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INCREASING BREASTFEEDING RATES IN RURAL AREAS OF THE UNITED STATES: WHAT DO WE KNOW AND WHAT CAN WE DO?

by

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Bachelor of Science in Nursing, University of North Dakota, 2007

An Independent Study

Submitted to the Graduate Faculty

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in partial fulfillment of the requirements

for the degree of

Master of Science

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PERMISSION

Title	Increasing Breastfeeding Rates in Rural Areas of the United States: What Do We Know and What Can We Do?
Department	Nursing
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INCREASING BREASTFEEDING RATES IN RURAL AREAS OF THE UNITED STATES: WHAT DO WE KNOW AND WHAT CAN WE DO?

by

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Abstract

Background: Breastfeeding is the recommended form of infant nutrition. However, breastfeeding rates in the United States (US) are below recommended goals. Rates in rural areas are even lower than in urban areas.

Purpose: The purpose of this manuscript was: 1) to identify potential barriers to breastfeeding in rural areas, 2) to review what is currently known about breastfeeding interventions that promote successful breastfeeding in rural areas, and 3) to identify interventions that have the potential to increase breastfeeding initiation and duration in rural areas of the US.

Conclusion: Numerous interventions to promote and support breastfeeding have been shown to be effective in urban areas. Rural adaptations of such interventions may be unique. Very little research has been conducted on interventions to increase breastfeeding initiation and duration rates specifically in rural areas of the United States. A call for more research on interventions to increase breastfeeding rates among rural women in the US is necessary.

Key words: breastfeeding rates, breastfeeding barriers, breastfeeding interventions, rural

Breast milk has been proven to have numerous benefits, both for mothers and also for infants.[1] It is the recommended form of nutrition for most infants. Several prominent medical organizations, including the American Academy of Family Physicians (AAFP)[2] and the American Academy of Pediatrics (AAP),[3] recommend that infants be exclusively breastfed for the first 6 months with breastfeeding continuing with complementary foods for at least 12 months, and then continue for as long as mutually desired.

Despite the known benefits and strong recommendations, rates for breastfeeding in the United States currently fall below national standards. The Healthy People 2020 national goals for breastfeeding are 81.9% for ever breastfeeding, 60.6% for continued breastfeeding at 6 months, and 34.1% for breastfeeding at 1 year.[4] Nationally in 2009, 76.9% of infants were ever breastfed, 47.2% were breastfed at 6 months, and 25.5% were breastfed at 12 months.[5]

Breastfeeding rates are even lower in rural areas of the US. Sparks[6] found that only 56.6% of rural mothers initiated breastfeeding. Flower et al[7] found similar results in that only 55% of rural women initiated any breastfeeding, and significantly fewer (18%) breastfed for 6 months. Considering the well-known benefits of breastfeeding, efforts need to be made to investigate reasons for these low rates and to find interventions that can increase rates. Particular attention needs to be paid to the rural population to help overcome the disparities.

In response to the subpar breastfeeding rates in our country, the U. S. Surgeon General has issued a Call to Action to support breastfeeding.[1] In addition, the U. S. Preventive Services Task Force[8] has issued a grade B recommendation that interventions should be used during pregnancy and after birth to promote and support breastfeeding.

Higher breastfeeding rates signify that more children are actually being breastfed and reaping the numerous benefits. The first hurdle to overcome is actually getting new mothers to

initiate breastfeeding. However, efforts cannot stop there. Breastfeeding support is necessary to help these women to breastfeed for longer durations. Doing so could lead to many more satisfying breastfeeding relationships. Furthermore, increasing breastfeeding rates has the potential to improve the lives of countless mothers and their children. Looking at infant mortality alone, over 900 infant deaths could be prevented each year in the United States by improving breastfeeding rates to the recommended standards.[9] As more women breastfeed (and do so for longer durations) the health of the nation could actually improve overall.

Women in rural areas have significantly lower breastfeeding rates when compared to women in urban areas. Interventions uniquely designed to promote and support breastfeeding in rural areas are critical in improving breastfeeding rates that meet national goals. Therefore, the purpose of this manuscript was: 1) to identify potential barriers to breastfeeding in rural areas, 2) to review what is currently known about breastfeeding interventions that promote successful breastfeeding in rural areas, and 3) to identify interventions that have the potential to increase breastfeeding initiation and duration in rural areas of the US.

What is Rural?

Finding a Definition

It is difficult to provide a universal definition of "rural" as there are many varying definitions. Many organizations differ in their definitions as to what is considered "rural", often with confusing definitions. According to the US Census Bureau, an area is considered "rural" if it is not classified as urban.[10] They further define "urban" as falling into two categories: urbanized areas (50,000 or more people) and urban clusters (between 2500 and 50,000 people).[10] Their "rural" definition includes the people and the land in areas not considered "urban", or

having less than 2500 people in a given area, which is further defined by census blocks and tracts.[10]

The Office of Management and Budget (OMB) is another government office that offers a definition of "rural". The OMB defines areas as metropolitan or nonmetropolitan at the county level.[11] According to the OMB, metropolitan areas are comprised of at least one urbanized area of 50,000 or more plus any surrounding areas that have a significant portion of people commuting into urban areas.[12]

Another important aspect to consider is that not all rural areas are uniform. Much diversity can exist within rural populations. Hart, Larson, & Lishner[13] suggest that there are varying degrees of rurality and that it can be thought of on an urban-rural continuum. While many definitions of "rural" exist, there is no perfect definition of the concept.

Potential Breastfeeding Barriers

The reason that breastfeeding rates are lower in rural areas is likely multifaceted. Rural women often face multiple disparities. There is a lack of current research on breastfeeding among women in rural areas, so it is unknown how different factors specifically affect breastfeeding in rural areas compared to urban areas.[7] However, some commonalities seem to emerge in the evidence that is available. It has been suggested that lower socioeconomic status, social isolation, maternal work status, cultural norms and possibly lack of support, and lack of access to healthcare may be implicated in the lower rural breastfeeding rates.[6, 14] Similarly, Flower et al[7] suggested that a lack of access to breastfeeding assistance and potential social isolation might be factors associated with decreased breastfeeding rates in rural areas. Table 1 summarizes potential breastfeeding barriers.

Socioeconomic Status

Socioeconomic status is a predictive factor of breastfeeding. A higher socioeconomic status is associated with higher breastfeeding rates.[14] However, rural families are more likely to be poor and lack health insurance than their urban counterparts.[15-16] Therefore, it might be assumed that the low socioeconomic status of many rural women could negatively affect breastfeeding outcomes.

Social Isolation

Unlike in densely populated urban regions, rural families can be physically isolated from many other people. Not having regular interactions with other people can lead to social isolation. While it has been mentioned as a potential barrier,[7] no known studies have evaluated the effect of social isolation on breastfeeding among rural women.

Maternal Work Status

Returning to work has often been cited as a reason many mothers face breastfeeding difficulties or stop breastfeeding altogether.[1] Knowing that they have to return to work or having to take a short maternity leave may lead women to chose not to breastfeed. Rural women who are employed are less likely to initiate breastfeeding, which is similar to what has been found of the general population and of urban women.[6-7]

Lack of Support & Cultural Norms

Poor family and social support can present a barrier for women wanting to breastfeed.[1] A lack of social support has been shown to negatively impact breastfeeding rates among low-income women.[17] Family and friends can have either a positive or negative influence on a woman's decision to initiate breastfeeding and during lactation.

Cultural norms also have a significant impact on breastfeeding. Unfortunately in the US, there can be a negative connotation associated with breastfeeding. It may not be viewed as the

social norm or cultural norm. Ahluwalia, D'Angelo, Morrow, & McDonald[18] found that as Hispanic women became acculturated to the American culture, they were less likely to initiate or continue breastfeeding.

As fewer people support breastfeeding, it can deter women from breastfeeding. If only roughly half of rural mothers even initiate breastfeeding and significantly fewer continue it, it certainly could lead to a rural culture where breastfeeding is not considered the norm. An unsupportive, minimally-breastfeeding culture could further perpetuate low breastfeeding rates. However, research about social support and culture in rural areas is lacking.

Access to Healthcare

Rural women and families face unique obstacles in accessing healthcare. In addition to having lower incomes or living in poverty, rural families tend to lack health insurance.[15] Even if they can afford health insurance, rural families often do not have readily available healthcare resources in their area. Provider shortages are further compounding the limited healthcare access in rural areas.[15]

Transportation alone can be a barrier to accessing care in rural areas. Often rural women have to travel long distances to receive healthcare. Combining geographical isolation, lack of public transportation, and the cost of transportation can make it difficult for rural women to access healthcare.[15-16]

Recently, there has been a unique and growing barrier to breastfeeding promotion and support in rural areas. The number of rural hospitals that offer obstetric services has declined by more than 50 percent from the mid-1980s to the 2000s.[19] As a result, many pregnant women are forced to travel long distances to a healthcare facility that offers obstetric services. A lack of local services has led to an even bigger gap for rural women in terms of access to care. By

giving up full obstetric services, rural facilities may no longer be providing the prenatal and postpartum breastfeeding support as they were once able.[19] Women may not able to attend local prenatal or breastfeeding classes. Many breastfeeding support organizations, such as the La Leche League, only meet in large cities. It may be much more difficult for rural women to find necessary support and resources that could make breastfeeding more desirable and easier to continue.

Rural Adaptations of Suggested Breastfeeding Interventions

Most research done on breastfeeding promotion has focused on urban populations. While the effectiveness of such interventions in urban areas is supported, application in the rural setting may require different approaches to overcome the unique rural barriers. Evaluating urban applications may be a good starting point to generate possible solutions for the rural setting, keeping in mind the unique rural challenges. Table 2 outlines potential rural practitioner breastfeeding support options.

In a systematic review done for the Agency of Healthcare Research and Quality, Chung et al[20] identified several interventions to be effective in increasing breastfeeding initiation and continuation in mostly urban areas. Some interventions include prenatal breastfeeding education, professional support, and lay support, such as peer counseling.[20] Some approaches incorporate a combination of the interventions. Interventions should be aimed not only at breastfeeding initiation, but also support for breastfeeding continuation.

Formal Breastfeeding Education

Perhaps the most common form of breastfeeding intervention is a formal breastfeeding education component. Most often, this is in the form of a single or series of prenatal breastfeeding education classes. These can occur in a one-on-one setting, but are more common

as part of a group education class. Breastfeeding education is usually included in these classes, although it might be just briefly discussed. More thorough breastfeeding education might be offered as a breastfeeding class on its own. Many urban obstetric-serving facilities offer these classes to soon-to-be mothers, fathers, or other support persons. However, rural areas are disadvantaged as there are fewer rural facilities offering obstetric services.[19]

Effectiveness of educational interventions (ie prenatal counseling) on breastfeeding initiation and duration has been documented. One systematic review found that breastfeeding education had a significant effect on increasing breastfeeding initiation rates.[14] However, evidence is lacking about such interventions in rural populations.

A study examining educational interventions during prenatal visits among low-income women found that such interventions increased breastfeeding initiation.[21] Another study found that prenatal breastfeeding education significantly increased breastfeeding at 6 months and that there were no differences in outcomes between the types of prenatal education offered.[22] These studies are promising for rural populations in that they evaluated disadvantaged groups and found that any type of education offered has the potential to impact breastfeeding.

Rural adaptations of formal breastfeeding education could include single organized group classes, a series of classes, or providing education at all prenatal visits. Rural healthcare providers may need to be innovative with how these methods are delivered. Since there may not be obstetric facilities in rural areas, alternative meeting facilities would likely be necessary. Group classes may need to be held in churches, schools, or even in homes. Technology may be utilized to provide supplemental educational material, such as with DVDs, online material, or video conferencing.

Professional Support

Professional support can prolong exclusive breastfeeding.[23-24] It is defined as counseling or behavioral interventions provided by health professionals to improve breastfeeding outcomes.[25] Professional breastfeeding support can be provided by physicians, nurse practitioners, nurses, lactation consultants, and other allied health professionals during pregnancy and during the postpartum period. Health professionals can provide evidence-based advice and support breastfeeding mothers to help them strengthen their breastfeeding experience and prolong breastfeeding.[25]

Breastfeeding mothers have cited numerous reasons why they stop breastfeeding. Concerns of inadequate milk supply, issues with latch, feeling tied down, frustrations with pumping, and returning to work are all reasons that have been mentioned.[26] Knowing the reasons mothers quit breastfeeding is important so healthcare providers can anticipate any problems and intervene appropriately. Supporting breastfeeding mothers through difficulties is essential to preserve a healthy breastfeeding relationship.

Rural practitioners are often in a unique position to provide breastfeeding support in that they are the primary healthcare provider for the entire family. Being in this position can be advantageous for breastfeeding support in that the practitioners have the chance of evaluating the breastfeeding relationship and potentially intervening at many different patient care opportunities to provide a continuum of care.[24] Supporting, evaluating, and solving breastfeeding issues can be done at prenatal visits, postpartum visits, well-baby visits, and even seemingly unrelated acute visits. For instance, a mother bringing her toddler in for an ear infection might ask questions about breastfeeding her two-week-old. These opportunities to provide support are just as important as if the mother had made an appointment specifically for her breastfeeding concerns.

It is recommended that all practitioners, including rural practitioners, be supportive of and serve as advocates for breastfeeding.[24] A professional atmosphere that promotes and supports breastfeeding would be ideal. Providers need to provide consistent, evidence-based advice and help mothers connect with breastfeeding resources.[25]

Rural clinic, hospital, and public health nurses are also important resources for professional support of breastfeeding. Home-based visits or one-on-one visits with a breastfeeding professional, such as a lactation consultant, may also provide the support needed for continued breastfeeding.[25] Telephone visits are also another option, instead of in-person visits. These options might be very appropriate and convenient for rural mothers.

In many urban areas, lactation support visits occur in person. Rural women may not have access to such services. However, as technology advances, providers may have more innovative options to provide rural women with some form of professional assistance. Two recent pilot studies are the first of their kind examining the use of telehealth and videoconferencing to provide professional lactation assistance and support to breastfeeding mothers.[27-28] It should be noted that these pilot studies had several limitations, including very small samples. Remote lactation consultation is a very new realm. Much more research needs to be conducted to determine the efficacy of telehealth to support rural breastfeeding mothers.

Lay Support

Lay support is delivered in a variety of forms. It is very important that a breastfeeding mother have support from those family and friends around her.[1] This informal support can make a huge impact on the breastfeeding relationship between the mother and child. Additionally, community acceptance and support can be instrumental in forging a social environment conducive to breastfeeding.[6]

Peer counseling is an example of lay support that appears to be gaining acceptance as an effective intervention. It is a type of support that comes from people other than a woman's friends or family. Peer counselors are typically women with previous personal breastfeeding experience. Peer counselors offer current breastfeeding mothers emotional support, answer questions, give positive feedback, provide accurate information, make appropriate referrals, and can share personal experiences or tips.[29-30] Peer counseling can be delivered in a number of ways. Some programs utilize paid counselors, with previous breastfeeding experience, to interact with nursing mothers on a regular basis. Interactions can occur over the phone, the Internet, or in person. Other programs rely on volunteer counselors. They link women with previous breastfeeding experience with women who are currently breastfeeding, or who are planning to do so.

Peer counseling interventions have been shown to significantly improve breastfeeding rates in numerous studies evaluating some component of peer counseling.[14,20,23,29-31] Additionally, a combination of pre- and postnatal interventions that include peer counseling might be more effective than either pre- or postnatal interventions alone.[14,20,23] However, most of these interventions have been studied in urban settings. It seems likely that peer counseling could be effective in the rural setting, but research is lacking in this area.

Rural adaptations of peer support and peer counseling may be implemented as easily as urban methods. The use of technology holds much promise in connecting rural women to other breastfeeding women across all areas. Breastfeeding women in the rural Midwest have the potential to get in touch with peer counselors in other states or even countries. The use of landline and mobile telephones, telehealth, the Internet, and smartphones linked to the Internet can help rural women overcome some of the aspects of social isolation. This nearly instant

access to effective resources may prove to be a significant advancement for rural breastfeeding women.

According to D'Auria,[32] there are several promising mobile applications that have already been developed to provide breastfeeding mothers with information and offer support. Quality data is lacking about the effectiveness of such applications and accuracy of information provided. Research needs to be conducted to evaluate the feasibility of mobile applications to improve breastfeeding rates, particularly among rural women. Efforts need to be made to evaluate all possible modalities that could improve breastfeeding rates and the advancements in technology offer much promise.

Conclusion

Breastfeeding rates in rural areas are much lower than recommended national goals. Many rural infants and even mothers are missing out on the countless benefits that come with breastfeeding. Current research about breastfeeding barriers and effective interventions to promote breastfeeding almost exclusively focus on urban populations. There is negligible research about rural breastfeeding barriers and effective breastfeeding interventions in rural areas.

While the current evidence shows overall support for and effectiveness of interventions in urban areas to increase breastfeeding rates for women, very little research has been done to determine their effectiveness specifically in rural populations. Existing research and best practice guidelines are lacking in terms of breastfeeding promotion in rural populations in the US. Some studies have evaluated breastfeeding among disadvantaged groups, such as low-income women,[30-31] but very little research has focused specifically on rural women.

A call for more research on interventions to increase breastfeeding rates among rural women in the US is necessary. There is a clear need to have more research evaluating the effect of breastfeeding interventions in rural settings. Further research and implementation of recommendations may lead to increased breastfeeding rates in the future, which have the potential to improve the health of numerous infants and mothers.

Future Direction

Investigation into unique rural breastfeeding barriers and unique interventions to overcome them is necessary. Research could begin with evaluating if known general breastfeeding barriers apply to rural women, but researchers should also look at distinctive rural barriers. More research about the unique characteristics of rural pregnant women and breastfeeding mothers is crucial so that interventions can be tailored to their specific needs.

Further research needs to be done to evaluate the effectiveness of interventions to increase breastfeeding initiation and duration rates in rural populations in the United States. Very little is known about applying breastfeeding interventions specifically in rural populations. More research is imperative, considering the low rural breastfeeding rates, the beneficial nature of breastfeeding, lack of harm in interventions, and support for more research cited in other scholarly articles.[7,14,20,23,30] Research needs to be conducted with rural women on interventions that are successful among urban women, such as education, professional, and lay support. As technology advances (ie telehealth), more studies need to be conducted to determine the ease of use and efficacy of such modalities in the rural population. Novel uses of technology to promote breastfeeding in rural areas must also be studied.

All research should include high-quality randomized-controlled trials and should compare different prenatal and postnatal interventions aimed to increase breastfeeding in rural

areas. As quality research is generated, dissemination of findings and assistance with implementing effective breastfeeding support strategies is crucial. Breastfeeding rates in rural areas have been suboptimal for far too long. Rural women and infants need help to bring breastfeeding rates to acceptable levels.

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Appendix

Potential Breastfeeding Barriers
Low socioeconomic status
Social isolation
Maternal work status
Lack of family and social support
Cultural norms that do not support breastfeeding
Limited healthcare access in rural areas

Table 1: Potential Breastfeeding Barriers

Appendix

Rural Practitioner Breastfeeding Support Options
Formal Breastfeeding Education Offer prenatal breastfeeding education classes and resources Rural adaptation: • Include single organized group classes, a series of classes, or providing education at all prenatal visits • Classes may need to be held in churches, schools, or even in homes • Utilize technology to provide supplemental educational material, such as with DVDs, online material, or video conferencing
Professional Support Advocate for breastfeeding Provide on-going in-office breastfeeding support to all family members Rural adaptation: • Be knowledgeable about available resources to provide to breastfeeding women • Consider telehealth, videoconferencing, phone visits, and home visits to provide group and one-on-one assistance • Be able to provide breastfeeding information and answer questions at infant, maternal, and family member healthcare visits
Lay Support Encourage family, friend, and community acceptance and support of breastfeeding Implement a peer-counseling program, or direct women to existing programs Rural adaptation: • Consider the use of landline and mobile telephones, telehealth, the Internet, and smartphones, and mobile applications to deliver breastfeeding support

Table 2: Rural Practitioner Breastfeeding Support Options