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EXPLORING PROVIDER PERSPECTIVES TO UNDERSTAND HOW TO BEST INFORM PATIENTS IN SOUTH DAKOTA

By

Isabelle Lehman

A Thesis Submitted in Partial Fulfillment
Of the Requirements for the
University Honors Program

Department of
The University of South Dakota
August 2021

The members of the Honors Thesis Committee appointed
to examine the thesis of Isabelle Lehman
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ABSTRACT

Informed Healthcare Advocates: Exploring How to Best Inform Patients in Rural Areas

Isabelle Lehman

Director: Dr. Leah Seurer, PhD

Patients in rural areas are more likely to experience worse health outcomes than patients in urban or suburban areas. The reasons for this discrepancy are multi-faceted, including inequities in resources and access, as well as differences in the environment. Rural providers understand what education and resources patients are missing as they often interact with patients in multiple contexts. We interviewed rural providers and performed an inductive thematic content analysis of the interviews to shed some insight into what information rural patients would need to be better healthcare advocates for themselves. Three themes emerged from the interview data: health education, access, and preventative care. This study proposes that patient education could be one path towards better health outcomes for this population. We suggest that a patient resource for rural residents would need to include accessible, quickly understood health education, information about healthcare access, discussion about telehealth, and stress the importance of preventative care for this patient population.

KEYWORDS: healthcare, rural, patient education, health literacy

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CHAPTER ONE

Introduction

Sunflowers, cornfields, and cows grazing in the pasture; the picture of rural America has stayed similar for many years. Everyone knows everyone in rural areas. The tight-knit community comes together to be there for each other. Community may be one cultural aspect of rurality, but isolation also comes with it. Isolation leaves rural citizens cut off from resources their urban peers enjoy, such as grocery stores, gyms, job opportunities, and entertainment (Davis et al., 2016). One practical example of this is within the realm of healthcare. Healthcare workforce shortage discussions replay again and again with very few solutions (Rinne et al., 2020). Problems in healthcare workforce shortage are especially troubling for rural communities (Rinne et al., 2020). Good health outcomes are difficult to achieve for rural patients for many reasons. This study will explore some of those reasons. Rural healthcare must begin to address the challenges mentioned above to achieve good health outcomes (Bolin et al., 2015). The following study will explore what patients themselves can do to meet these challenges. More specifically, this study will explore what patients can do in healthcare encounters and with health education to become more well-informed. Patients who can use health education make better advocates for themselves, leading to better health outcomes.

Academic literature defines health equity as "the attainment of the highest level of health for all people" (Phillips et al., 2020). Rural areas are lacking in health equity because the patients who live there are not attaining the highest level of health. Rural

areas score worse on measurable health outcomes (Davis et al., 2016). Rural areas lack this equal opportunity to achieve health equity as urban or suburban areas for many reasons. One of these reasons is arguably a lack of health literacy. The CDC defines personal health literacy as "the degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others" (Centers for Disease Control, 2021b). The definition is a change from previous reports. One key word has changed: use. Before, the word in place of use was "understand." Patients need to use health education to benefit themselves and their communities. Comprehension is not enough.

In addition to variable health literacy, rural populations are diverse. A population in the rural Midwest may not have the exact same needs as a population in rural Appalachia. Despite the diversity, all people could improve health outcomes with more patient education. To educate patients, providers need to understand the health literacy of their patient population (Kay Miller Temple, 2017). Health literacy has proven to be an issue for many people. Lower levels of health literacy correlate with low satisfaction of healthcare systems and providers and worse health outcomes (Martinez-donate et al., 2013). The goal for rural communities is better health outcomes (Bolin et al, 2015). If providers stretched for time cannot educate patients, someone or something else needs to fill that gap. That is why this project proposes a patient resource for rural communities. When patients have the resources available to make informed healthcare decisions, better outcomes will ensue.

CHAPTER TWO

Literature Review

There are many definitions of "rural." Therefore, "rural healthcare" is historically and currently difficult to define. For this study, we will be using the definition decided on by the Office of Management and Budget. The OMB defines nonmetro areas in two ways; the first is micropolitan areas, or areas between 10,000 and 49,999 in population size, usually surrounding one urban-like cluster that acts as a labor market (Economic Research Service, 2019). The second definition is noncore (Economic Research Service, 2019). All other counties are labeled noncore because they are not part of an urban core (Economic Research Service, 2019). Most counties in South Dakota are labeled noncore, so these counties will be the focus of this study.

Since the 1970s, the reason for studying rural healthcare has been transparent: rural areas lag in good health outcomes (National Rural Health Association, 2021a). Some of this disparity was linked to a lack of access (Health Resources and Services Administration, 2004). In 1977 Congress passed the Rural Health Clinic Services Act (Health Resources and Services Administration, 2004). This legislation aimed to improve access to primary care for rural residents (Health Resources and Services Administration, 2004). Even 44 years ago, it was clear that rural residents were underserved and suffered because of it. That disparity remains, although it has improved since then.

Around the same time in Maine, the National Rural Primary Care Association (NRPCA) was founded (National Rural Health Association, 2021b). Eventually, the

NRPCA merged with other organizations like it to become the National Rural Health Association (NRHA) in 1987 (National Rural Health Association, 2021b). Since then, the NRHA has set out to become the "unified voice for rural health" by communicating with its 21,000 members and raising awareness for rural health issues (National Rural Health Association, 2021b).

In 2016, the NRHA made a statement,

> "[T]he obstacles faced by healthcare providers and patients in rural areas are vastly different than those in urban areas. Rural Americans face a unique combination of factors that create disparities in healthcare not found in urban areas. Economic factors, cultural and social differences, educational shortcomings, lack of recognition by legislators, and the sheer isolation of living in remote rural areas all conspire to impede rural Americans in their struggle to lead a normal, healthy life" (National Rural Health Association, 2021a).

Glaring disparities exist between rural and urban or suburban healthcare. For example, the *Healthy People 2020* program created by the CDC to meet goals for health outcomes in the United States studied seven significant causes of death and set goals for improvement in each of these areas. These areas of study include cancer, chronic kidney disease, dementia, diabetes, heart disease, stroke, and respiratory diseases (Yaemsiri et al., 2019). Between 2007 and 2017, *Healthy People 2020* found that rural areas failed to meet any goals for improved health outcomes (Yaemsiri et al., 2019). On top of that, there was a widening disparity in five of the seven health outcomes (Yaemsiri et al., 2019). The widening gap means that urban areas improved while rural areas remained

neutral or worse for measured outcomes. The discrepancy between the two is vital for many reasons, the most critical being that rural counties have a higher mortality rate than urban counties. One study found that mortality rates were 40% higher in rural counties than suburban counties (Davis et al., 2016).

Now that the overarching issues in rural healthcare are defined, the literature review will focus on subtopics that persistently keep rural patients from achieving good health outcomes. These topics are chronic disease, healthcare access, and social determinants of health (Yaemsiri et al., 2019).

CHRONIC DISEASE

The healthcare system is coming to a critical mass within care and treatment in the United States. As the baby boom generation grows older, there is a higher prevalence of chronic disease emerging. The healthcare system has never dealt with so many chronically ill patients before. A chronic disease lasts one year or more and has one of two criteria: either it limits activities of daily living or requires ongoing medical attention (Centers for Disease Control, 2021a).

The rise of chronic diseases would not be so disruptive if not for the organization of the medical treatment model. In the 1900s, acute conditions ended the most lives, many of them being young children. Over the next century, the advent of vaccinations and antibiotics lessened the burden of acute disease in the United States. As the nation progressed into a different economy type, convenience foods and sedentary work grew in popularity. Poor nutrition, sedentary jobs, poorer mental health, high-stress environments, drug and alcohol use, and environmental factors all played a role in creating the chronic diseases that plague the healthcare system today. The CDC reports

that "six in ten adults in the U.S. have a chronic disease and four in ten adults have two or more" (Centers for Disease Control, 2021a).

The real problem with chronic diseases is that most of the management responsibility falls onto the patient. One physician with hundreds, if not thousands of patients, cannot check on each patient every day. That is why education is an essential aspect of chronic disease management. If the patients can arm themselves with accurate information, they can advocate for themselves at the clinic and home. Good advocates will make the right choices that will lead to better health outcomes.

For patients to make the most of the education they receive, they must understand their health literacy. If patients know they lack a high level of health literacy, they can come prepared with questions. Without self-reflection on health literacy, patients may not know they are receiving education at all. In one study of diabetic patients who received education about foot care and a diet/exercise regimen (both related to diabetes management), 52% reported that they had not received any diabetes education (Feltner, Thompson, Baker, & Slone, 2017). Patient education without an understanding of health literacy may not be education at all. Providers need to know where to point patients when they have questions that require long answers.

Conduits of communication are essential in systems stressed by provider shortage (Feltner et al, 2017). Rural systems are highly stressed by provider shortages. Community health workers may be one of those conduits. One study found community health workers to be an appropriate conduit of health education to patients with diabetes, leading to better health outcomes for the participants (Feltner et al., 2017). If patients are

to achieve high levels of health equity, providers must utilize some method of improved communication.

Even patients who think they know best may be missing some information and missing education could make chronic diseases harder to manage. The gap in patient education is related to low health literacy. Low health literacy can make controlling chronic diseases more difficult for the patient (Ferguson et al., 2015; Martinez-donate et al., 2013). Difficulty in managing chronic disease impacts the patient and their health outcomes. Low levels of health literacy can also lead to frustration when making healthcare decisions (Martinez-donate et al., 2013). Frustration can spill over into the provider-patient relationship, affecting the quality of care. In one study of patients with diabetes, low levels of health literacy correlated with elevated A1C (Ferguson et al., 2015). A1C is a measure of average blood glucose level over three months. A high A1C is a good indicator of long-term elevated blood glucose. Diabetic patients with elevated blood glucose are more likely to suffer from poor health outcomes (Feltner et al., 2017). In the same study, patients reported believing they were controlling diabetes well, even with elevated A1C (Ferguson et al., 2015). These findings demonstrate that patients with low health literacy need extra education to assist with managing chronic disease. Without a physician, patients have to make decisions to maintain their health. To make the best decisions possible, patients should receive adequate patient education. Making healthcare decisions without adequate education sets patients up for failure. Unreasonable expectations can make patients with chronic diseases feel shame and alienation; these feelings can strain the provider-patient relationship.

One chronic strain on the healthcare system in the United States is cardiovascular disease (O'Connor & Wellenius, 2012). Two common types of cardiovascular disease are coronary artery disease (CAD) and congestive heart failure (CHF). These two diseases, along with other cardiovascular pathophysiology, are the cause of almost one-fourth of the deaths in America (O'Connor & Wellenius, 2012). Not only does cardiovascular disease have a mortality cost, but it also costs money. One study found that 17% of all health expenditures is for cardiovascular disease (O'Connor & Wellenius, 2012). That cost is approximately 149 billion dollars. The same study found that rural residents were more likely to have CAD than their urban counterparts (O'Connor & Wellenius, 2012). These findings show that the short-staffed rural healthcare systems have to handle a higher prevalence of disease. Residents in these areas also live with fewer resources which leads to a higher burden of disease.

Chronic disease is pushing the healthcare system to a critical point in the United States. The complications of chronic illness can be manageable or devastating, depending on environmental factors. For patients in rural areas, the lack of resources, including access to physicians, pharmacies, and infrastructure to maintain good health decisions, makes it challenging to avoid chronic diseases. Educating rural patients about the consequences of chronic disease is imperative to slow the progress of disease processes. To mitigate some of the harmful effects of chronic illness in rural areas, patients need educational resources. Now that chronic illness is identified as a rural health issue, we can turn our attention to environmental factors such as healthcare access.

HEALTHCARE ACCESS

Healthcare access includes a wide variety of environmental and socioeconomic factors. These factors include distance, internet access, privacy, provider shortage, and cost (Bolin et al, 2015). These barriers to access all work in tandem to keep rural patients from seeing their healthcare provider, leading to worse health outcomes and preventable mortality (Bolin et al, 2015).

In past studies, healthcare access is the number one priority identified by rural providers (Bolin et al., 2015). Distance is a persisting theme within rural areas relating to healthcare access. The idea of driving many hours to reach the nearest hospital is unthinkable to some, but in rural geography, it is a reality. One study of veterans living in rural areas found that participants cited distance as a primary barrier in three cases: in patients with limited resources (health, function, finances), for specialty and diagnostic services, and emergencies (Buzza et al., 2011). This issue of distance makes emergencies all the more emergent. When the closest ER is more than 30 minutes away, heart attack, stroke, and trauma patients' lives are on the line to get to a provider in time. These findings are essential because distance is one factor that is impossible to change about rural medicine. While other factors may change, an hour-long drive to the nearest clinic will still be an hour-long even if the patient is a great advocate.

The advent of telemedicine has buffered this distance disparity for some patients, but not for all. One report found that over 14.5 million residents of rural areas lived in a place where high-speed internet was unavailable (Douthit, Kiv, Dwolatzky, & Biswas, 2015). Without access to telemedicine, many patients with long drives to routine care

may choose not to seek care altogether. These decisions could lead to dangerous neglect of solvable health issues.

Another issue that leads patients to underreport their health problems is privacy. Anyone who lives in a town of less than a few thousand will tell you that everyone knows everyone. That can create a pleasant sense of community, but not everyone wants their business to be public when it comes to health issues. Rural patients may perceive some conditions as embarrassing or stigmatized (Davis et al., 2016). Rural residents may fear that their clinician may gossip about them, even though there are laws like HIPAA to prevent that situation (Having, Hale, & Lautar, 2008). Many clinicians see their patients in small towns even when they are not at the clinic (Having et al., 2008). Rural residents may choose not to seek care because their clinician is someone they could run into at the grocery store or the gas station. This barrier to healthcare access is unique to rural areas because in urban centers it is easier to access a provider who the patient may never see again (Having et al., 2008).. Until cultural change dictates that health issues are not embarrassing or stigmatized, privacy will continue to concern rural patients.

Another reason patients may choose not to seek care is provider shortage. The National Rural Health Association reports that there are 39.8 physicians per 100,000 people in rural areas, while there are 53.3 per 100,000 in urban areas (National Rural Health Association, 2021a). The discrepancy between the two numbers can lend some insights into rural healthcare. Rural providers are often more isolated, being the only mid or high-level provider in the entire clinic. With workforce shortages abounding, providers in rural areas experience burnout more often (Rinne et al., 2020). Burnout can lead to problems with the quality of care they can provide (Rinne et al., 2020).

Provider shortage can also lead to time constraints that are not conducive to good patient care. The providers may not have time to understand the social determinants of health that hold patients back from achieving health outcomes (Phillips et al., 2020). The discrepancies in understanding can lead to frustrated providers. One study proposed that nurses fill in this gap with screenings for adverse social determinants of health (Phillips et al., 2020). Providers do not have to be specialists to make an impact. Another study found that having a community health center that helps manage primary care conditions lowered emergency room visits by 33% (Douthit et al., 2015). When rural residents have access to clinicians who can help address their needs, the barriers to care are more manageable.

One insurmountable barrier to healthcare access in rural areas is cost. Medical bills decimate even the most well-off people if they are not well insured. Not only do rural areas have more residents living in poverty, but there are also more disparities in insurance coverage for rural citizens (Douthit et al., 2015). In rural geography, more people have Medicare and Medicaid, which might be helpful, but as one study summarized,

> "Rural populations tend to have high shares of low-to-moderate income individuals, those who are in the target population for ACA coverage reforms. However, nearly two-thirds of uninsured people in rural areas are living in a state that is not currently implementing the Medicaid expansion, meaning they are disproportionally affected by state decisions about ACA implementation. As a result, uninsured rural individuals may

have fewer affordable coverage options moving forward." (Douthit et al., 2015).

The healthcare system in America breaks people (Dalen, 2009). Medical bills remain the number one reason Americans go bankrupt, but for some reason, the idea persists that only bad people go bankrupt (Dalen, 2009). No one chooses to have emergencies or rare diseases, or chronic pain. Preventative care can help with some of this unnecessary cost, but first, the healthcare system has to value prevention. The model that most hospitals and clinics operate under now is fee-for-service. Fee-for-service models mean that the more the provider does during the visit, the more the patient or the patient's insurance must pay. Fee-for-service does not mesh well with preventative medicine because more services are reactive instead of preventive. The fee-for-service model will not make the best physicians, and it has not and will never lead to the best outcomes for patients. Until the healthcare system changes, rural patients will continue to suffer the adverse effects of a monetary barrier to care (Dalen, 2009).

SOCIAL DETERMINANTS OF HEALTH

The definitions of social determinants of health are environmental factors that are not intuitively linked to individual and population health. However, social determinants of health have beneficial or adverse effects on the outcomes of both. *Healthy People 2020* identifies five broad categories within social determinants of health: neighborhood and built environment, health and healthcare access, social and community context, education, and economic stability (Paul, Arif, Pokhrel, & Ghosh, 2021). Within all these categories are smaller subcategories that are specific to rural areas.

One of these subcategories is so essential it is the number two priority for rural healthcare providers; nutrition and weight status (Bolin et al., 2015). One reason for the focus on nutrition is that many rural counties are food deserts. A food desert is an area where the occupants have barriers between them and nutritious foods. Combining food deserts and readily available convenience foods means that rural residents are often left with options that are not conducive to good health. Food deserts and lack of financial resources can leave rural residents with food insecurity. Food insecurity makes older adults more prone to having two or more chronic conditions (Leung et al., 2020). Beyond having the conditions, one study found that food-insecure adults were much more likely to report that their health was lacking compared to their food-secure counterparts (Leung et al., 2020). Rural residents are especially susceptible to food insecurity, and healthcare providers would be wise to ask patients about their diet and nutrition.

Another category is exercise and active lifestyle. Rural areas are known for farming and ranching. There is still physical labor involved in both, but farming has been compared to a desk job as the technology progresses. Humans have less and less to do with the growing process. This move towards sedentary work and the lack of infrastructure encouraging physical activity leads rural residents to exercise less than they should. Obesity affects everyone in rural areas, including children. One study reported that rural children were more likely to be obese than their urban counterparts (Hearst, Biskeborn, Christensen, & Cushing, 2013). Childhood obesity is a problem because childhood is when lifelong habits are set in place (Hearst et al., 2013). Obesity is specifically a problem in rural areas because of the lack of infrastructure that encourages

activity (Hearst et al, 2013). Healthcare systems are concerned with obesity because it exacerbates other health conditions, especially chronic illnesses (Hearst et al, 2013).

Beyond environment is population determinants of health. One of the most well-known social determinants of health is race (Paul et al, 2021). It is well documented that people of color experience worse health outcomes than white people. In one recent study about Covid-19, the authors found that counties with higher black and female populations had a higher mortality rate (Paul et al., 2021). This finding supports the idea that the social determinants of health are significant for populations with unequal, far too little distribution of time and energy by the healthcare system. In South Dakota, issues of race almost always bring attention toward the indigenous community. One study reported that about one in six Native American people avoided healthcare settings because of discrimination (Findling et al., 2019). Cultural forces are an important consideration in the healthcare system (Findling et al., 2019).

Including cultural forces when problem-solving in healthcare is imperative. For example, one cultural force in rural areas is self-reliance. For so long, rural citizens had to rely on themselves to fix problems. While this might work with some issues, the body and mind issues are not so easily solved. The opioid crisis that the United States is experiencing is an excellent example of this attitude in action. In a study about diseases of despair in the Midwest, Appalachia, and New England, the authors found that for the first time, without regarding times of war, middle-aged people will have a shorter lifespan than their parents (Dasgupta, Beletsky, & Ciccarone, 2018). This trend in the diseases of despair, such as drug overdose, alcohol-related disease, and suicide, is more pronounced in white, middle-aged people without a college degree (Dasgupta et al.,

2018). Diseases of despair affect everyone in rural areas, not just adults. Rural youth are twice as likely to commit suicide as their urban peers (National Rural Health Association, 2021a).

In terms of preventable deaths, rural areas do much worse, and not just due to suicide. Tobacco use is a priority identified by rural providers as rural areas lag in slowing tobacco use compared with the rest of the country (Bolin et al., 2015). Young people in rural areas are also more likely to smoke or use smokeless tobacco than their urban peers, leading to preventable cancers and early death (National Rural Health Association, 2021a). The cultural reasons for these discrepancies between rural and urban areas are complex. Until the culture around rural areas changes, preventable deaths will continue to be part of living in rural areas (Dasgupta et al., 2018).

Providers in South Dakota have a good idea of what their patients know or do not know. As clinicians, they understand that patients who need more education will more than likely exhibit signs of that deficiency in poorer health outcomes. By asking clinicians about patient education, we can ideally create resources that act as health literacy bridges. The purpose of the study is to help understand what might bring patients closer to being good advocates and making healthful decisions. A healthcare advocate is a patient that makes healthcare decisions that positively impact health which may or may not be encouraged by their environment. To that end, this study seeks to answer the following question:

RQ: What barriers do rural providers see to improving rural health outcomes and what information or resources do rural providers suggest for their patients to achieve better health outcomes?

CHAPTER THREE

Methods

Recruitment

The Institutional Review Board approved the study at the University of South Dakota on May 5th, 2021. The inclusion criteria for this study was that the participant must practice medicine in a defined rural county by metrics of the OMB and be a primary care provider. The primary care provider in this study is defined as the first point of patient contact before escalation of care, usually in an outpatient setting. The participating clinics were recruited by phone call. Human resources departments were given supplemental information. The clinics with a provider available to be interviewed set up an interview time with the student researcher.

Interviews were conducted over the phone and were recorded with a laptop using generic voice recording software already on the laptop. All interview participants consented to interview with knowledge that they would be recorded, and those recordings would be used for research. The providers were asked not to provide any identifying information or protected health information of patients to protect their privacy and comply with HIPAA. All interviews were conducted in June of 2021. The interviews ranged between 15 and 30 minutes long. Providers were not offered any incentive, just the knowledge that they would be helping with healthcare research. In total, the student researcher performed eight interviews. The number of interviews was limited by the time constraints as well as the number of responding clinics.

The interviews were structured and centered on asking providers for insight about their experience in rural healthcare and what they believed to be barriers to healthcare for rural patients. The questions were open-ended to facilitate the providers to answer with their expertise about patients and rural healthcare. Contact information was provided to the interviewee in case they had any follow-up questions or concerns.

Participant Demographics

The inclusion criteria for this study were that the interviewee is a primary care provider in South Dakota. There were seven female participants and one male participant. The participants ranged in job description, with three identifying as physicians assistants, one as a doctor of osteopathy, and four as certified nurse practitioners. The participants ranged in experience level from brand new providers to providers who had almost thirty years of experience. Participants were not selected based on identifying information, including race, ethnicity, sex, gender, or religion. Participants could take part in the interview only if their overseeing clinic agreed. The human resources department gave the providers permission to interview, and the providers set up an interview time with the student researcher.

Data Collection and Analysis

Qualitative data collection methods were used in this study because the student researcher believed that a survey would not accurately portray the perspective of rural providers. Interviews were the primary data collection tool in this study. See Appendix 1 for interview questions. Participants were interviewed over the phone and audio recorded with laptop voice recording software for transcription. The software

Ocenaudio was used to listen back to the interviews for transcription. The student researcher completed transcriptions of the interviews. The data was stored on one laptop and password protected.

The interview data was interpreted using inductive narrative thematic analysis to identify overarching themes between interviews. Thematic analysis is defined as a "method for identifying, analyzing, and reporting patterns within data" (Vaismoradi, 2013). The thematic analysis approach aims to examine narrative materials by breaking data into smaller pieces to look for common themes throughout (Vaismoradi, 2013). The research question focuses on the providers' perspective, so narrative analysis would be most appropriate. The analysis was inductive because the student researcher wanted to create a patient resource from interview data, and such a resource did not already exist. Data was broken down into one of several themes and then identified as fitting into one or more themes. The interview quotes used were the best data points that most accurately identified the theme. There were several other possible themes that many of the providers discussed, but the student researcher determined that these themes would not be as useful to a rural patient if made into a patient education resource. The idea is that the patient resource will help patients in rural areas in several ways: 1) fill patient education gaps, 2) increase health literacy, and 3) eventually improve health outcomes.

During thematic analysis, the student researcher identified three broad themes within the interviews. Data points that display examples of these themes are discussed in the next section.

CHAPTER FOUR

Results

This study was conducted to understand the provider's perspective on what patients need to know to be better healthcare advocates. Rural providers have a unique perspective on their patients as they often know them intimately and within several contexts. Rural providers may be the most well qualified to answer what resources their patients are missing because of this perspective.

Three main themes arose in the interview data. These themes represent the primary barriers identified by the interviewed providers during data analysis. They are 1) Health Education, 2) Access, and 3) Preventative Care.

Theme One: Health Education

All providers mentioned at some point during the interview a need for higher amounts of patient education. Throughout all of the discussions with providers from different counties, the endurance of education made this concept an overarching theme.

Patient education is a large part of worsening health outcomes, and all the interviewed providers understood that. When asked what education she would like to provide, one provider said, "Talking about different health conditions and what causes those. What we can do to help you." Clinicians want to help their patients lead healthier

lives. Health professionals are trained to understand that health is not just about pathophysiology or accidents. Health is holistic because every aspect of life can positively or negatively impact human health and wellness. Providers want to arm their patients with the most knowledge to help protect them from adverse health outcomes.

As rural Americans work to stay healthy, they also struggle less tangibly online. Misinformation is rampant online. One provider brought up patients googling symptoms before a visit, and coming to the office with misinformation.

> "It's a fine line because there is so much misinformation and it's okay when they google, you know, to address your particular concerns…but then it's also easy to say, you know, I don't want to get the Covid shot because it's going to make me magnetic or whatever it is on the internet."

Providers become frustrated with the speed at which misinformation spreads online. The only solution is a reliable patient education source that is consistently correct and shows actual results. Good patient education aims to fill the vacuum of information that the public so desperately wants to be filled. When accurate, factual information is firmly in place, there is no need to cling to the words of charlatans.

As providers struggle to educate, care for, and manage complex patients, the juggling act will allow balls to drop. The interview data suggests that patient education is one of the first balls to drop, signifying a change in patient attitude. When patients see that clinicians are not educating them, the underlying message is that health education must not be significant enough to talk about, even at the doctor's office. This attitude

has been part of the cause for many Americans neglecting their health until the worst outcomes appear. Shifting the focus will be difficult, but not impossible.

Theme Two: Access

A second central theme noted by healthcare providers was access to healthcare as a primary barrier to achieving good health outcomes. Multiple factors affect access to healthcare, but the elements that the interviewees focused on included distance and telehealth.

Distance

Many providers cited distance as a primary barrier to healthcare in their communities. Rural communities are known to be spread out, but some patients have to drive many miles to reach the nearest clinic. Some providers included this in their hypothesis of why rural patients have worse health outcomes than urban patients. As one provider put it, “I think one of the biggest ones [reasons for poor health outcomes] is access to care; where we are, we have patients driving from two hours away to get care because we’re their closest provider.” Two hours just to get to a clinic could turn anyone off from seeing the doctor. For rural patients, distance can make even chronically sick people hesitant to see their provider.

Another provider hypothesized that distance might be the cause of some discrepancies in health outcomes regarding emergency medicine:

> “Someone who is having chest pain, it may take them a half hour to get to the hospital. In the city, it might take them ten, fifteen minutes. If you

call an ambulance here, it takes twenty minutes to get out there, twenty minutes to get loaded up, and another twenty minutes to get back in; well, that's an hour."

Many providers also cited distance as a barrier for patients who need specialty care. Primary care providers are the first point of contact in patient care and can assist patients with finding specialists if they need one. If patients are hesitant about traveling, the specialist who is hundreds of miles away is useless to that population. One provider cited several hurdles about setting patients up with specialists:

> "Care might be really far away from them. I struggle with getting them specialty care, not only for the money part of it but like, the travel and the time. It's just a little bit different when you have to travel several hours to see that specialist."

For patients to take time off of work, travel several hundred miles, possibly need a hotel room, and travel back is expensive and might not be worth it to the patient with limited resources. Specialty physicians are often concentrated in urban areas, making them especially difficult to access for rural patients with difficulty traveling.

Telehealth

Access is an exciting theme in the interviews because it seemed to be the only theme with a semi-working solution. The solution in question is telehealth. Many of the providers mentioned telehealth unprompted in the interview but expanded upon it

when questioned further. Clinicians mentioned two areas where telehealth was beneficial: emergency medicine and Covid related access.

Rural hospitals and clinics are primarily staffed by mid-level providers, meaning specialists like emergency medicine physicians usually are not present in the ER. One physician participant explained it like this:

> "I'm family medicine trained, all of us here are, and that means we don't have specific emergency training…to be able to hook up to Sioux Falls to an emergency room doctor who can tell me exactly what to do and make the arrangements to get that person where they need to go is great."

The implications of telehealth in the ER for rural providers are enormous. Now providers who would not regularly perform rare and lifesaving procedures can do them in rural ERs.

Telehealth in the ER can genuinely save lives. But what about in the clinic? In the past year and a half, the pandemic made patients afraid to go into the clinic. Telehealth was a viable solution, and many providers used it during the height of the pandemic. In response to whether telehealth has changed rural practice, one clinician said this, "With the last year and the pandemic, it has become a huge thing for us even in primary care… it's becoming a lot more of the norm." Patients in rural areas still face disparities in accessing telehealth, but it seems like it is a step in the right direction towards improving rural health outcomes.

Theme Three: Preventative Care

One part of improving health outcomes that rural providers mentioned was coming in for preventative care. As one clinician put it, “prevention is easier than treatment.” Once a disease process has started in motion, there is no way to stop it, only slow it down or outlive it. In acute disease, most viral and bacterial infections will pass on their own as the pathogen moves out of the host body. In the case of chronic disease, with early detection and urgent action, chronic disease processes can be slowed down enough to not adversely affect the patient’s lifespan. These possibilities also rely on patients coming in to get routine checkups.

Many providers mentioned that some populations of rural patients are specifically bad at coming in for preventative screenings. One clinician summarized her struggle with patients who do not come in for preventative care:

> “The other thing I see is that people are just hesitant...you’ll come in at age fifty, and you haven’t had medical care in twenty years because you haven’t been sick...but now you have a list of diagnoses and pills because you didn’t get care for twenty years.”

For patients to not feel blindsided by medical professionals, they have to get preventative care done when they are feeling well. Preventive care can help to mitigate some of the factors working against patients in rural areas. Regarding chronic disease, the case is strong for preventative maintenance. Routine checkups can catch disease processes while they are still in infancy, leading to a path towards prevention instead of devastation. One provider summarized the rural patient struggle against chronic disease, “The best treatment for your chronic diseases is to catch them early and either prevent

them or limit them from getting worse quickly…I think that's a struggle because when people don't feel it right now, it feels less real."

Patients need to understand the importance of preventative care. Patient education could be an excellent way to teach rural patients about all the great reasons to go into their clinic annually and receive routine checkups. Catching chronic conditions early is the most crucial aspect of this regular care. Finding diabetes while still prediabetes versus when it causes symptoms may mean the difference between keeping or losing a limb.

After the interview data was analyzed, it was clear to the student researcher that moving forward, patients in rural areas need some applications of these honest discussions with the very providers who serve them. The following section will consider what patients can expect in the future.

CHAPTER FIVE

Discussion

Interpretation of Results

The results of this study are reinforced by data about health outcomes in rural areas. Since the 1970s, it has been clear that rural populations struggle with achieving the same levels of wellness when compared to populations with more resources. The providers interviewed identified three key areas that would help patients with achieving desirable health outcomes. Education, access, and preventative care are all themes

within the interview data with a tangible solution. That solution includes reliable patient education. The themes support the need for a patient education resource for rural residents. When patients understand their health education, they can make better healthcare decisions, thereby improving their outcomes.

In terms of education, rural populations are already at a disadvantage. The school systems in rural areas are typically stressed by a lack of resources (Aghazadeh & Aldoory, 2020). The lacking education system can lead to adults who were not afforded the same educational privileges as those in urban school systems. Health literacy can be taught to childhood at school, and it successfully raises student awareness of health concerns (Aghazadeh & Aldoory, 2020). If health literacy is not taught in rural schools, it falls onto providers to educate patients about health and wellness. Patient education has proven to be problematic between providers being chronically short on time and patients absorbing misconceptions from online sources. If the providers cannot educate patients, there must be some other patient education resource to help rural residents care for themselves.

Access to healthcare has been a barrier in the past that keeps rural populations from achieving good health (NRHA, 2021a). Rural areas have long been underserved, keeping a barrier to care firmly in place that rural residents did not have any control over (NRHA, 2021a). Distance keeps rural residents at risk of worse health outcomes, especially in emergencies (Buzza et al., 2011). With the advent of telehealth, some of that barrier seems to be dissolving. Although many rural patients are still without dependable internet, telehealth can help patients receive emergency care and specialty care that they would not otherwise access.

Preventative care is the last barrier that rural providers discussed at length during interviews. Rural residents need preventive care to help mitigate some of the barriers to care that cause worse health outcomes. Getting rural patients to the clinic may be difficult, so other avenues to keeping rural residents in good health may be in order. From chronic disease management programs to preventative screenings at a lower cost, rural providers have great ideas about getting rural patients to get preventive care. The challenge is making rural residents aware of these ideas. That is where a patient education resource could be helpful.

Limitations

This study had several limitations. First, the recruitment of providers was difficult. There are few providers with a solo practice in South Dakota, so recruitment had to go through human resources departments of healthcare businesses, prompting a longer recruitment time. Second, clinicians are not often found with spare time. Providers in rural areas often have to wear many hats, meaning that even when they are not busy being healthcare professionals, they are involved in other activities like keeping up with Covid cleaning criteria and participating in budget meetings. Third, the clinics that participated were only in South Dakota, leading to a provider sample size that was only knowledgeable about rural South Dakotans. Future studies should include providers from multiple different rural areas. Lastly, the providers were relatively similar in demographics. The sample size was almost all female and had a majority of providers self-identifying as mid-level providers. The perspective of more rural M.D.s or D.O.s would also be helpful in future studies.

Personal bias was a limitation in this study as well. The student researcher did all transcription and analysis of the data, so human error adds to the limitations. In addition, the student researcher has a vested interest in rural health, so there was a bias when evaluating the data through inductive thematic content analysis. The themes identified may not be the only themes in the data that would add to health education, the themes are only the ones identified by the student researcher who has limited knowledge and experience.

Practical Applications

Being a healthcare advocate both in and out of the healthcare setting means understanding the barriers to good health outcomes and working with a clinician to overcome them. For patients, this can mean making good nutrition choices, keeping regular wellness appointments, tracking symptom data at home, asking about sliding fee services, and a whole host of other things. My goal is to make a resource that makes overcoming these barriers easier for patients in rural populations. This resource should have multiple modalities of communication to make consumption by rural patients easy.

Practical applications for clinics include asking patients more screening questions relating to their knowledge of health and healthcare. If the clinics in small towns found that many of their patients needed a similar resource, there might be a stronger case for it. Clinics could help patients understand telehealth and how it might be able to increase their access to healthcare if they live in an area that is several hours drive away from the doctor's office. This option may not be available for patients who do not have access to

the internet. Clinics could also try to organize more preventative care events with screenings at a reduced cost. These events could help bring patients who might not normally go in to get preventative care done into the clinic.

For rural providers, the information from this study could prove to be useful. Although clinicians working in a system often cannot choose how much time they get with each patient, they may be better able to prioritize their time when patients have educational resources available to them.

Future Directions

In the future, researchers could interview providers across other rural spaces to glean more knowledge about what patients need across different populations. Rural populations are diverse, and every population needs various interventions to reach the national goals for health outcomes. Provider perspectives from multiple states or other areas of the country could help determine if there is one factor that all rural patients could use. One hypothesis is that all rural patients could use more health education, and that hypothesis led to the creation of this study. Further studies could address whether other variables would help all rural patients improve their health outcomes.

CHAPTER SIX

Conclusions

The research question of this study was about finding the information that rural patients needed to become good healthcare advocates. The purpose of this research question is to survey providers in South Dakota to find some expert perspectives on rural patients and their needs. The long-term goal is to eventually develop resources for rural patients to help overcome the many barriers to good health that are specific to rural geography. During the research phase of the study, it was determined that rural patients have multi-faceted obstacles to achieving good health outcomes; those barriers include chronic diseases, access to healthcare, and social determinants. These barriers lead to worse health outcomes for rural patients, stressing healthcare systems in the underserved rural areas. During interviews, three main themes arose from discussions with rural providers about the information that rural patients need. The themes were health education, access to treatment, and the importance of preventative care. Interviewees discussed other barriers to wellness in rural areas, but these areas have a solution. The solution proposed by this study is a patient education resource to assist rural patients with the acquisition of health education, making it easier to be a better advocate. The hope is that rural patients who are better advocates for health and healthcare will lead to better health outcomes for entire rural populations. Although many barriers are immovable, education is not one of them. When patients have the health education they need to make good healthcare decisions, better population health will follow. Healthcare is a hot-

button issue with many variables that lead to inequitable distribution of resources. Patient education may be one way to help rural populations in their efforts to live a healthy life. Rural residents must be informed advocates for their healthcare; only then will they have health equity.

APPENDIX 1

1. What do you want your patients to know before coming to your office?
2. If you had more time, what would you explain to your patients during their visit?
3. Research shows that rural patients experience worse health outcomes than urban patients. Why do you think this is?
4. What information would make your patients better at controlling chronic disease (i.e. diabetes, CHF, COPD, etc.)
5. What do you feel is the greatest challenge that comes with being a healthcare provider in a rural setting?
6. What do you feel is the greatest benefit that comes with being a healthcare provider in a rural setting?
7. If you could change one thing about healthcare in rural America, what would it be?
8. How do you think the advent of telehealth has changed rural medicine?
9. In a post-COVID-19 world, what do you want patients to know about their healthcare?
10. What information do you think would increase your patient's adherence to your prescribed interventions?
11. What actions do you take to put your patients at ease about their privacy?

12. What do you think is the best way to lower healthcare costs?

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