Barriers to Providing Lactation Services and Support to Families in Appalachia: A Mixed-Methods Study With Lactation Professionals and Supporters

Emily R. Seiger, BS, Heather M. Wasser, PhD, MPH, RD, Stephanie A. Hutchinson, MBA, BS, IBCLC, Grace Foster, BSPH, Ruwaydah Sideek, BSPH, and Stephanie L. Martin, PhD, MEd

Objectives. To understand the barriers and facilitators that lactation professionals and supporters (LPSs) in the Appalachian region of the United States experience when providing services and support to families.

Methods. We used a mixed-methods explanatory sequential design with a survey of LPSs in Appalachia (March–July 2019), followed by semistructured interviews with LPSs (January–April 2020). We summarized survey responses descriptively and analyzed interview transcripts thematically.

Results. The survey was completed by 89 LPSs in Appalachia. We conducted semistructured interviews with 20 LPSs. Survey participants most commonly identified challenges with other health care providers, hospital practices, and non–medically indicated supplementation as barriers. Interview participants described challenges with clients' families not supporting breastfeeding, difficulty reaching clients, limited numbers of LPSs, and lack of racial/ethnic diversity among LPSs. LPSs identified the need for training in lactation and substance use, mental health, and birth trauma, and supporting lesbian, gay, bisexual, transgender, queer or questioning, plus (LGBTQ+) families. LPSs described social media and telehealth as both facilitators and barriers. Social support from other LPSs was a facilitator.

Conclusions. LPSs in Appalachia face various challenges. Addressing these challenges has the potential to improve the lactation support and services families in Appalachia receive. (*Am J Public Health*. 2022;112(S8):S797–S806. https://doi.org/10.2105/AJPH.2022.307025)

AJPH Supplement 8, 2022, Vol 112, No. S8

The benefits of breastfeeding are well-documented and extend to the infant, breastfeeding parent, family, and society.[1] As such, breastfeeding is a public health priority in the United States and is included in national health objectives, such as Healthy People 2030, and is emphasized in the latest *Dietary Guidelines for Americans*. Along with the American Academy of Pediatrics, the *Dietary Guidelines for Americans* recommend exclusive breastfeeding for the infant's first 6 months, followed by continued breastfeeding alongside the introduction of complementary foods until 12 months or longer. In the United States, the majority of infants initiate breastfeeding (84.1%), but the prevalence of continued breastfeeding declines precipitously by 6 months (58.3%), with an even lower prevalence of exclusive breastfeeding at 6 months (25.6%).[2]

Breastfeeding support provided by professionals or peer supporters can increase breastfeeding duration and exclusive breastfeeding.[3] Lactation providers and supporters (LPSs) include International Board Certified Lactation Consultants (IBCLCs); other certified lactation providers (e.g., Certified Lactation Counselors, Lactation Specialists, Breastfeeding Counselors); and peer counselors through the Special Supplemental

Nutrition Program for Women, Infants, and Children (WIC) or La Leche League (a breastfeeding training, advocacy, and education nongovernmental organization). Each category of LPS has unique training, areas of expertise, and scopes of practices.[4]

LPSs provide services and support in a variety of settings including home visits, hospitals, private practices, health departments, and nonprofit organizations. LPSs are important health care providers as labor and delivery staff, family physicians, and pediatricians may not be trained or confident to provide clinical or social support for breastfeeding.[5,6] Interventions using LPSs have documented increases in breastfeeding initiation and an improved prevalence of any and exclusive breastfeeding.[4] Despite evidence of the effectiveness of LPSs and their important role in public health efforts to improve breastfeeding in the United States, little is known about the experience of LPSs in providing support and the factors that facilitate or impede their success. Previous studies have described the experiences of IBCLCs in Florida[5]; WIC breastfeeding peer counselors in Alaska[7]; health care professionals, including some IBCLCs, in New York State[6]; and health care professionals who supported lactation during the COVID-19 pandemic,[8] but the experiences of LPSs in the Appalachian region of the United States have not been described in the literature.

The Appalachian region consists of 420 counties spanning 13 states in the eastern United States ranging from New York to Mississippi, including all of West Virginia.[9] The Appalachian region is not a monolith and should not be defined by poverty or ethnicity.[10] While substantial economic progress has been made over the last 5 decades, notable disparities and inequities persist. In a 2017 report of health disparities in Appalachia,[11] the region performed better than the nation overall for 8 of 41 indicators (including the prevalence of HIV and excessive drinking), but poorer for 33 indicators, including a higher prevalence of poverty, mortality from all causes examined (e.g., heart disease, cancer), obesity, physical inactivity, infant mortality, and low birth weight. Several of these disparities (e.g., poverty, secondary education, obesity, and low birth weight) are associated with poorer breastfeeding outcomes,[1] while others (e.g., risk of heart disease or cancer) may be reduced through increases in the prevalence of any and exclusive breastfeeding.[4]

Breastfeeding prevalence in Appalachian counties has historically been lower than in the rest of the United States.[12] County-level data are not currently available. Using data from the 2020 US Breastfeeding Report Card, which reports feeding practices among infants born in 2017, the prevalence of exclusive breastfeeding at 3 months was 38% in states with counties in Appalachia compared with 47% in the United States overall and 21% versus 26% for exclusive breastfeeding at 6 months.[2] The objective of this study was to comprehensively understand the barriers and facilitators that LPSs experience when providing lactation services and support to families in Appalachia.

METHODS

Appalachian Breastfeeding Network (ABN) leadership and academic researchers partnered on the design and implementation of this study. ABN is a nonprofit organization. Its leadership includes a board and state representatives who are LPSs. Their leadership and members are LPSs working in clinical, community, public health, and academic settings with varied lactation and health credentials and experiences. ABN was created to bring multiple professions together for 1 common mission: "to work towards transformation of breastfeeding culture in Appalachia by providing empowerment and education to increase access to care" (https://bit.ly/3BCEHwt). ABN hosts a 24-hour breastfeeding hotline, is creating an education program for hospital staff, runs a social media campaign to empower parents, and hosts an annual conference. With commitments to racial equity and gender inclusivity, ABN provides scholarships for Black aspiring lactation professionals, waives full membership fees for any Black individual, and rebranded its social media campaign to be inclusive of all parents.

Design

We used an explanatory sequential design,[13] first conducting a quantitative cross-sectional survey followed by qualitative semistructured interviews. The survey provided a preliminary understanding of barriers LPSs in Appalachia face and findings informed the development of the semistructured interview guide to further explore topics identified in the survey.

Sample

ABN distributed the survey link via direct e-mail and ABN social media platforms (i.e., Facebook, Instagram, Twitter) to more than 400 ABN members; it received 130 responses. Of these, 13 were incomplete and 28 were from individuals outside of Appalachia, resulting in a final sample of 89 LPSs who were members of ABN and lived or worked in a county in Appalachia.

During the survey, participants were invited to participate in a follow-up, semistructured interview; 43 participants agreed to be contacted. Through frequent debriefings with the data collectors, we determined that after conducting 20 interviews we achieved a variety of perspectives from the study population and topic saturation had been reached. Interview participants received a $15 gift card.

Data Collection

We developed data collection tools based on ABN priorities and previous literature.[5] The survey included 30 multiple-choice, ranking, and open-ended questions about sociodemographic characteristics, paid or volunteer breastfeeding and lactation support experience in Appalachia, barriers LPSs experience when supporting families, and perspectives on ABN initiatives. (The survey is available as a supplement to the online version of this article at https://ajph.org.) The survey was administered between March 10, 2019, and July 17, 2019, using Qualtrics Online Survey Software (version March 2019, Qualtrics, Provo, UT). Informed consent was obtained electronically at the start of the survey. Research assistants with training in qualitative research conducted semistructured phone interviews following an interview guide that was developed by using survey results (available as a supplement to the online version of this article at https://ajph.org). Interviews were conducted between January 2020 and April 2020, lasted between 30 and 75 minutes, and were audio-recorded and transcribed verbatim. Verbal consent was obtained at the start of the interview.

Data Analysis

Using survey data, we calculated descriptive statistics in Stata version 16 (StataCorp LP, College Station, TX) for all sociodemographic characteristics; we cross-tabulated barriers by WIC employment status (any vs none) and lactation certification. We categorized lactation certifications as (1) IBCLCs, who complete extensive coursework, training, and at least 300 clinical practice hours; (2) other lactation certifications including Certified Lactation Counselors, Certified Lactation Specialists, and Certified Breastfeeding Counselors, who complete 40 hours of training; WIC breastfeeding peer counselors and La Leche League Leaders, which requires training and personal breastfeeding experience; and (3) no lactation certification, which includes individuals who provide lactation support through their job or volunteer work but do not have a lactation credential (e.g., doula, home visitor, support group facilitator).

We uploaded interview transcripts to ATLAS.ti version 8 (Scientific Software Development, Berlin, Germany) and conducted thematic analysis. We developed deductive codes based on the interview guide and applied them to the transcripts. After this initial coding pass, the first author listened to the interviews and made memos of emerging themes and her positionality. These themes were discussed by the authors, additional inductive codes were created, and a second coding pass was made. A separate coding report was generated for each of the common barriers identified in the survey and each of the emergent barriers identified in the interviews. Next, the first author created a separate matrix for each barrier in which illustrative quotes were tabulated by certification type and employment in WIC. Study authors separately reviewed the coding reports and matrices and then met as a team to discuss key themes while periodically consulting the president of ABN.

Reflexivity

Most of the academic researchers are outsiders to Appalachia and benefit from systems of oppression and may fail to fully grasp structural and systemic barriers identified by participants. The members of the academic research team are predominately White, similar to the sample, but given that topics of racial/ethnic representation and systemic marginalization were identified, authors sought to situate the findings in context by discussing works by Black and Latinx LPSs and researchers. All academic researchers attended events hosted by Appalachian organizations to improve contextual understanding. One of the academic researchers was an IBCLC and another was a certified lactation counselor, improving the analysis and interpretation of LPS data. The ABN president co-designed the study and was engaged in the analysis and manuscript preparation to avoid misinterpretation or misrepresentation of participants' experiences.

RESULTS

Participant characteristics are presented in Table 1. As part of their lactation work or volunteer activities, 92.1% of survey participants reported providing lactation counseling, support, and education to clients and families; 52.8% implemented breastfeeding programs; 47.2% trained other providers or program staff in lactation; and 4.5% conducted breastfeeding and lactation research.

TABLE 1— Characteristics of Lactation Providers and Supporters According to Participation in the Survey (March–July 2019) and Semistructured Interviews (January–April 2020): Appalachia, United States

	Survey Respondents (n = 89), No. (%) or Mean ±SD	Interview Respondents (n = 20), No. (%)
Age, y[a]		
18–34	36 (40.4)	10 (52.6)
35–54	40 (44.9)	6 (31.6)
≥ 55	13 (14.6)	3 (15.8)
Gender		
Genderfluid/nonbinary	2 (2.2)	1 (5.0)
Women	87 (97.8)	19 (95.0)
Self-Identified race/ethnicity[b]		
Black/African American	1 (1.1)	3 (15.0)
Hispanic/Latina/x	1 (1.1)	0 (0)
More than one race/ethnicity/origin	3 (3.4)	0 (0)
White	84 (94.4)	16 (80.0)
Prefer not to say	0 (0)	1 (5.0)
Years involved in breastfeeding work		
0–5	37 (41.6)	6 (30.0)
6–19	31 (34.8)	9 (45.0)
≥ 20	21 (23.6)	5 (25.0)
Certification[c]		
IBCLC	29 (32.6)	10 (50.0)
Other lactation certification(s)	42 (47.2)	7 (35.0)
Breastfeeding USA Counselor	2 (2.25)	0 (0)
Certified Breastfeeding Counselor	1 (1.1)	0 (0)
Certified Lactation Counselor	29 (32.6)	6 (30.0)
Certified Lactation Specialist	11 (12.4)	1 (5.0)
La Leche League Leader	12 (13.5)	2 (10.0)
WIC peer counselor	16 (18.0)	3 (15.0)
No lactation certification	18 (20.2)	3 (15.0)
State		
Alabama	. . .	1 (5.0)
Georgia	4 (4.5)	1 (5.0)
Kentucky	3 (3.4)	2 (10.0)
Maryland	1 (1.1)	. . .
North Carolina	8 (9.0)	1 (5.0)
Ohio	34 (38.2)	7 (35.0)
Pennsylvania	1 (1.1)	. . .
Tennessee	7 (7.9)	. . .
Virginia	15 (16.9)	4 (20.0)
West Virginia	16 (18.0)	4 (20.0)

Continued

Top Barriers Identified in the Survey

Survey participants selected several barriers that influenced their ability to provide lactation support to families in Appalachia. The top 5 barriers selected were:

1. challenges with other providers (84.3%), which included lack of awareness about services, failing to support breastfeeding, or failing to refer to LPSs;
2. hospital-related challenges (84.3%), which included hospital practices and policies during labor, delivery, and postpartum;
3. non–medically indicated supplementation (77.5%);
4. clients' partners, families, or social networks who were not supportive of breastfeeding (69.7%); and
5. addressing clients' negative views about breastfeeding (61.8%; Figure 1).

Participants selected barriers differently on the basis of lactation certification type and WIC employment status (Table 2). IBCLCs more often reported challenges with reaching clients and time constraints. LPSs with other or no lactation certifications more often reported challenges with clinical aspects of lactation (e.g., preterm infants, clients with obesity, substance use), which IBCLCs are trained to support. Participants who worked at WIC more often reported challenges with clients' partners, families, or social networks not supporting breastfeeding and clients' negative breastfeeding views.

Interview Themes Confirming Survey Results

Interview participants echoed and expounded on several barriers

TABLE 1— Continued

	Survey Respondents (n = 89), No. (%) or Mean ±SD	Interview Respondents (n = 20), No. (%)
County coverage		
Serves more than 1 county	43 (48.3)	. . .
No. of counties served	3.8 ±0.6	. . .

Note. IBCLC = International Board Certified Lactation Consultant. We only included survey data in our analysis from participants who completed all relevant survey questions. It is possible that participants who did not complete all survey questions indicated they were interested in being interviewed and therefore were included in the interview data but not the survey data.

[a]Only 19 interview participants reported their age.

[b]Participants were asked to select from a list during the survey. During interviews, it was an open-ended question. We chose to group interview participants to protect their anonymity when they identified more specifically (e.g., country of origin).

[c]Participants were able to select more than 1 certification.

selected in the survey. Themes from the interviews confirming these barriers are presented in Box 1, and illustrative quotes (Q#) are in Table A (available as a supplement to the online version of this article at https://ajph.org). Differences by certification type and WIC employment status were less prominent in interviews compared with the survey. Across all categories, LPSs reported feeling undervalued by other health care providers who do not refer clients to LPSs (Q1) or who contradict the advice of LPSs. LPSs across certification types and WIC employment status also described challenges reaching clients (Q4–Q8) and referred to Appalachia as a "breastfeeding desert" because of the limited number of LPSs (Q6).

Many LPSs in this study described the challenges of being the sole LPS for multiple counties, which limited their time to adequately counsel every family and contributed to feelings of pressure to meet everyone's needs (Q4). LPSs also reported the challenge of not being compensated for time spent supporting clients outside of working hours (Q8). A lack of support from clients' partners, families, and social networks was particularly salient among WIC-employed LPSs but was also relevant for those not employed by WIC (Q2, Q3). Challenges with cross-cultural communication and language barriers (Q9) was most relevant for LPSs with other lactation certifications and non-WIC LPSs. Counseling clients about issues related to substance use and lactation was most relevant for LPSs with an IBCLC certification and in WIC (Q10).

Emergent Barriers Reported During Interviews

Interview participants noted additional barriers that were not represented in the survey. Emergent themes are presented in Box 1 and illustrative quotes are in Table B (available as a supplement to the online version of this article at https://ajph.org). Systemic lack of racial/ethnic representation among LPSs (Q11) was identified as a barrier, especially by non-WIC LPSs and those with other lactation certifications. LPSs also mentioned the need for contextually relevant counseling materials. LPSs with IBCLCs or other lactation certifications identified challenges supporting clients that experienced previous trauma or health challenges, birth trauma,[14] and mental health challenges (Q12).

LPSs also described their lack of experience and preparation to counsel lesbian, gay, bisexual, transgender, queer or questioning, plus (LGBTQ+) families about chestfeeding, relactation, and induced lactation. LPSs with other lactation certifications noted that breastfeeding classes fail to train or train incorrectly about how to support all families to feed human milk (Q13). LPSs across all certification types and WIC-employment status shared wanting to support LGBTQ+ clients, but not knowing how (Q14).

LPSs with other lactation certifications talked about wanting to pursue the IBCLC certification but described the barriers to obtaining the credential (Q18). IBCLCs discussed how challenges obtaining funding for breastfeeding support in their county make it difficult to provide sustainable care to their clients (Q19).

Facilitators Reported During Interviews

While LPSs were asked about facilitators, the discussion of barriers was more salient. A facilitator that was reported across all LPS categories was relying on the informal social network of LPSs when LPSs encounter challenges or need advice (Q20). Social media, call lines, and telehealth were discussed as potential facilitators in places where care is spread out or difficult to access, acknowledging the benefit of the ABN 24-hour hotline (Q15). However, LPSs also noted limitations when hands-on care is needed (Q16) and social media's potential to spread false information (Q17).

DISCUSSION

This mixed-methods study reveals challenges LPSs experience providing

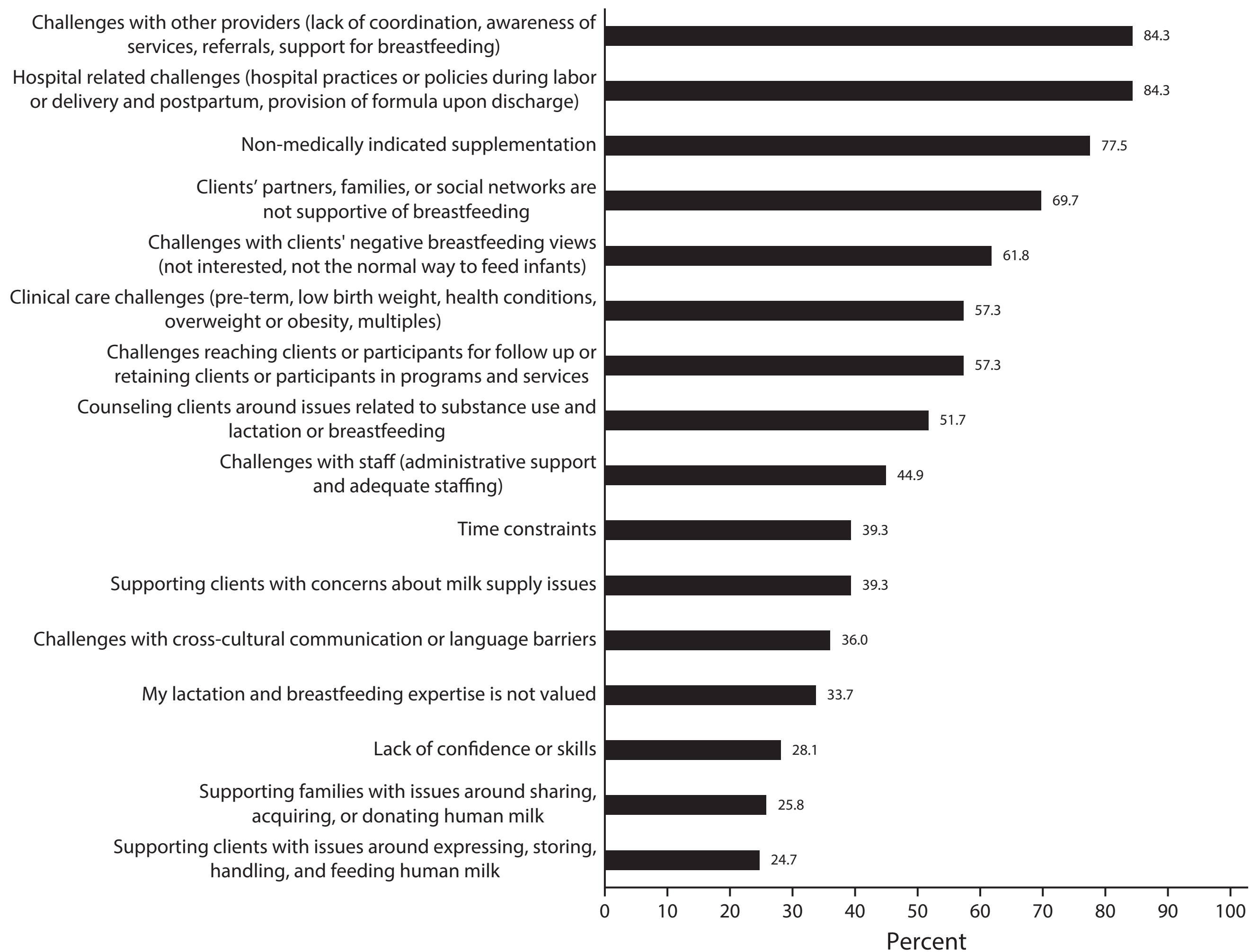

FIGURE 1— Proportion of Survey Respondents Who Reported Personally Experiencing Selected Barriers When Providing Lactation or Breastfeeding Support to Clients: Appalachia, United States, March–July 2019

Note. Survey respondents could select multiple barriers.

breastfeeding and lactation support to families in Appalachia and contributes to the limited literature that has explored the perspectives of LPSs. While our findings reinforce barriers that have been documented among LPSs in other contexts, such as challenges with other health care providers and hospital practices and difficulty reaching clients,[5–7] unique themes related to providing breastfeeding support in Appalachia emerged, which include limited numbers of LPSs in the region, systemic lack of racial/ethnic representation among LPSs, and training needs related to supporting clients who experienced birth trauma or have mental health issues, supporting LGBTQ+ families, and counseling clients about substance use and lactation.

LPSs described challenges with other health care providers who undervalue and undermine their expertise or delay clients' access to skilled lactation support. Failure of other providers to properly refer clients to lactation services has been documented in other studies. Incorporating breastfeeding and lactation content into medical and nursing school curricula may improve feeding recommendations and referrals.[5,6]

Lack of social support from family and community members is a well-documented barrier to breastfeeding.[15,16] LPSs in this study described challenges providing lactation support to clients when partners and family members were not supportive or engaged. There are limited examples from the United States in the peer-reviewed literature of interventions to engage fathers and grandmothers[17–21] to support breastfeeding, and none are in Appalachia. Effective, contextually

TABLE 2— Barriers Experienced by Survey Respondents Providing Lactation and Breastfeeding Support to Clients in Appalachia, United States, by WIC Employment Status and Lactation Certification: March–July 2019

Barrier	Total (n = 89), %	WIC Employment Status, %		Lactation Certification, %		
		WIC (n = 31)	Non-WIC (n = 58)	IBCLC (n = 29)	Other (n = 42)	None (n = 18)
Challenges with other providers (e.g., nurses, pediatricians)	84.3	90.3	81.0	89.7	85.7	72.2
Hospital practices and policies during labor and delivery and postpartum	84.3	87.1	82.8	79.3	83.3	94.4
Non–medically indicated supplementation	77.5	77.4	77.6	72.4	81.0	77.8
Clients' partners, families, or social networks are not supportive of breastfeeding	69.7	83.9	62.1	65.5	78.6	55.6
Clients' negative breastfeeding views (e.g., not interested in breastfeeding, breastfeeding is not normal way to feed infants)	61.8	74.2	55.2	55.2	69.0	55.6
Clinical care challenges (e.g., preterm, low birth weight, clients with obesity, multiples)	57.3	61.3	55.2	37.9	69.0	61.1
Challenges connecting with, reaching, and following up with clients	57.3	61.3	55.2	65.5	54.8	50.0
Lack of training on counseling clients about substance use and lactation	51.7	51.6	51.7	34.5	64.3	50.0
Lack of administrative support and adequate staffing	44.9	45.2	44.8	44.8	47.6	38.9
Time constraints	39.3	41.9	37.9	51.7	35.7	27.8
Difficulty supporting clients with concerns about milk supply	39.3	35.5	41.4	20.7	40.4	44.4
Lack of knowledge, confidence, or skills to support clients effectively	37.1	41.9	34.5	10.3	57.1	33.3
Challenges with cross-cultural communication or language barriers	36.0	38.7	34.5	44.8	38.1	16.7
My lactation and breastfeeding expertise is not valued	33.7	25.8	37.9	41.4	23.8	44.4
Challenges supporting families with sharing, acquiring, or donating human milk	25.8	19.4	29.3	17.2	33.3	22.2
Challenges supporting clients with expressing, storing, handling, and feeding human milk	24.7	19.4	27.6	17.2	38.1	5.6

Note. IBCLC = International Board Certified Lactation Consultant; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children. Survey respondents could select multiple barriers.

appropriate strategies that LPSs can use to engage families to support breastfeeding and lactation are needed.

In the survey, more than half of LPSs selected difficulty reaching clients as a challenge, which was also a prominent theme in the interviews. Appalachia is predominately rural, and clients have reported barriers to accessing breastfeeding care.[22] Other studies have reported that LPSs experience time constraints,[5–7] but serving large geographic, and especially rural, areas likely exacerbates this challenge. LPSs described telehealth and social media as helpful for reaching clients and addressing access challenges, as well as challenging for providing lactation support.

Participants in the current study have similar feelings to WIC breastfeeding peer counselors in Alaska, who described the benefits of texting and online support groups in improving their clients' breastfeeding success but also wanted to have in-person contact with clients.[7] In a meta-analysis of studies examining digital health interventions versus usual care, Web-based technologies significantly improved exclusive breastfeeding initiation and duration, and breastfeeding attitudes and knowledge.[23] Telehealth has the potential to address the distance-to-care barrier faced by many individuals in Appalachia but comes with its own barriers including limited Internet access and availability of services outside of usual business hours.[24] The COVID-19 pandemic necessitated the use of remote lactation support

BOX 1— Themes and Key Findings From Semistructured Interviews With Lactation Professionals and Supporters (LPSs): Appalachia, United States, January–April 2020

Themes	Key Findings From Interviews[a]
Themes that reinforce survey results about barriers	
My lactation expertise is not valued	Other health care providers undervalue LPSs and fail to refer, which leads to confusion for clients or prevents clients from receiving services (Q1)
Clients' partners, families, or social networks do not support breastfeeding	Partners and family members are highly influential, but often do not support breastfeeding (Q2) Difficulty establishing rapport with families, particularly grandmothers, when client is the first in the family to breastfeed (Q3)
Connecting with, reaching, or retaining clients	One LPS often serves multiple counties, which constrains the number of clients they can see and contributes to "breastfeeding deserts"[b] (Q4, Q6) Inconvenient and limited hours for lactation services (e.g., WIC agency hours, timing of support groups) limit ability of LPSs to provide support (Q7) Clients do not always answer phones and numbers change often (Q5) LPSs have to balance tradeoffs between wanting to do more within context of low compensation and other family and life demands (Q8)
Cross-cultural communication and language barriers	Lack of LPSs who speak Spanish, limited availability of translators, and challenges using translators (Q9)
Counseling clients about substance use and lactation	Lack of data, knowledge, resources, and experience counseling clients about substance use and lactation (Q10)
Additional themes that emerged from interviews	
Systemic lack of racial/ethnic representation	Limited numbers of LPSs and other health care providers of color (Q11) Poor outreach to families of color; LPSs do not look like clients (Q11) Support groups perceived as not welcoming to families of color (Q11)
Challenges supporting mental health, abuse, and birth trauma[c]	Lack of training and resources for how to discuss or refer to mental health services (Q12)
Desire to support LGBTQ+ families	Lack of experience (Q14) and training (Q13) counseling LGBTQ+ clients about chestfeeding, relactation, and induced lactation
Social media and telehealth are facilitators and barriers	Social media, call lines, and telehealth facilitate support in places where care is spread out or difficult to access; ABN has a 24-hour hotline (Q15) Telehealth has limitations when "hands on" care is needed (Q16) Social media can be a source of false information (Q17)
Strong peer networks are facilitators	LPSs are able to contact other LPSs in their area or through ABN to troubleshoot challenges they face (Q20)
Limited funding influences support provided	Limited grant funding available for offices where LPSs work (Q19) Among non-IBCLCs, the time and expense of pursuing advanced lactation education and training (i.e., IBCLC certification) is time- and cost-prohibitive (Q18)

Note. ABN = Appalachian Breastfeeding Network; IBCLC = International Board Certified Lactation Consultant; LGBTQ+ = lesbian, gay, bisexual, transgender, queer or questioning, plus; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.
[a]Illustrative quotes are represented as "(Q#)" and presented in Tables A and B (available as supplements to the online version of this article at https://ajph.org).
[b]Participants used the term "breastfeeding deserts" to refer to the lack of LPSs and lactation services in their area.
[c]Leinweber et al. (2020) define birth trauma as an "experience of interactions and/or events directly related to childbirth that caused overwhelming distressing emotions and reactions; leading to short and/or long term negative impacts on a woman's health and wellbeing."[14(p5)]

services and identified promising strategies, but concerns about the need for in-person support continued.[8]

Participants described the lack of racial/ethnic diversity and representation among LPSs as barriers to providing lactation support to families of color in Appalachia. Racism, discrimination, and bias have a negative impact on the provision of and access to lactation support throughout the United States.[25,26] All categories of interview participants discussed the need for LPSs who reflect the clients they are serving. This need was especially prominent among non-WIC interview participants, which may be because WIC breastfeeding peer counselors are meant to reflect the communities they serve.[7] Increasing the number of LPSs of color, and specifically IBCLCs of color, is a priority,[16,27,28] and barriers to IBCLC certification rooted in systemic racism must be eliminated.[28] Black-led community-based organizations have made immense contributions to narrowing breastfeeding disparities,[26] and efforts are underway to increase the number of Black IBCLCs.[27] The number of Black and Latinx residents of Appalachia is increasing, fueling much of the population growth in the region.[29] Continued and expanded efforts to address

inequities faced by Black, Latinx, and other systemically excluded families in Appalachia are essential.

LPSs identified 3 areas in which they need further training, resources, and support: counseling about substance use and lactation (particularly among IBCLCs working in WIC), supporting clients with mental health challenges and birth trauma, and counseling LGBTQ+ families about chestfeeding, induced lactation, and relactation. While LPSs were compassionate and wanted to help address these challenges, an important piece to appropriate care,[30] they did not have the expertise or knowledge of where to seek information. There is a lack of research to inform evidence-based guidelines for providing care around substance use and lactation, and more research that focuses on counseling is needed.[31] Trauma-informed approaches to lactation care are needed,[32] but not widely used. Appropriate training and resources are also needed to ensure the care and advice provided to LGBTQ+ clients who want to chestfeed or breastfeed is accurate and caring.[33,34] The current guidelines provided by the Academy of Breastfeeding Medicine[35] provide an important starting point for LPSs to educate themselves and be reminded of the importance of affirming counseling, but the majority of resources for lactation are hetero- and cisnormative.[35] LPSs need training on each of these topics that reflect their role and scope of practice.

Limitations

Study limitations include the use of a convenience sample of ABN members, which may not reflect the experiences of LPSs in Appalachia who are not affiliated with ABN or did not participate in our survey. This study lacked diversity in participants as the majority of LPSs in our study were White. Our findings are missing important details about the experiences and needs of LPSs from systemically excluded groups. Future research in Appalachia should prioritize the experiences of LPSs of color.

The study's strengths include that it was conducted in partnership with and according to the goals of the ABN and included perspectives from a variety of LPSs from different states. The use of mixed methods allowed for a more holistic understanding of the barriers faced by LPSs in Appalachia. The quantitative data highlight potential priority concerns, and the qualitative data provide critical first-hand experience and a more in-depth understanding of the barriers LPSs experience. Finally, this study focused on the experiences of LPSs, which are often left out of breastfeeding research despite playing an integral role.[5,7]

In this study, LPSs identified several barriers to providing lactation and breastfeeding services and support to families in Appalachia that must be addressed. This includes increasing the number of LPSs in rural areas and LPSs of color, as well as addressing barriers to IBCLC certification. The experiences of LPSs with telehealth suggest the need to test the effectiveness of digital health interventions, developed in partnership with communities, to increase access to and use of lactation support in "breastfeeding deserts." LPSs also need continuing education to support families dealing with substance use and mental health issues and provide appropriate counseling to LGBTQ+ families. Some LPSs benefited from informal support from other LPSs; formalizing networks of support within states and regions could extend this support to other LPSs. Addressing the barriers that LPSs identified has the potential to improve the lactation support and services that families in Appalachia receive.

Public Health Implications

Despite myriad benefits of breastfeeding, families face multilevel barriers to meeting their infant feeding goals, particularly in Appalachia. Services and support from LPSs can improve breastfeeding practices, but this research documents critical barriers LPSs face in providing such care in Appalachia. These barriers limit efforts to improve infant feeding practices. There is a need to increase the number of LPSs in Appalachia, increase the number of Black and Latinx LPSs, and provide training in mental health, counseling LGBTQ+ families, and substance use disorders for LPSs at every level. AJPH

ABOUT THE AUTHORS

Emily R. Seiger, Stephanie L. Martin, Heather M. Wasser, Grace Foster, and Ruwaydah Sideek are with the Department of Nutrition, Gillings School of Global Public Health, University of North Carolina at Chapel Hill. Stephanie A. Hutchinson is with the Appalachian Breastfeeding Network, Gallipolis, Ohio.

CORRESPONDENCE

Correspondence should be sent to Stephanie L. Martin, PhD, MEd, Department of Nutrition, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, 2003 Michael Hooker Research Center, CB #7461, Chapel Hill, NC 27599-7461 (e-mail: slmartin@unc.edu). Reprints can be ordered at https://ajph.org by clicking the "Reprints" link.

PUBLICATION INFORMATION

Full Citation: Seiger ER, Wasser HM, Hutchinson SA, Foster G, Sideek R, Martin SL. Barriers to providing lactation services and support to families in Appalachia: a mixed-methods study with lactation professionals and supporters. *Am J Public Health*. 2022;112(S8):S797–S806.

Acceptance Date: July 1, 2022.

DOI: https://doi.org/10.2105/AJPH.2022.307025

CONTRIBUTORS

S. L. Martin and S. A. Hutchinson designed this research. G. Foster and R. Sideek collected the data. E. R. Seiger, S. L. Martin, H. M. Wasser, G. Foster, and

R. Sideek analyzed the data. S. A. Hutchinson contributed to data interpretation. E. R. Seiger, S. L. Martin, H. M. Wasser drafted the article. All authors reviewed, revised, and approve of the article.

ACKNOWLEDGMENTS

Funding for data collection was supported by the Tom and Elizabeth Long Excellence Fund for Honors and the Rodney F. Hood Undergraduate Research Fund, both administered by Honors Carolina at the University of North Carolina at Chapel Hill. S. L. Martin was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development of the National Institutes of Health under award P2C HD050924.

We are grateful to the study participants for sharing their experiences with us.

CONFLICTS OF INTEREST

S. A. Hutchinson is the administrator of Appalachian Breastfeeding Network's 24-hour breastfeeding hotline and receives a salary via grant funding from the Ohio Department of Health. All other authors report no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

This study was reviewed by the University of North Carolina at Chapel Hill institutional review board and determined to be exempt from further review. All human participants provided informed consent.

REFERENCES

1. Victora CG, Bahl R, Barros AJD, et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. *Lancet.* 2016;387(10017):475–490. https://doi.org/10.1016/S0140-6736(15)01024-7
2. Centers for Disease Control and Prevention, Division of Nutrition, Physical Activity, and Obesity. Breastfeeding Report Card United States, 2020. November 24, 2021. Available at: https://www.cdc.gov/breastfeeding/data/reportcard.htm. Accessed February 28, 2022.
3. McFadden A, Gavine A, Renfrew MJ, et al. Support for healthy breastfeeding mothers with healthy term babies. *Cochrane Database Syst Rev.* 2017;2(2):CD001141. https://doi.org/10.1002/14651858.CD001141.pub5
4. Chetwynd EM, Wasser HM, Poole C. Breastfeeding support interventions by International Board Certified Lactation Consultants: a systemic review and meta-analysis. *J Hum Lact.* 2019;35(3):424–440. https://doi.org/10.1177/0890334419851482
5. Anstey EH, Coulter M, Jevitt CM, et al. Lactation consultants' perceived barriers to providing professional breastfeeding support. *J Hum Lact.* 2018; 34(1):51–67. https://doi.org/10.1177/0890334417726305
6. Garner CD, Ratcliff SL, Thornburg LL, Wethington E, Howard CR, Rasmussen KM. Discontinuity of breastfeeding care: "There's no captain of the ship." *Breastfeed Med.* 2016;11(1):32–39. https://doi.org/10.1089/bfm.2015.0142
7. Cueva K, Shimer S, Kent D, Geller AC, Viswanath K, Fung TT. Strengths and challenges of the Alaska WIC breastfeeding peer counselor program: a qualitative study of program implementation. *J Nutr Educ Behav.* 2017;49(10):858–866.e1. https://doi.org/10.1016/j.jneb.2017.07.007
8. Schindler-Ruwisch J, Phillips KE. Breastfeeding during a pandemic: the influence of COVID-19 on lactation services in the northeastern United States. *J Hum Lact.* 2021;37(2):260–268. https://doi.org/10.1177/08903344211003898
9. Appalachian Regional Commission. About the Appalachian Region. Available at: https://www.arc.gov/about-the-appalachian-region. Accessed December 18, 2021.
10. Catte E. *What You're Getting Wrong About Appalachia.* 1st ed. Cleveland, OH: Belt Publishing; 2018.
11. Marshall JL, Thomas L, Lane NM, et al. Health disparities in Appalachia. August 23, 2017. Available at: https://www.arc.gov/report/health-disparities-in-appalachia. Accessed February 28, 2022.
12. Wiener RC, Wiener MA. Breastfeeding prevalence and distribution in the USA and Appalachia by rural and urban setting. *Rural Remote Health.* 2011;11(2): 1713. https://doi.org/10.22605/RRH1713
13. Creswell JW, Plano-Clark VL. Core mixed methods designs. In: *Designing and Conducting Mixed Methods Research*. 3rd ed. Los Angeles, CA: SAGE; 2018:51–99.
14. Leinweber J, Fontein-Kuipers Y, Thomson G, et al. Developing a woman-centered, inclusive definition of traumatic childbirth experiences: a discussion paper. *Birth.* 2022; epub ahead of print April 11, 2022. https://doi.org/10.1111/birt.12634
15. Woods Barr A, Miller E, Smith J, Cummings S, Schafer E. #EveryGenerationMatters: intergenerational perceptions of infant feeding information and communication among African American Women. *Breastfeed Med.* 2021;16(2):131–139. https://doi.org/10.1089/bfm.2020.0308
16. Johnson A, Kirk R, Rosenblum KL, Muzik M. Enhancing breastfeeding rates among African American Women: a systematic review of current psychosocial interventions. *Breastfeed Med.* 2015;10(1):45–62. https://doi.org/10.1089/bfm.2014.0023
17. Stremler J, Lovera D. Insight from a breastfeeding peer support pilot program for husbands and fathers of Texas WIC participants. *J Hum Lact.* 2004;20(4):417–422. https://doi.org/10.1177/0890334404267182
18. Sciacca JP, Phipps BL, Dube DA, Ratliff MI. Influences on breast-feeding by lower-income women: an incentive-based, partner-supported educational program. *J Am Diet Assoc.* 1995; 95(3):323–328. https://doi.org/10.1016/S0002-8223(95)00083-6
19. Furman L, Killpack S, Matthews L, Davis V, O'Riordan MA. Engaging inner-city fathers in breastfeeding support. *Breastfeed Med.* 2016;11(1):15–20. https://doi.org/10.1089/bfm.2015.0092
20. Wasser HM, Thompson AL, Suchindran CM, et al. Family-based obesity prevention for infants: design of the "Mothers & Others" randomized trial. *Contemp Clin Trials.* 2017;60:24–33. https://doi.org/10.1016/j.cct.2017.06.002
21. Grassley JS, Spencer BS, Law B. A grandmothers' tea: evaluation of a breastfeeding support intervention. *J Perinat Educ.* 2012;21(2):80–89. https://doi.org/10.1891/1058-1243.21.2.80
22. Grubesic TH, Durbin KM. Breastfeeding support: a geographic perspective on access and equity. *J Hum Lact.* 2017;33(4):770–780. https://doi.org/10.1177/0890334417706361
23. Lau Y, Htun TP, Tam WSW, Klainin-Yobas P. Efficacy of e-technologies in improving breastfeeding outcomes among perinatal women: a meta-analysis. *Matern Child Nutr.* 2016;12(3):381–401. https://doi.org/10.1111/mcn.12202
24. Demirci J, Kotzias V, Bogen DL, Ray KN, Uscher-Pines L. Telelactation via mobile app: perspectives of rural mothers, their care providers, and lactation consultants. *Telemed J E Health.* 2019;25(9):853–858. https://doi.org/10.1089/tmj.2018.0113
25. Robinson K, Fial A, Hanson L. Racism, bias, and discrimination as modifiable barriers to breastfeeding for African American Women: a scoping review of the literature. *J Midwifery Womens Health.* 2019;64(6):734–742. https://doi.org/10.1111/jmwh.13058
26. Asiodu IV, Bugg K, Palmquist AEL. Achieving breastfeeding equity and justice in Black communities: past, present, and future. *Breastfeed Med.* 2021;16(6):447–451. https://doi.org/10.1089/bfm.2020.0314
27. Davis R, Williams J, Chetwynd E. Increasing diversity in the field of lactation: an interview with the directors of Pathway 2 IBCLC programs at historically Black colleges and universities. *J Hum Lact.* 2021;37(2):230–235. https://doi.org/10.1177/0890334421995108
28. Thomas EV. "You know if you quit, that's failure, right?": barriers to professional lactation certification. *J Hum Lact.* 2018;34(3):454–466. https://doi.org/10.1177/0890334418775062
29. Pollard K, Jacobsen LA. The Appalachian Region: a data overview from the 2015–2019 American Community Survey – Chartbook. Washington, DC: Population Reference Bureau and Appalachian Regional Commission; 2021. Available at: https://www.arc.gov/wp-content/uploads/2021/06/PRB_ARC_Chartbook_ACS_2015-2019_FINAL_2021-06_R1.pdf
30. Rosen-Carole C, Greenberg KB. Chestfeeding and lactation care for LGBTQ+ families (lesbian, gay, bisexual, transgender, queer, plus). In: Lawrence RA, Lawrence RM, eds. *Breastfeeding.* 9th ed. Philadelphia, PA: Elsevier; 2022:646–650. https://doi.org/10.1016/B978-0-323-68013-4.00020-1
31. Reece-Stremtan S, Marinelli KA. ABM Clinical Protocol #21: Guidelines for breastfeeding and substance use or substance use disorder, revised 2015. *Breastfeed Med.* 2015;10(3):135–141. https://doi.org/10.1089/bfm.2015.9992
32. Channell Doig A, Jasczynski M, Fleishman JL, Aparicio EM. Breastfeeding among mothers who have experienced childhood maltreatment: a review. *J Hum Lact.* 2020;36(4):710–722. https://doi.org/10.1177/0890334420950257
33. García-Acosta JM, San Juan-Valdivia RM, Fernández-Martínez AD, Lorenzo-Rocha ND, Castro-Peraza ME. Trans* pregnancy and lactation: a literature review from a nursing perspective. *Int J Environ Res Public Health.* 2019;17(1):44. https://doi.org/10.3390/ijerph17010044
34. MacDonald T, Noel-Weiss J, West D, et al. Transmasculine individuals' experiences with lactation, chestfeeding, and gender identity: a qualitative study. *BMC Pregnancy Childbirth.* 2016;16(1):106. https://doi.org/10.1186/s12884-016-0907-y
35. Ferri RL, Rosen-Carole CB, Jackson J, Carreno-Rijo E, Greenberg KB, The Academy of Breastfeeding Medicine. ABM Clinical Protocol #33: Lactation care for lesbian, gay, bisexual, transgender, queer, questioning, plus patients. *Breastfeed Med.* 2020;15(5):284–293. https://doi.org/10.1089/bfm.2020.29152.rlf