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An Analysis of the Adoption and Implementation of Breastfeeding Policies in Washington State Clinics

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Abstract

Breastfeeding policies are a promising systems-level approach to address the disparities in breastfeeding support. While there have been increased efforts to improve hospital maternity care practices, less attention has been focused on the adoption and implementation of similar breastfeeding support strategies in clinics that reach families during prenatal and postnatal care.

This study investigates how the process of developing evidence-based breastfeeding policies and practices is supported or hindered in clinic settings.

Qualitative, semi-structured interviews were conducted with 19 clinic staff at 17 Washington State clinics via phone. For the primary study, the interview guide and coding scheme were developed based upon the Greenhalgh "Diffusion of Innovation in Service Organization Framework". The secondary analysis included an additional thematic content analysis of coded clinic transcripts and synthesis of the themes using the Greenhalgh framework.

Factors that hindered breastfeeding policy adoption and implementation included negative perceptions of breastfeeding policies, inadequate knowledge-sharing networks, limited devoted resources, and lack of leadership buy-in. Components that facilitated the adoption of breastfeeding policies included positive perceptions of breastfeeding policies, engaged champions, adequate staff training, and external motivation through incentives and mandates.

The in-depth evaluation of dynamic breastfeeding policy adoption and implementation provides valuable insight into the drivers and obstacles of policy development. Clinics play an integral role in the breastfeeding continuum of care and would benefit from further policy process research, inclusion in breastfeeding initiatives and adequate financial and technical support.

Keywords: Breastfeeding support; Policy analysis and development; Qualitative methods; Women's health; Breastfeeding; Public health

Introduction

Background

The advantages of breastfeeding for the mother-infant-dyad are well documented [1-5]. Notably, these benefits bear a positive, dose-response relationship with breastfeeding duration and exclusivity [3]. Beyond the health benefits for individuals, breastfeeding yields economic and environmental returns for society [2,6].

In the United States, breastfeeding initiation rates continue to improve, from 71.4% in 2002 to 81.1% in 2013 [7,8]. Meanwhile, rates for breastfeeding duration and exclusive breastfeeding remain below Healthy People 2020 (HP2020) targets and World Health Organization (WHO) recommendations [7,9,10]. U.S. families particularly those from communities of color, low income households, and rural regions face substantial obstacles to achieving their breastfeeding goals [11-15]. Though 80% of expectant mothers intend to breastfeed, 60% do not reach the breastfeeding goals they hoped to achieve [11,12]. This disparity between intent and outcome underscores the need to exercise "collective societal responsibility" to eliminate barriers to breastfeeding including economic obstacles, sociopolitical factors, and inconsistent healthcare access [16-18].

Breastfeeding policies in the continuum of care

Enabling interventions, including evidence-based policies, remove structural barriers to breast feeding [19-22]. In the healthcare setting, breastfeeding policies influence organizational norms, create consistent messaging amongst providers, and promote relevant knowledge and training for staff [22-24]. Collectively, these practices can create a supportive environment for families to achieve their breastfeeding intentions [16]. The United Nations Children's Fund (UNICEF) and World Health Organization's (WHO) Baby-Friendly Hospital Initiative (BFHI) [25] and Ten Steps to Successful Breastfeeding (Ten Steps) [26] are internationally-recognized examples of supportive breastfeeding policies. Evidence that supports these policies and other quality-of-care practices continues to grow [12,27-29]. For instance, DiGiloramo et al. reports that mothers who give birth in hospitals that implement

at least six of the Ten Steps are 13 times more likely to report that they are still breastfeeding at six weeks postpartum [27]. Breastfeeding support within the healthcare sector extends beyond the hospital setting; support throughout a continuum of care involves coordination with clinics and other community health partners [18,30].

Care coordination described by WHO as integrated care [31] is an evolving concept intended to "facilitate the appropriate and effective delivery of health care services both within and across services…" [32]. With enhanced coordination between hospitals and clinics, families receive improved continuity and quality of care for breastfeeding support [2,21,23,33]. Though clinics play an integral role in breastfeeding support during prenatal and postpartum care, limited studies indicate that clinic breastfeeding policies are inconsistent [33,34]. The current body of literature surrounding breastfeeding policies is largely focused upon the hospital setting with limited information regarding clinics [35-37]. It is important to examine the unique influences on policy adoption in clinics so that we can improve breastfeeding care coordination for families.

Study purpose

Breastfeeding policy research that is grounded in theoretical frameworks of organizational change can inform future efforts to improve the adoption and implementation of effective policies [35,38]. By studying the adoption and implementation of breastfeeding policies through an organization-level lens, we can improve our understanding of contextual factors that facilitate or inhibit the process [19,35,37]. Therefore, the purpose of this study is to investigate how the development of evidence-based breastfeeding policies and practices is supported or hindered in clinics using an organization-level diffusion of innovations theory as our framework.

Participants and Methods

General

This article describes the secondary analysis of qualitative data derived from a larger breastfeeding policy study in Washington State. During the planning process for the initial study, the research team sought input from an advisory board composed of sector-specific stakeholders and the Washington State Department of Health (WADOH) breastfeeding workgroup. The advisory board provided input regarding the study design, interview guide development, and participant recruitment. The team utilized the consolidated criteria for reporting qualitative research (COREQ) [39] and Greenhalgh's Diffusion of Innovations in Service Organizations Framework [40,41] to inform the study design.

Analytic framework

Given the complex nature of policy adoption, the research team applied an existing framework for study design and analysis. The selected framework–Diffusion of Innovation in Service Organizations [40] highlights the process and relationships in the diffusion, dissemination and implementation of innovations through an organizational lens. Greenhalgh et al. [40], derived the framework from a systematic review of diffusion of innovation literature. This framework has been applied to illuminate the policy implementation process for electronic medical records, integrated care pathways and telemedicine [40,41]. In the present study the "innovation" was supportive breastfeeding policies and practices. The model contains nine areas of influence in organizational adoption and implementation of an innovation; Table 1 describes the model's key components.

Key component	Characteristics
Innovation	
The key attributes of an innovation (i.e. breastfeeding policies) from the adopter's perspective	Relative advantage Compatibility
	Low complexity
	Trialability
	Observability
	Task issues
	Technical support
Adoption by individuals	
Characteristics which hinder or support an individual's adoption of the innovation	Individual needs
	Motivation
	Values and goals
	Skills
	Learning style
	Social network
Assimilation by the system	
Characteristics of the organizational unit (e.g. project team) and the formal decision-making process	Complex, non-linear process
	"Soft Periphery" elements
System antecedents of the innovation	
The contexts and features of the organization that influence the likelihood the innovation will be adopted	Size and structure
	Receptive context for change
	Absorptive capacity for new knowledge
System readiness for the innovation	
A set of elements which indicate whether an organization is ready to formally assimilate an innovation	Tension for change Innovation-system fit
	Power balances
	Dedicated time and resources
	Monitoring and feedback
Communication and influence	
The influences that spread the innovation both passively (diffusion) and actively (dissemination)	Social networks
	Peer opinion
	Marketing
	Expert opinion
	Champion
	Boundary Spanners
	Change Agents
Implementation process	

Activities during early use which influence the success and sustainability of an innovation	Hands-on approach by leaders External collaboration
	Dedicate resources
	Re-invention, development
	Human resource issues, especially training
	Feedback on progress
Linkages	
Actions and outcomes that highlight connections between key components	Share meanings and mission Effective knowledge transfer between the designing organization and users
	Communication and information
	User orientation
	Project management support
Outer context	
External factors that influence the adoption and implementation of an innovation	Sociopolitical climate Incentives and mandates
	Environmental stability
	Interorganizational norm-setting and networks

Table 1: Key Components of the greenhalgh (2004) diffusion of innovations in service organizations framework.

Interview development and recruitment

The research team incorporated the Greenhalgh [40] framework into interview questions to highlight facilitators and barriers to policy adoption and implementation. Additionally, the WA DOH's Ten Steps for Clinics [36] was used to develop the interview guidebook for the clinic sector. Interviewees were recruited using purposive sampling. Members of the advisory board initially reached out to potential participants via email. For the clinic sector, potential interviewees included front-line staff and providers, breastfeeding coordinators, nurse managers, and administrators. The team contacted interested participants via phone and email; recruitment continued until the pre-determined participation target was achieved. In total, 19 interviewees representing 17 clinics participated in the interview process.

Data collection and analysis

After obtaining consent, trained interviewers conducted 45-60 minute phone interviews. The interviews were audio-recorded and professionally transcribed verbatim (Proof Positive Transcriptions, Garland, Texas). The interviewers offered each participant a $35 gift card for their participation. Interviews were conducted from August 2014 through January 2015. Using the criteria of the University of Washington Institutional Review Board (IRB), this study was exempt from IRB approval.

The research team used qualitative analysis software (Atlas.ti Scientific Software Development GmbH) to organize and synthesize data. Using a selected sample of transcripts (n=16 out of 130, across all sectors), the team used a blinded, thematic analysis process and the Greenhalgh [40] framework to develop a codebook. Once the initial codebook was formed, two or more independent coders applied the initial codebook to 10% of the total interviews (across sectors). The team then reconciled codes and revised the codebook, forming the final guide. Using the finalized codebook, the team double-coded one-third of the transcripts and reached consensus on all coding discrepancies. Once coded, the team reviewed and summarized transcripts to identify themes. The team then merged these key themes into the Greenhalgh framework diagram and presented the preliminary findings to the study's advisory board for confirmation.

For the secondary analysis, we further focused our inquiry to highlight the unique characteristics of clinics that impact breastfeeding policy adoption and implementation; most notably their role in providing a continuum of care for both mothers and babies both before and after birth. We replicated the initial summarization process, concentrating specifically upon the clinic interviews. We then translated the clinic-specific information into the Greenhalgh diagram where we were able to visualize and summarize the cross-cutting themes as facilitators and barriers to breastfeeding policy adoption and implementation that were specific to the clinic setting.

Results

Sample

Our sample represented 17 organizations including pediatric and neonatal clinics, WIC clinics and Federally Qualified Health Clinics (FQHC). The sample was mostly based in the Northwestern Region of Washington, the most populous area of the state. Table 2 for participant characteristics.

Participant characteristics (n=19)		
	Category	**# (%)**
Years in Position	<1	1 (5%)
	1-5	8 (42%)
	6-10	5 (26%)
	11-20	4 (21%)
	21+	1 (5%)
Age	20-35	2 (11%)
	36-45	7 (37%)
	46-55	4 (21%)
	56+	6 (32%)
Sex	Female	18 (95%)
	Male	1 (5%)
Race/Ethnicitya	White	17 (89%)
	Non-White	2 (11%)
	Hispanic	2 (11%)
Clinic characteristics (n=17)		
Size	<25	2 (12%)
	26-49	8 (41%)

	50-99	0 (0%)
	100-199	2 (12%)
	200-499	3 (18%)
	≥ 500	3 (18%)
	Unknown	1 (6%)
Urban/Rural	Urban	14 (82%)
	Rural	3 (18%)
State Region[b]	Central (1)	2 (12%)
[a]Not Mutually Exclusive		
[b]Regions as defined by the WA State Department of Social and Health Services (DSHS)		

Table 2: Participant demographics.

Factors that supported or hindered policy adoption and implementation

The Greenhalgh framework components that were most influential in breastfeeding policy adoption and implementation for clinics were the perceptions of the innovation, system antecedents, organizational readiness, communication and influence, and outer context.

A. **Perceptions of the innovation:** Greenhalgh's framework suggests that to be successfully and widely adopted, an innovation must demonstrate relative advantage, compatibility, low complexity, and limited task issues to the relevant organization [40]. Because the innovation(s) for our study was supportive breastfeeding policies and practices, interviewees described their perceptions based upon personal experiences and clinic-specific characteristics.

1. **Positive attributes of breastfeeding policies and practices:** Breastfeeding policies improved staff and provider accountability and consistency of care for clients. When asked to describe the advantages of a written policy, one interviewee noted,

"I think it's very important, because then you can expect follow-through…Even though it's definitely a main focus here at this WIC clinic and our satellite clinics as well and with the WIC travel team…I think that when you have policies, then it holds people accountable."

Notably, interviewees considered staff and provider accountability an advantage regardless of the level of support by medical providers and staff. Regarding consistency of care, one interviewee captured the importance of written policies as a starting point for consistent messaging. Though their clinic did not have a breastfeeding policy in place, the interviewee noted,

"I think [a written policy] is the starting point or jump-off point where we all get on the same page. We can then begin to speak the same language to our patients with regards to breastfeeding."

2. **Concerns regarding breastfeeding policies and practices:** Alternatively, some interviewees in "policy-laden" work environments described negative sentiments towards "another policy" and time constraints. When asked how their colleagues felt about breastfeeding policies, an interviewee noted,

"I think that they probably just feel like it's one more thing, because at XXX Hospital we have so many policies and procedures about everything. It's like one more thing that we have to fit in."

Other concerns included the perception of policies as inflexible, thus limiting one's clinical judgment. An interviewee noted,

"I would not be opposed to writing a policy that speaks to the encouragement, training, and advocacy for, but when I think of policies sometimes they can be created in black and white."

Lastly, interviewees expressed concerns regarding compatibility between the innovation and the clinic's population. An interviewee highlighted the challenge of adopting a formula free policy for their facility given the specific community served:

"… I don't see us ever taking the role of a formula-free environment. Like I said, our patients are struggling financially and many of them do feed their children formula. To say that we wouldn't have any formula samples available, that would require a much higher buy-in, and I actually don't think that we'd get it."

Overall, the interviewees' perceptions of breastfeeding policies and procedures were grounded in the adopter's personal experiences and the clinic's specific characteristics.

B. System antecedents for innovation: System antecedents for innovation illustrate the organizational contexts that influence the adoption of an innovation. System antecedents include the organization's structure, absorptive capacity for new knowledge, and receptivity for change.

1. Organizational structure: Key factors of organizational structure, including the clinic's size and differentiation, staff makeup, and availability of resources, greatly influenced breastfeeding adoption and implementation. The size of the clinic appeared to influence the level of prioritization for breastfeeding policies. In particular, respondents of non-WIC clinics affiliated with larger healthcare systems often expressed difficulty prioritizing breastfeeding policies with other critical organization responsibilities or interests. When asked to describe the level of prioritization for breastfeeding policies in their clinic, one interviewee noted,

"Well, that's tricky. I feel like XXX Hospital is such a humongous organization with so many different priorities, that even I guess within the OB department I guess I would put it somewhere in the middle priority."

Notably, interviewees from clinics that offered WIC services and clinics affiliated with the Baby-Friendly Hospitals Initiative (BFHI) did not express this concern regarding prioritization. Interviewees also described the relationship between scarce resources and the level of prioritization for breastfeeding policies. While reflecting upon the level of organizational support for the innovation, an interviewee stated,

"Like many things, [leadership is] supportive if you can figure out how to do it within the financial timeframe. I mean, funding right now is a huge issue."

Of note, this finding was not limited to one type of clinic. Dedicated resources not only impacted the level of prioritization, but they also influenced support for breastfeeding training throughout the policy adoption and implementation process. Those with limited financial capacity or limited support from administration reported concerns about providing adequate training for staff.

"We don't have a lot of funding for training right now. XXX County, they used to send people to things all the time. In the last couple of years it sounds like from what I'm hearing they have cut back on that. I am required for like our policies to make sure that everybody actually does hands-on breastfeeding … everybody is required to have at least two trainings depending on which way it goes. I think that I've got everybody covered at this point…It's not as good as it used to be where we would go to big conferences and spend the night or whatever, you know?"

2. Absorptive capacity for new knowledge: Absorptive capacity for new knowledge describes an organization's ability to obtain, translate, and merge new knowledge with pre-existing knowledge. Absorptive capacity also captures an organization's internal and external knowledge-sharing networks.

A clinic's absorptive capacity for new knowledge was influenced by the staff's pre-existing knowledge and opportunities for knowledge-sharing via internal/external networks. Interviewees said most clinic staff gained breastfeeding knowledge through clinical experience and professional training. As illustrated previously, dedicated resources enhanced the organization's ability to train staff consistently and provide continuing education.

Regarding internal and external networks, interviewees highlighted the significant impact of staff that was shared with neighboring Baby-Friendly hospitals. The impact was two-fold: First, staff who had previously worked at Baby-Friendly hospitals had unique expertise for breastfeeding policy development and implementation. Secondly, providers who continued to work at both sites received additional training at Baby-Friendly hospitals. An interviewee captured the impact of this unique connection when describing a clinic's relationship with other healthcare sites:

"Yes, let's see, where we have our main medical clinics in XXX the providers have privileges at XXX Hospital. XXX Hospital is working towards Baby-Friendly and so those docs actually were getting the education; any of the XXX Clinic docs who delivered there were getting, you know ongoing breastfeeding education. Down here in XXX County where we also have an OB program, they have privileges at XXX Hospital which is working towards Baby-Friendly. They'll probably be getting that education, but yes, we do coordinate with others."

3. Organizational readiness: Interviewees described the innovation-system-fit, power balance, and tension for change, as three major factors which influenced a clinic's readiness to adopt and implement breastfeeding policies and practices.

- **Innovation-system-fit:** Innovation-system-fit captures the compatibility between an innovation and the organization's norms, values, mission and overarching goals. When discussing innovation-system-fit, interviewees described key elements including a clinic's overarching goals, flow of tasks, and specific needs of the clinic population served. These components could either facilitate and/or be a barrier to breastfeeding policy adoption and implementation. For example, one interviewee highlighted the compatibility between breastfeeding policies and the organization's overarching mission as a facilitator: "I think because this is WIC, [breastfeeding policy support] is pretty high up there. It's a pretty big part of just kind of every appointment, even though it's not necessarily a breastfeeding appointment and just because of the population that we see and what WIC's mission statement is."
- **Power-balance:** The power balance within an organization is about the quantity and position of those in support of the innovation versus persons in opposition. Interviewees often alluded to a positive power balance for breastfeeding support within their clinic, particularly in clinics with young, female staff and providers. Yet, the balance required to shift the policy adoption process forward was influenced by the position of individuals or groups in the organization. In particular, support or opposition from medical providers and administrators greatly influenced the clinic's momentum for adoption and implementation of breastfeeding policies. For champions who were not in positions of power, leveraging leadership were key facilitator. When asked about the leadership's level of support, one interviewee noted: "I think that it would be pretty high. They just need to have very compelling evidence.…For the infant feeding policy, I think what really moves things is when you have the medical director buy-in. If the medical director is onboard which he is for this, and so I would say that I have high support from him then things move through faster, too."
- **Tension for change:** Tension for change describes the circumstances that staff and leadership perceive a cause for change: such as an undesirable or even "intolerable" situation. Tension for change was a critical facilitator for the adoption of policies, especially in organizations with a negative power balance or neutral support from leadership. Interviewees often described tension for change as motivation spurred by champions in positions of power and external mandates or incentives. As noted previously, clinics affiliated with larger health care organizations that were pursuing Baby-Friendly status were motivated to adopt and implement breastfeeding policies by the situation of potential policy discrepancies.

Communication and individual influence for adoption and implementation: The method in which the innovation is diffused or disseminated is defined as communication and influence in the Greenhalgh model. Modes of communication may vary in formality but are present throughout the policy process.

Boundary spanners, change agents, and champions were critical influences for the adoption and implementation of breastfeeding policies. The level of impact by specific persons was related to their social network, prior knowledge, and level of power within the organization. As noted above, providers and staff who rotated between hospitals and clinics were often identified as boundary spanners and facilitators for clinical breastfeeding policies and practices. An interviewee captured their role as a champion, expert, and boundary spanner within the regional healthcare community when they stated,

"Well, one of the things that I do, because everybody knows that I'm interested in breastfeeding, I'm sort of just the person, you know? If the word breast comes up in a conversation, they all look at me! In some ways, just being me brings breastfeeding into the conversation… I do presentations and journal clubs and teach the fellows. I do a lot of education, formal and informal."

Champions not only laid the groundwork for organizational adoption, but they also supported implementation by providing expert opinion, technical support, and a bridge for healthcare community partnerships.

Furthermore, while champions often laid the groundwork for their clinic's progression towards adoption, the organization's structure and level of readiness also contributed to this complex process. For instance, an interviewee described the intersection of their pre-existing

knowledge and passion with the organization's interest to pursue the Baby-Friendly status:

"Because of the pressure with trying to pass the Baby-Friendly Initiative for the hospital, finally somebody caught on that maybe we should get something done. Luckily, that opened the door for me to be able to do what I have always wanted to do there, and so that worked out pretty well for me."

Outer context and influence in breastfeeding policy adoption: The outer context includes the sociopolitical climate, incentives and mandates, and interorganizational norm setting that influence an organization.

Mandates and incentives from accrediting bodies, professional organizations and federal/state laws strongly influenced the adoption of breastfeeding policies in clinics. The Joint Commission (JCAHO) and the Special Supplemental Program for Women, Infants and Children (WIC) were frequently referenced as levers that shifted the momentum for breastfeeding policy adoption.

"I think that every JCAHO measure is at the very top of the department, the relevant departments' priority list and probably everything else falls under that. I think that will be what it takes for everyone to feel like breastfeeding is super important. Right now I think that everyone feels like it's probably of average importance."

As noted throughout the results, the Baby-Friendly Hospital Initiative (BFHI) alone acted as a catalyst for policy adoption in clinics affiliated with larger healthcare organizations. Of note, this facilitator for adoption did not ensure effective implementation. To that end, technical and financial support was also key facilitators during the policy adoption process. For example, one interviewee from a participating WIC clinic described the impact of financial and technical assistance during policy development: "[The CDC grant] provided funding to take care of the time that it took to pull all this stuff together and see what needed to happen…There were outside players like DOH and [the coordinators of the state breastfeeding coalition] and the CDC….CDC provided the grant money. And then they did a site visit with us, which was really helpful and really nice for them to come out and choose us. That was really good."

Discussion

Summary of barriers and facilitators

Our study illuminated factors that support or hinder breastfeeding policy adoption and implementation in clinics. These elements ranged from individual perceptions about the need for breastfeeding policies in general to organizational characteristics and external, societal, and governmental influences. Interviewees expressed hesitation towards policies they perceived to be "too rigid" or too much of an interference with a mother's choice. At the organization level, clinics often faced competing interests when prioritizing breastfeeding policies, thus limiting momentum for policy adoption. This was especially true in organizations with limited motivation for change. A negative or neutral power balance particularly from leadership–delayed breastfeeding policy adoption and successful implementation. Insufficient resources were often cited as a major drawback for leadership support, policy development, and staff training. Furthermore, lack of adequate training and technical assistance hindered effective breastfeeding policy implementation.

Breastfeeding policies that reflected an organization's mission, goals, and values were viewed positively by leadership and staff. Breastfeeding policy adoption was facilitated in clinics connected with larger organizations when breastfeeding was prioritized from a top-down approach (i.e. WIC or BFHI). Other enabling factors included support form persons or groups in power, considerable pre-existing staff knowledge, and active networks for knowledge-sharing. To that end, champions and boundary spanners facilitated breastfeeding policy adoption and provided technical expertise for effective implementation. Tension for change–resulting from positive power balances and/or external influences–was a tipping point for leadership buy-in. Moreover, external influences, including mandates and incentives from governing or accrediting bodies, formed a catalyst for clinic policy adoption because of the strong incentives for compliance.

Previous research

Our findings compliment previous breastfeeding policy literature, including research in both the clinic and hospital setting. Similar to previous studies, we identified limited financial resources [35], inadequate staff training [19,37], and provider concern for limiting maternal choice [35] as barriers to policy adoption and implementation. Established facilitators included adequate staff training [28], engaged champions [35], collaborative healthcare networks [19], and sufficient leadership buy-in [37].

Our findings expand upon the unique role of external influences as an impetus for policy adoption. This was particularly influential for clinics that were part of larger healthcare systems and/or the WIC program. Given the competing priorities in these organizations, mandates or incentives acted as a catalyst to move the policy adoption process forward [42]. Notably, sufficient resources for development and training, often provided by external funding, were also important to facilitate effective policy implementation [19,28].

Greenhalgh theory

The Greenhalgh framework is a useful tool to understand the complex dynamics of breastfeeding policy adoption. By focusing upon factors at the organization-level, we were able to draw a more complete picture of the complex, varied policy process in healthcare settings. Furthermore, the framework highlighted the intricate links between an organization's structure, knowledge-base, administrative priorities, and external influences and can be used to gain a deeper understanding of leverage points to support comprehensive breastfeeding policy adoption.

Recommendations

Research

Our study offers a descriptive account of the current breastfeeding policy process in Washington State clinics. These findings could inform future policy research, including intervention models that strengthen facilitators and reduce barriers outlined in our study. By focusing upon these factors, research could further refine strategies to expand breastfeeding policy adoption and implementation in clinics. Studies could also incorporate a larger, more geographically-diverse sample to identify common themes and regional nuances. Lastly, research could blend policy process research with quantitative breastfeeding outcomes to advance understanding of the relationship between the development

of supportive breastfeeding policies and breastfeeding exclusivity and duration rates.

Practice

In the U.S., some families face substantial obstacles achieving their breastfeeding goals [19,21]. This often perpetuates disparities in breastfeeding rates and health inequities [11-14]. Supportive breastfeeding policies and practices ameliorate structural barriers and improve consistency of breastfeeding care. This is especially effective when healthcare systems coordinate supportive breastfeeding practices (i.e. coordinated care) across all settings where families receive prenatal and post-partum care [18,21]. The Academy of Breastfeeding Medicine [43,44], US Surgeon General [2], and US Preventative Services Task Force (USPSTF) [30] have each called for increased collaboration across the continuum of breastfeeding care. Nevertheless, there have been limited efforts to enhance breastfeeding care coordination amongst hospitals, primary care clinics and community organizations [18]. The following are recommendations directed towards a) the healthcare sector and b) public agencies and mandating organizations to improve the adoption and implementation of breastfeeding policies both within clinics and across the healthcare system.

Healthcare sector: The healthcare sector can facilitate breastfeeding policy adoption by engaging in current policy initiatives, ensuring adequate staff training, and championing knowledge-sharing networks. Our study highlights the unique impact of the BFHI upon clinic-based services. Though the U.S. Baby-Friendly initiative [45] emphasizes hospitals and birth centers, we observed opportunities to leverage BFHI-type policies for improved breastfeeding care coordination and provider training. By pursuing the Baby-Friendly status, hospitals can support neighboring clinics and improved care coordination. Clinic administrators can apply specific recommendations and protocols such as the Academy of Breastfeeding Medicine Protocols and American Academy of Pediatrics' Breastfeeding Friendly Office Practice guidelines [43,46-47] to advance breastfeeding support within their clinics. Clinic leadership can also facilitate breastfeeding policy adoption and implementation by prioritizing staff training and engagement in knowledge-sharing networks [21,36,47]. Given the discontinuity of breastfeeding care, collaboration across health care professions and settings contributes to successful policy implementation [18,47]. To that end, clinic and hospital healthcare providers can act as boundary spanners to bridge gaps in communication and knowledge-sharing. They can also act as champions to promote supportive breastfeeding practices and provide expert opinion during policy development and implementation [48-50].

Public agencies and accrediting organizations: Public agencies and accrediting bodies can enable policy adoption and implementation through mandates, incentives, and technical assistance. Initiatives such as the Affordable Care Act's mandate for comprehensive lactation support [51,52] and the Pediatric Quality Measure Program's quality indicator for postpartum care coordination [53] act as catalysts for leadership buy-in and help to bridge the gap in breastfeeding care. As noted previously, leaders in larger organizations are particularly responsive to mandates and incentives [42]. Leveraging these points of motivation could improve care coordination [18]. Nevertheless, breastfeeding interventions in the primary care setting have been described as labor intensive and poorly reimbursed [54]. Healthcare reform models [55], such as accountable care organizations (ACOs) [52] and patient-centered medical homes (PCMHs) [56] provide opportunities to improve the quality and continuity of care between prenatal, perinatal, and postpartum settings. In addition, the U.S. BFHI and similar state-led initiatives [57] could be expanded to incorporate clinics and other sectors of the breastfeeding continuum of care [38,58].

Though mandates and incentives are key motivators for policy adoption, these levers face their own unique challenges in the political context. Furthermore, these catalysts do not ensure successful policy implementation. Adequate infrastructure and technical assistance are also key components of policy implementation. Feldman-Winter et al., captured the importance of technical assistance for leadership when describing the CDC National Institute for Children's Health Quality "Best Fed Beginnings" (BFB) [42,59]. This quality improvement initiative included a three-year collaboration to provide technical assistance to leaders in 89 hospitals pursuing Baby-Friendly designation. Though the intervention was designed for the hospital setting, this strategy could be translated to the clinical setting [35,36]. This and similar initiatives highlight the value of technical support for organization administrators throughout the adoption and implementation process [35,36,42].

Limitations and Strengths

There are several limitations that impact the generalizability of this study. First, the initial study used purposive sampling to recruit participants. Since participants were referred by the study's advisory board members, participants likely had previous exposure to supportive breastfeeding policies. To that end, our study was limited by the geographic spread of the clinics, many of which were located in an urban setting; experiences in other clinical settings may not be identical to our findings. Despite these limitations, there is still great value in applying a diffusion of innovations framework to better understand specific organizational factors that help or hinder breastfeeding policy adoption and implementation in clinic settings. Furthermore, findings presented here capture a variety of clinical settings and organizational structures-ranging from rural, public health or WIC clinics to urban, multi-level healthcare organizations.

Conclusion

Using a thematic content analysis, our study highlighted key facilitators and barriers to breastfeeding policy adoption and implementation in Washington State clinics. Given the significant role clinics play in the breastfeeding continuum of care, further research concerning the clinic breastfeeding policy process is warranted. Furthermore, it is essential clinics are included in current supportive breastfeeding policy initiatives and receive adequate technical and financial support to ensure effective implementation.

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Conflicts of interests

The authors declare that they have no conflicts of interest.

References

1. Victora CG, Bahl R, Barros AJ, França GV, Horton S, et al. (2016) Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. Lancet 387: 475-490.
2. Office of the Surgeon General (2011) The Surgeon general's call to action to support breastfeeding. Centers for Disease Control and Prevention.
3. Eidelman AI, Schanler RJ, Johnston M, Landers S, Noble L, et al. (2012) Breastfeeding and the use of human milk. Pediatrics 129: e827-e841.
4. Horta BL, Victora CG (2013) Long-term effects of breastfeeding-a systematic review. World Health Organization, Geneva.
5. World Health Organization, UNICEF (2003) Global strategy for infant and young child feeding.
6. Centers for Disease Control and Prevention (2013) A practitioner's guide for advancing health equity: Community strategies for preventing chronic disease. Health DoC.
7. National Center for Disease Prevention and Health Promotion (2016) Breastfeeding report card: Progressing towards national breastfeeding goals.
8. Li R, Darling N, Maurice E, Barker L, Strawn LMG (2005) Breastfeeding rates in the United States by characteristics of the child, mother, or family: The 2002 national immunization survey. Pediatrics115: e31-e37.
9. World Health Organization (2016) Breastfeeding.
10. Office of diesease prevention and health promotion (2014) Maternal, Infant, and child health. Healthy People.
11. Odom EC, Li R, Scanlon KS, Perrine CG, Grummer-Strawn L (2014) Association of family and health care provider opinion on infant feeding with mother's breastfeeding decision. J Acad Nutr Diet 114: 1203-1207.
12. Perrine CG, Scanlon KS, Li R, Odom E, Strawn LMG (2012) Baby-friendly hospital practices and meeting exclusive breastfeeding intention. Pediatrics 130: 54-60.
13. Lind JN, Perrine CG, Li R, Scanlon KS,Strawn LMG (2014) Racial disparities in access to maternity care practices that support breastfeeding: United States, 2011. MMWR Morb Mortal Wkly Rep 63: 725-728.
14. Sriraman NK, Kellams A (2016) Breastfeeding: What are the barriers? why women struggle to achieve their goals. J Womens Health 25: 714-722.
15. Jones KM, Power ML, Queenan JT, Schulkin J (2015) Racial and ethnic disparities in breastfeeding. Breastfeed Med 10: 186-196.
16. Labbok MH (2013) Breastfeeding: Population-based perspectives. Pediatr Clin North Am 60: 11-30.
17. Holla-Bhar R, Iellamo A, Gupta A, Smith JP, Dadhich JP (2015) Investing in breastfeeding: The world breastfeeding costing initiative. Int Breastfeed J 10: 8.
18. Garner CD, Ratcliff SL, Thornburg LL, Wethington E, Howard CR, et al. (2016) Discontinuity of breastfeeding care: "There's no captain of the ship". Breastfeed Med 11: 32-39.
19. Semenic S, Childerhose JE, Lauziere J, Groleau D (2012) Barriers, facilitators, and recommendations related to implementing the Baby-Friendly Initiative (BFI): An integrative review. J Hum Lact 28: 317-334.
20. Li CM, Li R, Ashley CG, Smiley JM, Cohen JH, et al. (2014) Associations of hospital staff training and policies with early breastfeeding practices. J Hum Lact 30: 88-96.
21. Rosin SI, Grković IZ (2016) Towards integrated care in breastfeeding support: A cross-sectional survey of practitioners' perspectives. Int Breastfeed J 11: 15.
22. Rollins NC, Bhandari N, Hajeebhoy N, Horton S, Lutter CK, et al. (2016) Why invest, and what it will take to improve breastfeeding practices? Lancet 387: 491-504.
23. Dyson L, Renfrew MJ, McFadden A, McCormick F, Herbert G, et al. (2010) Policy and public health recommendations to promote the initiation and duration of breast-feeding in developed country settings. Public Health Nutr 13:137-144.
24. Chantry CJ, Howard CR (2013) Clinical protocols for management of breastfeeding. Pediatr Clin North Am 60: 75-113.
25. World Health Organization (2015) The Baby-friendly Hospital Initiative, Geneva.
26. World Health Organization, UNICEF (1989) Protecting, promoting and supporting breast-feeding: The special role of maternity services.
27. DiGirolamo AM, Grummer-Strawn LM, Fein SB (2008) Effect of maternity-care practices on breastfeeding. Pediatrics 2: S43-S49.
28. Munn AC, Newman SD, Mueller M, Phillips SM, Taylor SN (2016) The impact in the united states of the baby-friendly hospital initiative on early infant health and breastfeeding outcomes. Breastfeed Med 11: 222-230.
29. Declercq E, Labbok MH, Sakala C, O'Hara M (2009) Hospital practices and women's likelihood of fulfilling their intention to exclusively breastfeed. Am J Public Health 99: 929-935.
30. Chung M, Raman G, Trikalinos T, Lau J, Ip S (2008) Interventions in primary care to promote breastfeeding: An evidence review for the US Preventive Services Task Force. Annals of Internal Medicine 149: 565-582.
31. Waddington C, Egger D (2008) Integrated health services-what and why. World Health Organization, Geneva.
32. McDonald KM, Sundaram V, Bravata DM, Lewis R, Lin N, et al. (2007) Care coordination. Agency for Healthcare Research and Quality, Rockville, USA.
33. Barnet CC, Augustyn M, Gross S, Resnik A, Paige D (2012) Long-term breastfeeding support: Failing mothers in need. Matern Child Health J 16: 1926-1932.
34. Gross SM, Resnik AK, Nanda JP, Cross-Barnet C, Augustyn M, et al. (2011) Early postpartum: A critical period in setting the path for breastfeeding success. Breastfeed Med 6: 407-412.
35. Johnson DB, Lamson E, Schwartz R, Goldhammer C, Ellings A (2015) A community health clinic breastfeeding-friendly Pilot: What can we learn about the policy process? J Hum Lact 31: 660-670.
36. Schwartz R, Ellings A, Baisden A, Goldhammer CJ, Lamson E, et al. (2015) Washington 'steps' up: A 10-step quality improvement initiative to optimize breastfeeding support in community health centers. J Hum Lact 31: 651-659.
37. Nickel NC, Taylor EC, Labbok MH, Weiner BJ, Williamson NE (2013) Applying organisation theory to understand barriers and facilitators to the implementation of baby-friendly: A multisite qualitative study. Midwifery 29: 956-964.
38. Atchan M, Davis D, Foureur M (2014) Applying a knowledge translation model to the uptake of the baby friendly health initiative in the Australian health care system. Women Birth 27: 79-85.
39. Tong A, Sainsbury P, Craig J (2007) Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. Int J Qua Health Care 19: 349-357.
40. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O (2004) Diffusion of innovations in service organizations: Systematic review and recommendations. Milbank Q 82: 581-629.

41. Greenhalgh T, Robert G, Bate P, Macfarlane F, Kyriakidou O (2008) Diffusion of innovations in health service organisations: A systematic literature review. John Wiley & Sons, USA.
42. Winter LF, Ustianov J (2016) Lessons learned from hospital leaders who participated in a national effort to improve maternity care practices and breastfeeding. Breastfeed Med 11: 166-172.
43. Grawey AE, Marinelli KA, Holmes AV, Academy of Breastfeeding Medicine (2013) ABM clinical protocol #14: Breastfeeding-friendly physician's office: Optimizing care for infants and children, revised 2013. Breastfeeding Medicine 8: 237-242.
44. Chantry CJ, Eglash A, Labbok M (2015) ABM position on breastfeeding-revised 2015. Breastfeed Med 10: 407-411.
45. Baby-Friendly USA (2012) Baby-friendly hospital initative.
46. Rosen-Carole C, Hartman S (2015) ABM Clinical protocol# 19: Breastfeeding promotion in the prenatal setting, revision 2015. Breastfeed Med 10: 451-457.
47. Meek JY, Hatcher AJ (2017) The breastfeeding-friendly pediatric office practice. Pediatrics 139.
48. Committee on Helath Care for Underserved Women (2013) Breastfeeding in underserved women: Increasing initiation and continuation of breastfeeding. The American College of Obstetricians and Gynocologists.
49. Gartner LM, Morton J, Lawrence RA, Naylor AJ, O'Hare D, et al. (2005) Breastfeeding and the use of human milk. Pediatrics 115: 496-506.
50. Leawood K (2008) Breastfeeding, family physicians supporting (position paper). American Academy of Family Physicians.
51. Drago R, Hayes J, Yi Y (2010) Better health for mothers and children: Breastfeeding accommodations under the Affordable Care Act: Institute for women's policy research Washington.
52. Community clinics and the affordable care act requirements (2011) Breastfeeding support. California WIC Association.
53. Agency for Healthcare Research and Quality (2016) Pediatric quality measures program: Postpartum followup and care coordination.
54. Calnen J (2010) Breastfeeding medicine. Breastfeeding Promotion and the Accountable Care Organization.
55. Helfgott AW (2012) The patient-centered medical home and accountable care organizations: An overview. Curr Opin Obstet Gynecol 24: 458-464.
56. Jewell G, Gera J, DeRosa M (2016) Transforming maternity care: Signature's strong start maternity medical home model [3M]. Obstetrics & Gynecology 127: 106S-107S.
57. Health: Breastfeeding Friendly Washington, USA.
58. Atchan M, Davis D, Foureur M (2013) The impact of the baby friendly health initiative in the Australian health care system: A critical narrative review of the evidence. Breastfeed Rev 21: 15-22.
59. NICHQ (2011) Best Fed Beginnings.