant care, implementation, evidence-based dentistry, deliberative engagement, participant voice, qualitative analysis

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Introduction

The implementation of evidence-based guidelines into routine medical care is recognized as an important step in closing the evidence-to-practice gap and improving health outcomes (1,2). Supporting the effective implementation of such guidelines to ensure guideline-concordant care, however, is a well-recognized challenge (3–5). Implementation strategies, defined as "methods or techniques used to enhance adoption, implementation and sustainability of a clinical program or practice" (6) are an important tool. Selecting appropriate implementation strategies, however, is a complex process, and there is no clear consensus on which methods are most effective (7). Expanding the tool kit of available methods to engage healthcare professionals was a goal of this study.

Deliberative engagement is an approach originating in political science that seeks to increase public participation in decision-making by public institutions (8) and may offer a novel approach to deliberate the strength and weaknesses of implementation strategies. Deliberative engagement has been shown to empower citizens of different socio-demographic backgrounds to contribute meaningfully to complex policy discussions (9). For this research study, we designed an online deliberative forum for staff working in dental clinics with the goal of enabling participants to share their voice in deliberations related to improving guideline-concordant care.

The concept of voice – "intentionally expressing relevant ideas, information, and opinions about possible improvements" (10) - captures the notion of speaking up and sharing one own's opinion during deliberative discussions to arrive at an informed opinion. Voice is distinguished into promotive and prohibitive voice (11). Promotive voice focuses on expressions of people's suggestions for improving existing work practices or introducing new procedures, while prohibitive voice describes expressions of their concern about existing or impending practices or behaviors that may harm an organization (12–14).

For this article, we have analyzed the transcripts from deliberations from online forums to determine if deliberative engagement supported the sharing of promotive and prohibitive voice about implementation strategies by participants. To our knowledge, there are no previous studies exploring the role of deliberative engagement in debating the strengths and weaknesses of implementation strategies in a health care setting. Understanding if online deliberative forums are a useful tool to empower professionals to share their voices is

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important, as effective tools are needed to engage healthcare professionals in implementation of evidence-based guidelines.

Methods

Research setting

The Kaiser Permanente Dental (KP Dental) program is part of the Kaiser Permanente Northwest (KPNW) integrated health care system and provides comprehensive, prepaid dental care services to over 260,000 dental plan members in Oregon and southwest Washington. KP Dental is a partnership between Permanente Dental Associates (PDA) and the Kaiser Foundation Health Plan of the Northwest. PDA employs over 150 dentists and specialists including 117 general dentists and 9 pediatric dentists providing care in 21 dental clinics. The health plan operates patient care facilities, provides insurance coverage for members, and employs allied dental staff, including dental hygienists and expanded function dental assistants working in the same dental clinics.

Clinical guideline targeted in the DISGO study: Pit-and-fissure guideline

For this study, the research team conducted online deliberative forums in 16 dental clinics as part of a stepped-wedge, cluster randomized trial to test the effectiveness of deliberative engagement in improving adoption of the pit-and-fissure dental sealant guideline at KP Dental (15). We excluded five dental offices that were oriented to urgent care primarily as a result of the COVID-19 pandemic. The pit-and-fissure dental sealant guideline recommends placement of preventive and therapeutic sealants on occlusal (biting) tooth surfaces (16). Preventive sealants are foremost placed on permanent molars of children and adolescents (17). Therapeutic sealants are recommended for placement on occlusal surfaces to arrest noncavitated caries (18). Guideline adherence to the placement of preventive sealants was high at KP Dental; however, adherence to the placement of therapeutic sealants was low across all clinics with the exception of one (see Polk et al., Testing a Deliberative Democracy Engagement Intervention to Increase Guideline-Concordance Among Oral Health Providers: Results from the DISGO Cluster-Randomized, Stepped-Wedge Trial, forthcoming for more details), and the focus of this study was on improving adherence to this aspect of the guideline. Increasing the placement rates of preventive sealants had

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been the focus of previous, internal implementation efforts at KP dental and also was promoted by a goal set by the Oregon Health Plan for organizations receiving reimbursement for Medicaid patients.

Deliberative forum

During deliberative discussions, citizens are brought together to discuss their perspectives on a given topic. At the core of deliberative engagement rests the assumption that people develop a more informed opinion about issues when they have an opportunity to engage with expert information and the diverse perspectives of others in well-structured discussions (9). When provided with the informed opinions resulting from deliberative engagement, public officials are able to take complex considerations into account when crafting policy, resulting in decisions that both reflect public input and enjoy greater legitimacy among them (19).

The underlying premise of the research project was that the deliberative forum would enable staff to share their perspectives (including promotive or prohibitive voice) on implementation strategies and arrive at an informed opinion about the strengths and weaknesses of different implementation strategies. Dental staff would then share their informed perspectives with dental management to inform the selection of implementation strategies that from staffs' perspective were most appropriate for promoting guideline-concordant placement of treatment sealants.

The deliberative engagement consisted of several steps. First, all staff working in selected KP dental offices attended a 15-minute presentation. During this pre-recorded presentation, staff received an introduction to the study, an orientation to the deliberative forum, a concise summary of the pit-and-fissure dental sealant guideline, data summarizing the organization's adherence to the guideline regarding placement of therapeutic sealants, and information about organizational barriers to improving guideline adherence. The barriers had been established during a formative evaluation that had been conducted as part of this study and involved field observations, interviews with dental leadership and focus groups with dental staff (20). Implementation strategies that had the potential to address these barriers had been identified during a theory-driven scoping review where implementation strategies were evaluated based on existing evidence of their effectiveness to address relevant challenges (see (21) for the identification process and appendix for an overview of implementation strategies). This

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information was summarized in a workbook that stakeholders received after the 15-minute presentation for self-study (see (15) for an excerpt of the workbook).

Then, all staff members participated in 90-minute, small-group online forums. The online forums utilized the Common Ground for Action (CGA) platform,[1] where participants exchanged views in chat boxes about barriers and solutions to placing sealants for therapeutic purposes. CGA enables a recursive process during which participants receive guidance and support from professional facilitators as they make individual choices and reflect as a group on those choices. The moderators were not subject matter experts in dentistry, but trained in civic engagement as is in line with protocols of deliberative engagement. An important responsibility of moderators is to provide equal opportunities for all participants to participate, regardless of professional role. Interaction in a CGA forum involves participants posting written messages to a running chat thread visible throughout the forum. As a result of the pandemic, we adapted the study design to adopt online engagement; CGA is the only available tool designed specifically to support deliberative engagement online. Finally, a survey was completed after the forum to enable staff to share their opinions about the most appropriate strategies for implementation in their dental clinics based on their opinions.

For the forum discussion, KP dental staff were assigned to small groups with 4-9 staff members each. The number of groups for each dental clinic depended on the size of the clinic. Research team members assigned clinic staff to small groups which included at least one expanded function dental assistant, at least one dental hygienist, one dentist, and one other office role such as LPN, orthodontist, or front office staff per group. The rationale for assigning staff by role to small groups was to ensure that different professional roles were represented in each group, as the research team presumed different perspectives on improving guideline-concordant care would be associated with different professional roles.

Ethics considerations

[1] https://www.nifi.org/en/cga-online-forums

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KP dental staff did not receive incentives for participation. All participants completed all research activities during their work time. Participants received an information sheet that included elements of consent and provided the opportunity not to participate in the research activity; a waiver of written consent was obtained. The study was approved by the Kaiser Permanente Northwest Institutional Review Board (approval #1394486).

Patient and public involvement

None

Data collection

Moderators explained the forum discussion to participants using standardized text that had been prepared before the discussion sessions. The facilitators were able to draw on additional standardized prompts during the discussion but also facilitated the discussion spontaneously by responding to participants' questions and remarks, encouraging participation, and ensuring that all participants contributed equally. All exchanges during the deliberative forum were captured in transcripts that were available for download upon session completion. The transcripts for qualitative analysis were randomly selected. The total number of small groups (N) for each dental clinic was randomly assigned a value from 1 to N to determine which small group to pick. The number was then assigned a letter (1=A, 2=B, 3=C, etc.) for each small group within each dental clinic and in total, 31 transcripts (two from each clinic; one clinic had only one small group) were randomly selected for analysis.

Data analysis

The chat transcripts were analyzed by an experienced qualitative researcher using a directed content analysis approach (22). A directed content analysis approach is guided by existing theory, in this case the assumptions about voice and exchange of diverse perspectives during deliberative engagement described above. Based on this specific theoretical underpinning, four codes were formulated prior to the beginning of the data analysis: "prohibitive voice" was defined as any expressions of participants' concern about existing practices, behaviors, barriers, suggestions and opinions; "promotive voice" was defined as any contributions that aim to improve

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existing work practices and procedures; “agreement” was defined as any statements supporting positions taken by others or endorsement of the status quo, and “deferral” was defined as deferring to the opinion of others, and/or to powers beyond participants’ influence. After coding 2-3 transcripts using these predefined codes, additional codes were added. The final coding dictionary included four additional codes for a total of eight: “confusion about the forum” was defined as any expressions that captured that participants were uncertain about the goal of the forum, “(critical) reflections” were defined as any statements that captured critical thoughts about existing procedures and the deliberative engagement process, “other barriers” were defined as any statements describing what participants perceived as additional barriers to the implementation of the sealant guideline, and “sealant guideline” was defined as any contributions that indicated that participants were uncertain about the content of the sealant guideline or had misunderstood the sealant guideline. The coding dictionary was used to code all 31 chat transcripts that had been selected randomly. From the coded text segment, themes were derived that related to the research question.

Results

Clinic characteristics

16 clinics participated in the deliberative forum discussions. The number of small groups at each clinic depended on the anticipated number of participants and is listed in Table 1. In total, 363 staff members participated in the forum discussions, and 61 small group discussions were held across all clinics and steps.

[Place Table 1 near here]

Findings from analysis of forum chats

The directed content analysis of the chat transcripts revealed that 1) participants engaged critically with the materials prepared for the deliberative forums by sharing voice and that 2) participants demonstrated limited critical engagement with each other’s ideas and opinions to identify relevant implementation strategies. We will illustrate both findings in more detail.

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1) Participants engaged critically with the implementation strategies suggested by the research team by sharing prohibitive and promotive voice

Across most forum discussions, participants engaged with the suggested implementation strategies. After issuing their initial votes on their preferred implementation strategies, participants had the opportunity to reflect on and respond to a graphic displaying, in aggregate, the groups' preferences related to different strategies. Participants across all professional roles – voiced their concerns about proposed strategies and barriers.

Some staff members pointed out that placing sealants currently was not a priority. The pandemic had created a backlog of patient visits, and staff in many dental offices felt that it was important to prioritize other activities that would address this backlog. One expanded function dental assistant commented: “This isn’t the right time to implement anything new right now. We need to focus on access for our patients that have been waiting for stuff that is already treatment planned.”

Many staff members took issue with the implementation strategies proposed by the research team. Several strategies proposed top-down approaches such as developing implementation blueprints, obtaining written commitments by staff, or involving executive boards. Many of these strategies were met with resistance: “I think treatment planning should be left up to the professionally trained and licensed provider, who is the one that sees what is actually going on. I don’t feel corporate pressure to diagnose outside a provider’s professional comfort zone will be well received.” [Hygienist] Despite some opposition, others saw value in formalizing implementation steps and appreciated being able to follow a clearly spelled-out workflow: “Formal implementation blueprints adds structure and order, so the workflow is more consistent and efficient. Less running around and losing time.” [Dentist]

In general, many participants perceived the potential positive impact of (implementing) several implementation strategies (i.e., promotive voice). This included the involvement of an expert to better identify qualifying lesions, reminders to place sealants, or changes to the layout of the office:

> “I think changing physical structure could help. You are more likely to do the sealant if everything is readily available than if you have to go looking. I think this also includes thinking about how the treatment plan is

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laid out and how the appointment is structured. A well-thought-out approach to the appointment is likely to results in more adherence to the policy." [Dentist]

Few participants suggested new strategies that had not been previously proposed by the researchers for facilitating the implementation of the guideline. Participants nevertheless voiced concerns that placing sealants on incipient caries would require staff to accomplish additional responsibilities without providing more time: "[…] resources are slim and people already feel spread thin, it can be difficult to add "ONE MORE THING" to someone's plate." [Clinic manager] At the same time, many other participants expressed their general willingness and openness to implement change, if found necessary.

Participants also expressed their disagreement with the barriers the implementation strategies were meant to address. Many participants mentioned time and staffing as the main reason why sealants were not placed commonly. Regarding time challenges, participants described that dentists need to diagnose the need for a sealant. Usually, a dentist would only check in with a patient at the end of a hygiene visit, when there was not time to place the sealant during the appointment, and patients were unlikely to return for a separate appointment only to place sealants. Other barriers mentioned included limited access to appointment times and other treatment priorities, including the limited relevance of sealants for fulfilling KP Dental's mission for providing affordable, high-quality healthcare.

Many participants were primarily concerned about the appropriateness of placing sealants on noncavitated caries. They were unfamiliar with the evidence, and others disagreed with the evidence, considering the risks outweighing the benefits: "Why do we place sealant on early caries? I think it is best to remove caries and place sealants. There are chance caries will continue to grow under sealants; that is why some providers don't support sealant on early caries." [Dentist] Staff recognized that implementation of the guideline was incumbent on greater support of the guideline by all staff: "Looks to me like this is basically promotion and education regarding the guideline. People won't follow a guideline that is either unknown or unfamiliar to them." [Dentist] Without greater support by all staff, implementation of the guideline was considered challenging.

Throughout the deliberation, participants were appreciative of the opinions of their colleagues and provided support by agreeing and highlighting valuable aspects of each other's views. Colleagues readily backed each other

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in their disagreement with implementation strategies or barriers. This support and agreement could be observed across professional roles. Regardless of the role of the participant sharing their views, others readily supported their position. The readiness to support each other's views of the implementation strategies also included participants' interpretation and knowledge of the sealant guideline. Support for each other was displayed very consistently. This support was expressed through statements such as "I agree," "this is true," "you are very correct," "100%" or "ditto."

2) Participants' discussions focused largely on preventive rather than therapeutic aspects of the guideline

During the coding aimed at understanding how participants engaged voice during the deliberation, the finding that the focus of the deliberation often was not on the focus intended by the researchers emerged inductively. Many participants focused on the aspect of the guideline recommending placement of sealants on sound occlusal surfaces of permanent teeth on children as a prevention strategy. Strategies were debated how guideline-concordant care for placing preventive sealants could be improved: "If we had time and staff I think we all agree that sealants are a good preventive option for patients and we all feel confident in placing them." [Expanded function dental assistant] Other suggestions included placing sealants at the time of check-up to avoid having a separate appointment, organizing mini sealant clinics to place a lot of sealants on one day or creating lists of potential patients under 12 who were still in need of sealants. At times, participants rejected the notion that guideline adherence needed to be improved, emphasizing that they readily placed *preventive sealants* on children. In those instances where sealants for therapeutic purposes were debated, participants frequently raised questions or concerns about it. One hygienist wondered: "I don't know all our providers thoughts on placing over decay, it could be a sensitive topic?" A dentist shared that "Some dentists or hygienists may not believe that placing sealants over early occlusal caries is not effective or has potential to harm the patient, may feel license at stake." This sentiment was also reflected in the statement by another hygienist: "I worry about placing a sealant over something that is not "ok'd" by a Dentist as I have seen decay under sealants."

Discussion

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In this article, we explored if deliberative engagement enabled participants' sharing of promotive and prohibitive voice about implementation strategies to promote guideline-concordant care. We found that dental professionals expressed prohibitive voice –expressions of concerns about proposed work practices – as well as promotive voice – the sharing of ideas for actions and changes to promote guideline concordant behavior - during forum discussions and that deliberative forums may be well suited to gather staff input on proposed implementation strategies. However, the focus of the deliberation often was not as intended on deliberating sealants for therapeutic purposes, but for preventive purposes. To our knowledge, the use of deliberative forums as a tool to discuss strengths and weaknesses of implementation strategies with stakeholders has previously not been analyzed. The expression of promotive and prohibitive voice in this context lays a strong foundation to develop a guideline implementation process that reflects stakeholder input and preferences as it reflects a willingness to engage critically with suggestions for implementation strategies. Employees' openness to share their critical perspectives plays a crucial role in continuous improvement to advance organizations (23).

Dental staff rejected many of the suggestions made by the research team about existing barriers and possible solutions to guideline implementation. Participants stated their reasons for considering some implementation strategies and barriers as having low value. They argued that barriers identified by the research team were not the central barriers to guideline implementation (the barriers had been identified based on formative research that included staff input) and proposed other barriers they described as more pressing. Several implementation strategies were disliked, as stakeholders argued that they emphasized top-down decision making.

While these findings tentatively support that deliberative forums can be a tool for eliciting promotive and prohibitive voice regarding the discussion of implementation strategies, our analysis also demonstrated that staff needed to enter the deliberations better prepared than they were in this case as they demonstrated limited individual and communal guideline knowledge. This finding emerged inductively during the analysis. It was included in the presentation of the findings as it had at least two important implications. First, in those instances where sealants for therapeutic purposes were deliberated, staff questioned the evidence behind the guideline and demonstrated overall little buy-in to the guideline. Staff buy-in to evidence-based care and specific guidelines is seen as crucial for successful implementation, and it has long been reported as a barrier to guideline-concordant

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care (24). A lack of staff buy-in to the sealant guideline hampered the deliberation as staff questioned the validity of the evidence undergirding the guideline.

Secondly, the discussion frequently centered on a topic not selected by the researchers for deliberation (placement of sealants for preventive purposes). Staff asserted that they were already following the guideline well (true with regard to placing preventive sealants), and therefore did not understand the value of further deliberating solutions. It also impacted their perceptions of the relevance of proposed solutions to implementing the guideline as the initial need to improve adherence was not recognized.

There had been several opportunities for staff to learn about the content of the guideline prior to the deliberation, as deliberative engagement involves providing participants with resources that support their process of becoming more informed about a given issue. We attempted to increase forum participants' familiarity with the issues by delivering a 15-minute introductory session, by providing a workbook that was structured to encourage active engagement with the material, and by embedding into the online CGA platform resource materials available to the participants on demand.

As described above, despite these resources, forum participants had limited knowledge of the guideline content. This suggests that the distribution of educational materials may not have been sufficient to affect knowledge about the guideline; an assumption supported by previous research (25). Personal motivation to learn about the subject matter may also have played a role in participants' readiness to study the workbook prior to the deliberation. Another tool to support that deliberations stay on topic are the presence of subject matter experts to correct factual mistakes or address any questions participants may have about a topic of debate (26,27). This was not feasible in this context, where guideline implementation was deliberated by 61 small groups over several months. It is also uncertain if expert intervention would have been meaningful and effective to achieve improved familiarity with the pit-and-fissure dental sealant guideline.

The participants' limited knowledge of the pit-and-fissure dental sealant guideline was not critically assessed by colleagues during the deliberation. Participants readily supported each other, their positions, and their reasoning, regardless of the focus of the deliberation and their professional roles and hierarchies. The lack of different opinions could be related to the topic of the deliberation, that is, there may not have been any difference of

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opinion among them. Possibly, not all knowledge that participants had about the pit-and-fissure dental sealant guideline was always shared. Or, alternatively, there may have been difference of opinion that we failed to elicit. There may have been something about the format of the deliberation, where co-workers were brought together to deliberate a topic, that stifled expression of different opinions. This could be explored further in future research.

Usually in deliberative forums, members of the public who do not know each other are brought together to deliberate a topic they care about. For this research project, we asked co-workers who see each other almost daily at work to engage their difference with regard to the pit-and-fissure guideline. This may have influenced the deliberation as people who have ongoing professional relationships with each other may find it more difficult to critically engage with each other's assumptions and knowledge. Bringing together staff from different dental clinics rather than the same dental clinics may have offered a productive solution. This, however, would make it more challenging to discuss clinic-specific implementation strategies and barriers.

There are several limitations to our research. We did not analyze all available chat transcripts but randomly selected about half of the transcripts for analysis. We examined if deliberative forums enabled participants to share promotive and prohibitive voice about implementation strategies in one organization and regarding one guideline only. It is possible we would have obtained different results if we had conducted the study in organizations with different cultures and another guideline. The deliberative forums had initially been planned as in-person events. Due to Covid-19, the study team pivoted to organize the forums as an online chat forum. This may have impacted participant involvement and ability to provide input or engage with each other. Finally, staff were able to participate in the introductory presentation and deliberative forum during their work time, however no specific time was reserved for review of the workbook.

The use of deliberative forums to engage stakeholders in the selection of implementation strategies should be explored further in future research. Sharing information about the guideline and guideline-concordant care prior to the deliberation is an important step of the deliberation process. Exploring ways of sharing this information effectively is crucial for ensuring that a deliberation is informed by the latest evidence and remains relevant. It is also important to better understand why we found little evidence of diverse perspectives on the value of

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implementation strategies. Did participants all share the same perspective, or does bringing together colleagues from the same workplace hinder critical engagement with each other's perspectives? Future research may look to discover whether the dynamics of selective critical engagement exhibited in this study change when people from different dental clinics engage in deliberation.

Conclusion

In conclusion, the deliberative forum discussions enabled staff to share promotive and prohibitive voice while discussing implementation strategies and barriers to guideline-concordant care. Critical engagement was oriented, however, towards the materials that the research team had put together, rather than with each other's positions and opinions. To ensure a deliberation that was more oriented towards discussing implementation strategies to improve sealant placements on incipient caries on occlusal surfaces, greater familiarity with the guideline would have been important for staff, as well as more intimate knowledge of the current discrepancies in guideline-concordant care. While this information had been shared with dental staff prior to the deliberation, it had not been impactful enough for staff to influence the deliberation. Expert intervention and additional training to encourage facilitators to draw out differences among participants could have been a possible tool to shape the deliberation process in ways more oriented toward the stated goal of the deliberate discussions.

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Table 1. Clinic characteristics: Size, number of small groups and number of participants			
	Clinic size*	# small groups	# participants
Vanguard clinic	M	4	25
Step 1: Clinic 1	L	7	46
Step 1: Clinic 2	S	3	16
Step 1: Clinic 3	M	3	27
Step 2: Clinic 4	S	3	18
Step 2: Clinic 5	M	4	22
Step 2: Clinic 6	L	6	36
Step 3: Clinic 7	L	5	37
Step 3: Clinic 8	M	3	20
Step 3: Clinic 9	S	1	7
Step 4: Clinic 10	L	4	22
Step 4: Clinic 11	M	4	17
Step 4: Clinic 12	S	3	15
Step 5: Clinic 13	L	4	20
Step 5: Clinic 14	S	3	15
Step 5: Clinic 15	M	4	20
TOTAL		**61**	**363**

*Clinic size was defined based on the number of dentists and staff employed at each office.

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Appendix

[Uploaded as supplementary material]

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DISGO

Making It Easier to Implement the PDA Pit-and-Fissure Guideline: Strategies

In the final pages of this workbook, we outline eight strategies that could be used to make it easier to implement the guideline. First we identify four strategies for Barrier One (1-4), then we list strategies 5-8 for Barrier Two.

Addressing Barrier One

Strategy 1:
Assign, train and deploy incipient caries expert in each clinic

Strategy 2:
Provide local and centralized technical assistance

Strategy 3:
Obtain formal written commitments

Strategy 4:
Remind clinicians

Addressing Barrier Two

Strategy 5:
Develop a formal implementation blueprint

Strategy 6:
Model and simulate change

Strategy 7:
Change physical structure and equipment

Strategy 8:
Involve executive boards

When describing each strategy, we indicate the level of evidence supporting the strategy, on a scale of 1-5, with 5 being the strongest. We also identify assets at KPNW that could help you implement these strategies. For each strategy, we ask that you jot down thoughts about why the strategy may or may not work in your clinic. In addition to you reviewing these strategies, we provide space at the end for you to jot down notes about any strategies you may know of that PDA and KPNW leadership should try.

We appreciate your thoughtful consideration of these strategies and we look forward to hearing what you have to say at the forum. Thank you!

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Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

	Page/line no(s).
Title and abstract	
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	1/1-2
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	2-3/9-9
Introduction	
Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	4/2-8
Purpose or research question - Purpose of the study and specific objectives or questions	4-5/23-5
Methods	
Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	6/12-17
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	
Context - Setting/site and salient contextual factors; rationale**	5/10-17
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	6/2-19
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	5/19-22
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	6/2-9

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Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	6/2-9
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	6/21-24
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	6/12-17
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	6/12-17
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	7-9/2-6
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Table 2

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	9-12/913-
Limitations - Trustworthiness and limitations of findings	11/9-17

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	13/11
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	13/12-14

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014
DOI: 10.1097/ACM.0000000000000388

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