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Healthcare Access Barriers in Rural America

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Abstract: *In rural America, the path to accessing healthcare is met with many challenges. These challenges can present geographically and structurally within rural healthcare systems, as well as larger healthcare delivery entities. Due to these access barriers, rural Americans are at higher risk for developing poor health outcomes, as compared to their urban counterparts. Among these are higher mortality and morbidity rates, higher instances of chronic conditions, and higher rates of childhood obesity. Because rural communities are at risk for adverse health outcomes, it is vital that research and policy be geared toward reducing barriers to accessing healthcare within this population. To effectively understand the needs of this unique cultural cohort, healthcare institutions and agencies should utilize community-based participatory research (CBPR) to identify specific areas for improvement in the delivery and quality of rural healthcare. CBPR would reduce health disparities and improve quality of life for rural communities.*

Keywords: Healthcare, Rural, America, Healthcare delivery, Health outcomes, Disparities

To understand healthcare access barriers in rural America, it is necessary to first define the differences between rurality and urbanicity. Most recently, urban areas have been defined as a compactly settled area that qualifies within population density requirements (50,000 or more people), coupled with the presence of adjacent territories that utilize space for non-residential purposes (United States Census Bureau, 2015). Alternatively, rurality encompasses all territory, residential structures, and populations not included in areas that meet the urban definition (United States Census Bureau, 2015). Americans living in these rural territories face many barriers when accessing quality healthcare. Access to healthcare in the United States can be further determined by five interrelated factors: availability, accessibility, affordability, accommodation, and acceptability. While these factors will be defined and elaborated upon later in this paper, it is necessary to first identify them to gain insight into the complexities of accessing healthcare.

To identify specific barriers, there is an overwhelming lack of

healthcare professionals practicing in rural America compared to their urban counterparts (Shi & Singh, 2019). A surplus exists among healthcare providers in urban areas, leading to an imbalance of available care at the expense of rural communities (Anderson, Saman, Lipsky, & Lutfiyya, 2015). Additionally, geography may leave rural communities at an accessibility disadvantage. Rural residents must travel farther to receive care, at any level of the care continuum, as compared to urban residents (Beedasy, 2010). Moreover, rural Americans encounter reduced access to primary care physicians, and rural residents encounter deficiencies in accessing obstetric care, mental healthcare, oral health services, as well as substance abuse treatment (Benevides-Vaello, Strode, & Sheeran, 2013). Availability of transport, financial barriers, poor health education, and poor weather conditions are several other factors that may adversely impact healthcare access for rural residents.

Methods

For the purposes of this paper, the researcher searched varying journal databases to compile data surrounding healthcare delivery and health status among rural and urban settings in the United States. A majority of the literature reviewed was collected from CINAHL and Academic Search Complete; these databases specifically provided comprehensive data about healthcare in rural communities. Information was also found through Google Scholar and MEDLINE.

For each of these databases, the same criteria were used to establish time frames and geographical considerations for the research studies utilized. Sources, with limited exception, have a publication date falling between 2011 and 2018, as well as have a specific focus on the United States population and geographic relevancy to urban and rural settings throughout the nation. Inclusion criteria also encompassed peer-reviewed studies along with the addition of a few high-quality websites with reliable information on healthcare in rural communities in the United States.

Once the foundation for research criteria was established, the researcher developed a systematic list of terms/keywords in order to ensure that proper and relevant information was being collected as it relates to healthcare access and quality in rural America. To view a comprehensive list of terms and keywords used for this project, see Table 1.

National and Community Healthcare Issue

According to the United States Census Bureau (2015), 19% of the United States population is comprised of rural residents. Within this population, individual health behaviors suggest that rural children are more likely to be obese and overweight, rural adults are more likely to smoke, rural adults demonstrate poorer eating habits, and greater rates of alcohol and substance abuse plague rural communities (Anderson et al., 2015).

Health behaviors have certain implications for health outcomes. Along with these health behaviors, rural areas are subject to an overall higher vehicle mortality rate, and rural populations are also more likely to develop type II diabetes mellitus as well as having a greater prevalence of suicide (Anderson et al., 2015). Low socioeconomic norms commonly found within rural America often leave many individuals uninsured. In 2016, the per capita income for rural American households was \$45,830 compared to \$59,039 for the country overall (RHIhub, 2018). The average rural family earning this income, with consideration to household size, may qualify for premium tax credits that lower monthly healthcare premiums (Shi & Singh, 2019). However, these subsidized premiums often do not fit within a budget for a household's living necessities. Communities with generally low health outcomes are substantially more adversely affected when receiving affordable insurance is met with numerous barriers. Preventable negative health outcomes affect a large percentage of the overall population who are receiving inadequate healthcare services and lacking in health education. Disparities found within overall health demonstrate the divide between healthcare access and quality present throughout rural and urban communities in America.

On a communal level, accessing quality healthcare is a challenge for rural Kentuckians. When addressing accessibility within rural Kentucky, it is necessary to note that 44% of Kentuckians reside in rural regions (United States Census Bureau, 2015). With nearly half of Kentucky's population being rural, it would be irresponsible to not address public health concerns of Kentucky's rural populations. Rural Kentuckians experience higher instances of tobacco use, obesity, diabetes, cancer, CVD, and arthritis when compared to the national average (Starcher, Geurin, Shannon, & Whitley, 2017). Additionally, Kentucky has a higher number of individuals living below the poverty line and higher trends of living without health insurance (Starcher et al., 2017). A large portion of Kentucky's population is living with chronic conditions that could have been prevented if they had received proper primary care and had access to public health programs/initiatives to combat the likelihood of developing poor health outcomes.

Impact on Delivery of Healthcare

Proper access to healthcare enables clients to receive the appropriate care from the right provider, in the right place, and within a timely manner (Saurman, 2016). Access to healthcare is determined by five dimensions: availability, accessibility, affordability, accommodation, and acceptability (Shi & Singh, 2019). These five factors are all influenced, to some degree, by rurality. Availability and accessibility are two spatial factors, determining the options of healthcare services to choose from within an area and the geographic distance to those services. As previously mentioned, there is geographic maldistribution of healthcare providers and services (Beedasy, 2010). Within urban populations, there are 93 primary care practitioners per

100,000 populations, compared to the mere 55 per 100,000 populations in rural settings (Shi & Singh, 2019). There are clear discrepancies in the spatial distribution of providers, presenting rural communities with inadequate opportunities for basic care within an optimal and affordable distance to their homes. Considering the many health conditions and increased risk factors rural residents face, access to advanced medical care is vital to survival and quality of life. A study conducted to examine access to tertiary services in rural Idaho determined that the average rural resident had to travel 48.5 miles to receive tertiary care, compared to the average urban resident who had to travel just 25 miles (Beedasy, 2010). Longer travel distances to receive necessary care may increase stress and financial burden on those rural residents who are already ill. Availability and accessibility coincide to adversely impact the delivery of healthcare to rural residents by establishing physical and conceptual barriers between health services and rural communities.

Affordability, accommodation, and acceptability are also impacted by geographical factors, although the connection is not as concrete as the spatial factors in the accessibility category. Affordability for healthcare has geographic implications when examining the low socioeconomic status of rural America (Housing Assistance Council, 2014). Data collected using the County Health Rankings (CHR) determined that rural Americans more often fell within the fourth quartile (the lowest ranking) for socioeconomic outcomes, compared to urban residents (Anderson et al., 2015). Healthcare costs continue to rise even considering the implementation of the ACA (Shi & Singh, 2019), leaving many poor and near-poor Americans without insurance or with high premiums that may contribute to a cycle of financial disadvantage. Additionally, rural residents who qualify for Medicaid may be turned away from health services due to the low reimbursement rate for physicians accepting Medicaid patients (Shi & Singh, 2019). Medicaid expansion allowed for many American families to qualify for health insurance or subsidies for insurance premiums, but the legislative decision to expand Medicaid was allocated on a state-by-state basis. Currently, 2/3 of rural residents live in a state choosing not to expand Medicaid (Newkirk & Damico, 2014). There is a high demand for public programs and legislation that will provide affordable healthcare alternatives for a population battling low socioeconomic conditions and high instances of adverse health outcomes.

Accommodation reflects the extent to which a healthcare provider meets the needs and constraints of a client or population (Shi & Singh, 2019). Rural Americans face barriers to accommodations with decreased communication between client and provider, increased difficulty in meeting hours of operation, and deficiencies in receiving timely and accessible referrals. Urban Americans, because of their average closer residential distance to health services, do not have to manage many of these accommodation gaps. Accommodation is a complex structure within

the organization providing the service (Saurman, 2016); therefore, the provider and facility should recognize the barriers their facility might pose for rural communities. From a geographical perspective, accommodation is negatively impacted when rural residents must navigate factors that are generally designed to the advantage of the urban resident.

Finally, acceptability in healthcare services is determined by cultural and social characteristics unique to rural America. Culture in rural communities is deeply rooted in traditions and beliefs that have remained relatively unchanged over time. For example, guiding values for Appalachians are characterized by self-reliance and independence (Starcher et al., 2017). These same values are continually represented throughout rural America. Concrete values such as these may create a long-term dynamic that is contradictory to positive health outcomes. These values encourage patients to be their own health advocates within the realms of their own homes and communities. Poor health literacy and low education attainment, coupled with strong social and communal connections characteristic of rural America, may have created an environment for the spread of inaccurate health management information (RHlhub, 2018). Providing these communities with poor health delivery experiences only further exacerbates poor health knowledge. Acceptability of healthcare is continually determined by the attitudes of clients and providers (Shi & Singh, 2019). Providers should be equipped with culturally-specific communication skills when working with this unique cohort to alter attitudes of healthcare and spread health education. Poor health education due to limited public programs in rural communities may have allowed for this culture of adverse health to continue.

Possibly related to these access barriers, rural communities have shown overall higher mortality and morbidity rates, as compared to urban areas (Anderson et al., 2015). The Center for Disease Control and Prevention (CDC, 2017) reports that rural Americans are more likely to die from heart disease, unintentional injury, cancer, stroke, chronic lower respiratory disease, and high blood pressure, compared to individuals living in urban areas. High rates of chronic and preventative illnesses may be attributed to the adverse health behaviors commonly practiced in rural communities. Rural communities more commonly engage in cigarette smoking, have lower seatbelt usage in motor vehicles, and are less likely to have regular physical activity participation (CDC, 2017). An enlarged aging population coupled with the low-socioeconomic norms of rural America may have contributed to the prevalence of chronic conditions and comorbidities within this medically underserved population (Shi & Singh, 2019). These poor health outcomes illustrate a large gap within the healthcare delivery system between rural and urban delivery structures. Health professionals must refocus and reallocate the advanced technological resources at their disposal to properly serve and address the health needs of rural Americans.

Overall, these five dimensions of access to healthcare are

collaborative in constructing barriers to healthcare delivery in rural areas. Rurality components hold influence over each dimension of access. For this reason, it is pertinent to focus on overcoming the geographical barriers to healthcare by improving public health initiatives, education, and health literacy. Geography cannot be altered, but institutional change can be facilitated.

Populations Impacted

There are many subpopulations affected by rural healthcare disparities. Among these subpopulations are minority groups, children at risk for being overweight, individuals with mental and substance abuse disorders, and adults living with chronic conditions. Minority groups living in rural America are disproportionately plagued with many of the same challenges to accessing healthcare. Research has been conducted to determine relationships between geography and race/ethnicity. It was discovered that rural minority populations fare worse in overall health status than rural whites (Meit & Knudson, 2017). Additionally, fewer rural non-Hispanic blacks (73.2%) and Hispanics (61.1%) reported having health insurance than their white counterparts (83.9%) (James et al., 2017). Referencing this same data set, it was determined that rural minorities were less likely to see a physician due to cost, were less likely to have a primary care physician, and less likely to seek out preventative services than rural whites (James et al., 2017).

Examining the broader population, childhood obesity is a growing epidemic with many factors to consider. There are notable differences in the prevalence of childhood obesity in rural versus urban settings. Children living in rural communities are 55% more likely than urban children to be obese (Berlin, Hamel-Lambert, & DeLamtre, 2013). The factors that contribute to this large percentage include high caloric and dietary fat intake, low socioeconomic status, lower frequency of physical activity compared to urban families, and limited access to quality holistic health education (Berlin et al., 2013). Developing a cycle of poor childhood health behaviors in rural communities may continue into adulthood, creating an increased likelihood of developing chronic conditions as these populations age.

Across the lifespan, rural Americans have fewer resources at their disposal for the prevention and treatment of chronic disease. In the United States, 1 in 3 rural adults is in poor to fair health and nearly one half of the same cohort is living with at least one chronic illness (Artnak, McGraw, & Stanley, 2011). Additionally, rural individuals are more likely to develop multiple comorbidities compared to their urban counterparts (RHihub, 2018). Prevalence of chronic conditions such as high cholesterol, hypertension, arthritis, depression, diabetes, COPD, and heart disease is much higher within the confines of rural America (RHihub, 2018). High rates of chronic disease in rural adults can be attributed to an aging population, increased rate

of adverse health behaviors, lack of primary care access, and environmental-borne factors found in rural-based occupations. Systematically, as rural hospitals contribute to the shift from inpatient services to primary centers for outpatient treatment (Shi & Singh, 2019), rural health structures are increasingly less equipped to provide comprehensive care, further limiting local access to necessary services for rural residents (Artnak et al., 2011). The prevalence of chronic conditions in rural communities may continue to grow if access and availability are not made a priority within the healthcare delivery system.

In addition to the poor prevention and treatment of chronic diseases, adequate delivery of mental health and substance abuse services is a challenge for providers in rural settings. Rural residents experience substance abuse and mental health disorders at similar rates as urban residents, although sometimes higher, but the availability of treatment is scarce (Substance Abuse and Mental Health Services Administration [SAMHSA], 2016). From a provider perspective, healthcare professionals in rural settings face increased difficulty in maintaining confidentiality, limited resources, isolation from other qualified mental health professionals, as well as stronger obstacles in establishing trust with their clients (Pullen & Oser, 2014). Cultural barriers and stigma influence the accessibility and acceptability of mental health and substance abuse treatments in rural areas to receiving these types of services, geographic isolation, as well as low socioeconomic status (Benavides-Vaello, Strode, Sheeran, 2013). There has been some research to demonstrate the relationship between population size and stigma related to mental health services; the smaller a community is in population, the larger the stigma (Smalley et al., 2010). The attitudes and stigma commonly associated with seeking mental health and substance abuse treatment in rural communities may negatively influence the acceptability and effectiveness of any treatment provided.

Healthcare Delivery Systems and Access Disparities

Rising healthcare costs have left rural Americans at an even greater disadvantage in receiving adequate healthcare. Cost containment is met with resistance due to the growth of technology, practice variations, defensive medicine, and a multi-payer system with competitive prices (Shi & Singh, 2019). Rural Americans living in relatively low economic conditions must regularly choose between paying for basic everyday needs for themselves and their families or paying for healthcare that they require to survive but cannot afford. Rural communities are characterized by lower incomes and Medicaid enrollment, leaving them at a constant financial disadvantage (Teufel, Goffinet, Land, & Thorne, 2014). Additionally, the cost of healthcare related to chronic disease, which is more commonly occurring in rural residents, accounts for 75% of healthcare expenditures (Teufel et al., 2014). Refocusing rural population-based interventions could effectively decrease the occurrence of chronic conditions and reduce overall healthcare

expenditures.

Accessibility is considered a key determinant of health (Shi & Singh, 2019). Furthermore, disparities in health access are outlined by race/ethnicity, socioeconomic status, and geography. These are dynamic factors found within rural America, negatively affecting rural population health. Physician shortages throughout rural communities is a key contributor to the poor health outcomes in rural areas (Kippenbrock, Lo, Odell, & Buron, 2017). Public programs are not fully addressing these systemic barriers to healthcare. The implementation of the ACA directly influenced healthcare access disparities (Shi & Singh, 2019), but there are still rural individuals being left behind through gaps in the overall delivery system.

Quality in the delivery of service in rural communities is a substantial challenge. From a micro perspective, clinical quality of care can be measured by the quality of facilities where care is delivered, the qualifications and skills of health professionals, the processes and interventions utilized, and the results of these effects on the client's health (Shi & Singh, 2019). Rural facilities have less technologically advanced resources and equipment, lower quality of overall care administered, and decreased overall clinical outcomes (Joynt, Harris, Orav, & Jha, 2011). When analyzing quality through a macro lens, it is necessary to understand the quality's relationship with the greater population. Quality is measured by the overall health of the population served, life expectancy, mortality, and morbidity (Shi & Singh, 2019). As previously established, health factors and outcomes within rural regions do not correlate with a high quality of care delivered.

Cost, access, and quality are three separate but collaborative components that affect healthcare delivery in rural America. Unaffordable healthcare costs, overall accessibility deficiencies for rural residents, and poor quality of present services delivered create a recurring continuum of poor health in rural communities. Rather than analyzing cost, access, and quality in overall healthcare delivery, addressing these unique components associated with rural American communities may provide insight into possible solutions to rural health disparities. Community-based research and interventions are needed to analyze each of these components within rural healthcare delivery.

Occupational Science and Access Disparities

Policymakers and health professionals could largely benefit from utilizing an occupational science perspective to establish programs and treatments that maximize positive health outcomes in rural communities with consideration of contextual and environmental influences on health and health behaviors. Context is comprised of the cultural, personal, temporal, and virtual conditions residing within the individual and greater population (American Occupational Therapy Associations, Inc. [AOTA], 2016). For the purposes of this paper, personal and cultural contexts will

be applied to healthcare delivery. Population health is influenced by culture through beliefs, behavioral standards, expectations, and social factors (Day, Ashcraft, & Scott, 2017). These factors are not separate from each other; rather, they culminate to establish community characteristics and overall health. It is vital that health professionals consider that meaning, for many individuals, is directly derived from the communities in which they grow and live. As previously discussed, rural American culture is often characterized by an independent, determined, and self-reliant attitude. This idea of individualism fosters deterrents and misinformation regarding the receipt of healthcare services. To combat these deterrents, rural service providers and policymakers must consider and become fluent in the unique cultural aspects of rural communities and the challenges they face to sufficiently deliver quality care and develop a positive rapport with these communities (Mason-Baughman & Kisiday, 2013). It is imperative to include training and education on rural health culture into healthcare programs and research training.

Personal context describes all of the features of an individual or population not directly associated with health status or condition (AOTA, 2016). Personal context influences healthcare delivery considering that age, gender, race, and socioeconomic status are personal determinants of health and accessibility (Shi & Singh, 2019). While these factors impact health status, the individual should not solely be described by their health condition. An individual's mind and body are not to be treated as separate entities but as a unitary force that determines responses and attitudes of health (Taylor, 2017). Learning and taking the necessary time to understand a client's desires and beliefs will better equip health professionals in implementing holistic interventions and treatment programs designed to maximize the individual's outcomes. Implementing community-specific interventions derived from cultural characteristics, while also considering the personal contexts of individual clients, may increase the quality and acceptability of care delivered.

Environmental influence of health is determined by physical and social components, which are external factors surrounding an individual or population (AOTA, 2016). Physical (geographic) barriers to healthcare hinder rural individuals' process of receiving timely and accessible health services. Additionally, the lack of available public transportation to these health services is a population-wide physical barrier to healthcare in rural regions (Beedasy, 2010). From a social perspective, continual lack of policy and legislation to maximize positive health opportunities in rural areas on a local level results in vast health inequities between rural and urban communities.

Because context and environment are overarching terms comprised of several subcontexts, it is pertinent that healthcare providers and policymakers consider how each of these components impacts diverse

rural populations differently. These components are interrelated and each has its own implications within healthcare delivery and health status. These considerations will allow legislatures, public health officials, and rural providers to design programs that are population-specific and holistic.

Access Disparities and the Roles of Occupational Therapists

There are many present opportunities for Occupational Therapists (OTs) to improve the health and occupational performance of rural clients. There has been some evidence to suggest that rural communities suffer the consequences of the shortage in available OT services more so than urban communities (Johnson, Johnson, Zurawski, & Siegel, 2003). Access exists from dual perspectives when delivering OT services in rural settings, for provider and client. OTs must be equipped to work with many complex conditions while having limited resources, utilize flexibility, and travel long distances to provide care (Johnson et al., 2003). This increased responsibility for OTs is a challenge for the retention of therapists in rural practice.

In reducing access disparities, a primary role of OTs in rural settings is to utilize evidence-based practice (EBP). Taking advantage of literature and evidence found through practice will allow therapists to make informed decisions in intervention and planning processes (Dai, Burke, & Thomas, 2012). Occupational science is an evidence-driven field; therefore, OT services should be continually derived from EBP to provide clients with effective, client-centered care. Through EBP, OTs can educate clients and the community on chronic disease prevention and the consequences of adverse health behaviors to ultimately improve quality of life. However, there are present barriers for OTs wishing to implement EBP in rural settings, including limited access to varying evidence sources, lack of available transport, and distance to accessing quality evidence (Dai et al., 2012). To offset these challenges, OTs should consider implementing EBP through telehealth avenues. Telehealth interventions rely upon the utilization of telecommunication technologies in delivering health services from a distance (Shi & Singh, 2019). Utilizing telehealth in the delivery of OT services has the potential to increase accessibility to clients in rural areas while improving access to outside team members and specialists for rural practicing OTs (Cason, 2012). Telehealth in OT is applicable when developing client skills, incorporating adaptive techniques/equipment, modifying environments, and community health promotion and education (Cason, 2012). Delivering telehealth may present challenges for providers when gaining access to necessary funds for technological equipment and approval for telehealth as a therapeutic modality, although the benefits may outweigh possible challenges.

OTs should continue to work around these barriers in rural health systems by utilizing EBP to demonstrate the need for clinical change in access disparities. Professional advocacy and continued education development is

key to reducing the gaps in rural healthcare access. Through telehealth, OTs can utilize EBP as a tool in understanding the diverse health needs of rural regions while identifying areas for further research. Clinical change may bring about a policy change if occupational therapists continue to advocate for the unique needs of rural communities and individual clients.

Rural Healthcare Access and Healthcare Policies

Implementation of the Affordable Care Act has shed increasing light on healthcare access limitations in rural America. One positive outcome for rural health, as a direct impact of the ACA, was the allocation of funds to the National Health Service Corps (NHSC). The NHSC aims to increase primary care providers in rural communities by offering loan repayment services to providers and scholarship funds to healthcare students in exchange for working in these underserved communities (Scarborough & Shelton, 2016). This program was developed to facilitate more primary care physicians in rural areas and has the potential to make positive impacts in improving quality and increasing access. Rural communities will gain increased access to primary care services and physicians will benefit from loan repayment while simultaneously gaining a unique insight into area-specific healthcare delivery to rural communities. Utilizing this insight, primary care providers will gain adaptive knowledge of accessibility barriers for rural residents and use that knowledge to collaboratively develop further solutions.

Additionally, the ACA brought forth several opportunities for rural and underserved communities. The ACA targeted health issues and deficiencies, commonly affecting rural residents. For example, the opioid epidemic, reducing expenditures for rural hospitals/facilities, and Medicaid expansion are being specifically implemented for this population (Committee on Ways & Means, 2017). To increase overall access, insurance companies are now barred from refusing services to individuals with pre-existing conditions (Bhattacharya, 2013). This will directly affect rural health due to the high prevalence of chronic and debilitating conditions throughout rural America. Largely, these are individuals who were previously denied healthcare due to these pre-existing conditions. To further aid rural communities, the ACA allowed for an expansion of educational campaigns to reduce and prevent the occurrence of chronic disease and pilot programs that will target specific disparities within at-risk cohorts (Bhattacharya, 2013). This increasing focus on reducing health disparities within rural America is a necessary advancement in improving overall health and well-being within these underserved communities. When considering the advancements the ACA has made and may continue to make in rural healthcare delivery, any future repeal of the act could negatively influence rural population health. While the ACA is not perfect in its design, the approach to reducing healthcare disparities is innovative. Health professionals and legislatures should focus intently on healthcare delivery and access improvements in rural regions that have resulted from the ACA before considering another repeal. A repeal

without replacement would put rural communities at a further disadvantage and hinder progress in the improvement of health outcomes.

While discussing the direct influence the ACA has had on rural healthcare delivery and access it is equally as necessary to examine how the dissemination of healthcare research can create further positive outcomes through these opportunities. For research to be valid and beneficial in its utilization in improving healthcare delivery, ethical conduct standards must be upheld. Ethical norms in research are necessary to promote knowledge and truth, uphold values that are essential to team collaborative success, and hold researchers accountable to the public they serve; additionally, following ethical practice helps to build public support (Resnik, 2016). A successful research campaign to reduce access barriers in rural areas will rely heavily upon the principles of social responsibility, integrity, objectivity, and honesty. Upholding honesty and objectivity will allow researchers to avoid bias when interpreting data for this unique cohort and maintain transparent collaboration between all parties involved (Resnik, 2016). In addition, conducting research with integrity and a sense of social responsibility aligns with the mission to advance public education in rural communities through advocacy, research, and dissemination (Resnik, 2016). Research campaigns and team members should prioritize and uphold these principles to ensure that results apply to the population and area of research.

Implications on Healthcare Service Delivery

Due to the well-documented health disparities resulting from the lack of access to quality healthcare in rural America, healthcare professionals must enact community-specific interventions and advocate for legislation to dissolve healthcare access barriers to improve health outcomes through community-based participatory research. If legislatures and health professionals can begin to understand the diverse healthcare needs of rural populations in comparison with urban areas, they will be able to craft public programs and interventions targeted to each population. Implementing policy and developing research opportunities would provide unique insights into the vulnerability of rural healthcare structures (Hale, Smith, & Brock-Martin, 2015). Community-Based Participatory Research (CBPR) may be an interactive approach to reducing health disparities in rural communities. CBPR is rooted in collaboration with community partners, where community members are viewed as collaborative partners in research. Researchers and communities collaborate to improve instruments, increase participation, and interpret data; data is shared and evaluated to utilize in the development of community-specific interventions (University of Kansas Medical Center, 2018).

Locally, the Kentucky Appalachian Rural Rehabilitation Network (KARRN) exemplifies effective implementation of CBPR to improve health outcomes. The KARRN is dedicated to improving quality of

life in those suffering from neurological conditions living in Kentucky Appalachian counties (UK Healthcare, 2018). This network is comprised of the individuals impacted, their health providers, community members, advocates, educators, and neurological condition researchers whom all collaborate to maximize health for this population (UK Healthcare, 2018). Overall, CBPR provides optimal results when integrated into the structures of local health departments and community clinics while utilizing the expertise of community leaders, physicians and other allied health professionals (Schmittiel, Grumbach, & Selby, 2010).

To begin implementing this research, participating health professionals would need to build a strong knowledge base for the distinctive style of CBPR. Providers need knowledge and skills for partnership development, funding, evaluation processes, and dissemination of results (DiGirolamo, Geller, Tendulkar, Patil, & Hacker, 2012). Researchers can gain access to underserved communities for CBPR through healthcare professionals who have pre-established community ties. Once a community is selected, health professionals and community participants can be trained and engaged in the principles of CBPR in addition to the processes and procedural steps to be followed to produce valid and optimal results (D'Alonzo, 2010). A Community Advisory Board (CAB) would also need to be established, which is comprised of community organization partners, residents, and other community consultants (D'Alonzo, 2010). This board of community participants is vital to optimizing community participation, allowing them to control the decision-making process while being guided by professional expertise. Participating health professionals must initially understand the time commitment and hands-off style that the implementation and dissemination of CBPR entails. Researchers and professionals often must undergo a paradigm shift in the delivery of services while preparing themselves to put forth increased time and effort (D'Alonzo, 2010). While this process is time-consuming and requires sacrifices for all parties involved, it is an effective step to take in reducing health disparities on a community basis.

This style of research is useful in highlighting specific barriers to healthcare within individual communities whereas analyzing rural health on a larger scale may not fully address the needs of diverse regions found in rural America (Graves, Hamner, Nikles, & Wells, 2015). Community members may gain increased insight into risk factors of disease, self-management, and education on chronic illnesses through collaboration with other researchers (Ruiping, Stone, Hoffman, & Klappa, 2016). CBPR is effective in strengthening relationships and trust between providers and community members (Jagosh et al., 2012). Strengthening the relationship between rural communities and service providers may improve healthcare delivery through the increased accommodation of the population's specific needs. Through this research, academic partners can utilize the findings to

develop new perspectives on rural health and the delivery of healthcare within community organizations (Jagosh et al., 2012). Additionally, community engagement within CBPR can improve the likelihood of success when translating clinical outcomes to local policy (Ruiping, Stone, Hoffman, & Klappa, 2016). CBPR's ability to evaluate communities based on their individual health characteristics will create an avenue for health professionals to address the most pressing health inequities of varying rural populations as well as establish the foundation for educating current and future healthcare professionals on the unique health needs of rural Americans.

Consequences/Outcomes for Healthcare Service Delivery

If rural health professionals, as well as larger healthcare institutions entities, utilized a CBPR approach to understanding health disparities in rural communities, individuals affected would be provided with increasingly client-centered care. Research is a key component of increasing the likelihood of positive health outcomes in populations affected by access disparities. The results of this research hold little value to community members unless the results are disseminated and applied to structures within the community (Hartwig, Calleson, & Williams, 2006). For example, CBPR has been shown to be an effective intervention tool within smoking cessation programs (Sheikhhattari et al., 2016), has reduced blood pressure within community participants, has supported implementation of culturally-based diabetes prevention programs, and has provided reallocation of funds to address environmental factors of asthma diagnoses (Bryan et al., 2014). With the growing epidemic of injectable drugs in rural America, CBPR has demonstrated positive outcomes in identifying specific sociocultural barriers to implement harm reduction efforts and increasing the attention on the need for health and social services in these communities (Boucher et al., 2017). This research approach also advocated for the need to directly involve mothers and communities in monitoring and fostering child health development (Roshanfekar et al., 2017). CBPR has been successful in addressing health concerns affecting multiple at-risk cohorts within rural America and has the potential to further improve population health.

It is necessary to note that the use of CBPR is a lengthy process, but health disparities will only continue to grow unless specific action is taken. The participatory aspect of this research is the most essential factor in improving the delivery of clinical care (Schmittiel, Grumbach, & Selby, 2010). The collaboration between the local healthcare systems and the community members optimizes the probability that these research questions will be relevant, that sustainable interventions will be implemented, and optimizes the possibility of research findings being translated into policy and systemic action (Schmittiel, Grumbach, & Selby, 2010). In disseminating CBPR results into policy change, CBPR partners should develop ongoing relationships with policymakers, make educated recommendations for

action, and create health policies that target key issues found through research (Hartwig et al., 2006). Making policy changes and improving health outcomes through CBPR will require a form of procedural justice which ensures community partners are included in the policymaking process so that their concerns are routinely considered and addressed in policy changes (Minkler, Garcia, Rubin, & Wallerstein, 2012). New policies will directly impact the delivery of healthcare in these local health structures through laws, guidelines for practice, protocol standards, and allocation of funds.

If health professionals can successfully implement CBPR to reduce poor health outcomes and health behaviors through primary care and allied health professions, it is likely that mortality and morbidity rates of rural communities may improve. Improving public health education and awareness through this research may effectively reduce adverse health behaviors and the prevalence of chronic conditions, thereby improving quality of life. Reducing the country's overall rate of chronic conditions and comorbidities through community-specific interventions may aid in system-wide cost containment, effectively decreasing the current strain that treating chronic conditions has on national healthcare expenditures. Cost containment is vital since overall healthcare spending continues to rise, limiting growth in the United States economy and barring the use of funds to be allocated to improve national health outcomes (Shi & Singh, 2019). CBPR would support researchers and community participants in their exploration of specific barriers within the community that members face when seeking healthcare, allowing them to center interventions and policies around breaking down these barriers. Although more research is needed strictly within rural health structures, CBPR has proven to be an integrative approach to reducing health disparities.

Conclusion

The purpose of this paper was to examine ways in which barriers in accessing healthcare in rural America impacts overall population health. The same barriers that reduce access also reduce quality in the delivery of health services. Rural American regions are diverse in their culture, geographic characteristics, and general healthcare structures. It is vital that healthcare professionals and legislatures seek to understand this diversity and the components of rurality and healthcare's impact on individual rural communities. This recognition is necessary for the implementation of community-based interventions and advocacy for reducing overwhelming disparities in healthcare delivery and access throughout rural America.

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