

Healthcare Engagement and Encounters in a Rural State: A Focus Group Study

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Abstract

Introduction: Rural populations have many barriers to quality health care including lack of access to primary care and specialty care and a greater likelihood to be underinsured or uninsured. They are also less likely to use preventive screening, or to participate in self-care and engage in their health when compared to urban residents. The purpose of this paper was to describe patients' healthcare experiences in a rural western state focusing on their healthcare expectations and engagement. **Methods:** This qualitative study was conducted using a focus group protocol to elicit rural patients' healthcare experiences. A purposeful sample of English speaking adult residents from a single county who were willing to discuss their healthcare experiences was included. Patients and community members (21 years and older) were recruited through a local hospital as well as via flyers posted throughout the community. Each audio-recorded group took about two hours. A total of 15 focus groups were conducted to obtain sufficient text for theoretical saturation and thematic analysis. Each group had a range of 3-8 participants. A \$25 visa gift card and lunch were provided for each participant as an incentive. **Results:** 'Encounters with Healthcare Professionals' and 'Engagement in Health' were the two dominant dimensions with two themes each. Themes centered around what characterized the best or worst encounters. Trust and Communication - both were based on time spent with the provider and establishment of rapport with the providers. The best encounters were those with health care providers or pharmacists who had sufficient time, adequately explained a diagnosis and new medications, did not dismiss patient concerns, and treated individuals with respect. Typical responses describing the worst encounters included examples of misdiagnosis, dismissing patient's symptoms, healthcare professionals whose attention was not focused on the patient, pushing too many medications, rushed encounters, and providers with poor bedside manner. 'Engagement in Health' dimension included the theme of Self-management Process such as taking things one day at a time, taking medication daily, and good stress management. The second theme was Barriers to Engagement and included issues regarding inclement weather, lack of sidewalks, stress, lack of time and the financial constraints for eating healthy, going to a gym, and/or problems with payer source. Participants also described a number of technological tools they utilized to engage with their healthcare including appointment reminders, health-based websites, symptom trackers, online portal systems for health care records, and online bill pay. Many used apps on smart phones to track calories and exercise as well as online community groups to encourage fitness. **Conclusions:** The results from this study highlighted some of the gaps in healthcare for rural areas. A large number of participants indicated a lack of trust of their providers and only a few had any communicative interaction with their pharmacist. Future studies could evaluate training designed to teach healthcare providers and pharmacists how to engage patients in their own care. Use of technology by healthcare providers might be another way to improve healthcare engagement.

Keywords: focus groups, healthcare engagement, provider expectations, patient experience, rural state, self-management, technology

Introduction

Over half of the individuals in the United States (US) suffer from chronic diseases, which places an economic burden on the US each year.¹ Rural populations suffer more from decompensated chronic diseases such as diabetes, asthma, hypertension, cardiovascular disease, and obesity than urban populations.²⁻⁷ People in rural areas experience more barriers to quality health care including lack of access to primary care, specialty care, lower socioeconomics, and a greater likelihood

of being underinsured or uninsured. Rural residents are also less likely to use preventive screening, and less likely to participate in self-care and engage in their health, leading to nonadherence to medication.^{2-4,8,9} In addition, patients admitted to rural hospitals with diseases, such as congestive heart failure, are more likely to be readmitted to the hospital than patients in urban areas.^{10,11}

Studies have shown that rural areas have their own cultural patterns, which can influence their health care attitudes and health outcomes.¹¹⁻¹⁴ A series of patient interviews conducted in Australia and western states in the US showed that people were self-reliant out of necessity due to lack of access to health care or because of poor provider-patient relationships. Patients appeared to be slower in accepting a diagnosis and beginning treatment for chronic diseases, relying instead on the rural cultural beliefs and attitudes of being strong and tough. They viewed going to the doctor as a necessity for illness, but not for wellness, and were less likely to receive preventive care

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or screening tests than people living in urban areas.^{12,13} By gaining a better understanding of rural cultural patterns of health and health care through in-depth patient interviews, practitioners can develop patient-centered techniques to improve the health of rural communities.

One of the biggest barriers for persons living in rural areas is the lack of access to health care providers, particularly specialists.^{11,15} Residents of rural areas often wait for long periods to see specialists or primary care providers resulting in more emergency services due to a decline in their condition.^{16,17} As a result, an alternative solution is needed for rural and remote areas. A collaborative care model with a case manager has shown to be very effective for improving patient adherence to medication and management of chronic conditions, as well as bridging gaps between doctor visits.¹⁸ However, limited human and financial resources limit this option for many rural practices. Areas with health provider shortage could potentially utilize pharmacists for health care and medication consultations. In addition, community pharmacists are well suited to engage with their patients and the purpose of studies like this is to explore and eventually connect resources to social and community issues- the essence of community engagement.¹⁹

The objective of this study was to explore and describe patients' healthcare experiences in a rural state, with specific focus on expectations, engagement, and interaction with their healthcare professionals.

Methods

This qualitative study was conducted with individuals living in the mountain west state of Wyoming. The researchers sought to explore the healthcare experiences of the residents of a single county using focus groups. A convenience sample (N=61) of English speaking adults aged 21 or older who utilized services from the local, community hospital (which houses a few medical offices) were recruited by clinic staff. Other participants self-selected from flyers which were posted around the community. Most respondents were recruited from the community rather than from the clinic.

The researchers collected qualitative data from patients living in a community in a rural state about their experiences with healthcare related visits. Prior to data collection, the researchers' purpose was to explore potential cultural attitudes regarding healthcare visits, self-care behavior, and perceived barriers to patient engagement. The researchers also sought to explore participants' use of technology and whether it aided them with disease management. Following the collection of data from 15 focus groups, the researchers used an exploratory, inductive lens for data analysis. Phenomenology emerged as the most fitting approach during data analysis because the results allowed for a deeper understanding of the lived experiences of participants.²⁰ The purpose of

phenomenological research, therefore, is not to determine contributory relationships or causality, but to create a comprehensive representation or interpretation of the participants' experiences.²¹

Fifteen focus group sessions were conducted. Each focus group had between three and eight participants with a moderator and an assistant moderator. Each session was audio recorded and lasted approximately two hours. A \$25 visa gift card and lunch were provided for each participant. The number of focus groups and members per focus group were deemed sufficient to obtain theoretical saturation (saturation indicates that data was collected till no new themes or ideas emerged).²² Details about patient-centric issues were gleaned from the participants using a focus group protocol based on the existing literature, to guide the focus group discussions.^{4,7,18,23} The focus group sessions were held in a neutral location - either at the University or the hospital conference room. Demographic information was also collected from each participant.

Analysis of the unabridged transcripts from each focus group was completed. Field notes were used to provide context and supplement or clarify the information on the transcripts. NVIVO 10™ software was used to code and analyze the transcript text. Two of the study authors coded the raw data, and all coding disagreements were reconciled to 100% agreement after in-person discussions. Another qualitative expert helped maintain trustworthiness by reviewing themes and cross checking with transcripts. The University Institutional Review Board approved this study protocol and signed informed consents were obtained prior to each focus group.

Results

The demographic information of the focus group participants (N=61) is presented in **Table 1**. The participant pool was comprised of mostly white, non-Hispanic females. Over half were 45 years or older and had a 4 year degree or higher. Half of the respondents stated that they were engaged in their healthcare, and similarly, nearly half responded "yes" to self-managing their care. Only 4 out of 61 respondents reported that they were non-adherent to their medications. A list of the technology used by this study's respondents and time spent by the healthcare provider during each visit is presented in **Figure 1** and **Figure 2** respectively.

Figure 1 represents the responses from the focus groups regarding technology use obtained from the transcripts. Not everyone commented on a specific technology that they used. On average, participants used two different types of technology to research their health condition. The most reported technologies included: Google and other search engines, medical websites such as WebMD®, electronic health records such as patient portals, and appointment reminders. Most of the participants used technology as a way of enhancing their

preventative care and wellness rather than for researching medical problems.

Time spent with the primary care provider was also obtained directly from the verbatim transcripts and is presented in Figure 2. The duration of each visit ranged from 10 to 75 minutes. Only primary care visits for both acute and established care were recorded. No urgent care or emergency room visit times were included. Patients reported that nurse practitioners spend more time with them for both acute and established visits as opposed to physicians.

Qualitative analysis revealed 2 dimensions, *Encounters with Healthcare Professionals* and *Engagement in Health*, with 2 themes each. The dimensions were named such since they were broader in nature than the typical themes that newly emerge from a qualitative exploration. The following sections define and illustrate these two dimensions and their respective themes. Additional text exemplars from participants for each theme, along with the corresponding dimension, are presented in **Table 2**.

Encounters with Healthcare Professionals

The *Encounters with Healthcare Professionals* dimension is defined as experiences, in which a participant engaged with a medical practitioner, had a procedure completed, or talked to their pharmacist about their own or a family member's prescription medication. Participants described both their positive and negative encounters with healthcare professionals. Despite the diverse nature of the responses, they consistently centered on the two themes of *Trust* and *Communication*. Factors that influenced the participants' trust in the healthcare system included a patient trusting their healthcare provider as well as their impression that the provider trusted them. Factors that influenced their encounter as positive or negative included whether or not the provider treated the participant with respect and whether or not they deemed the provider as competent.

Trust: Factors that influenced the participants' trust in the provider during the healthcare encounter included how the provider treated the participant and the provider's competence in making an accurate diagnosis. This theme also included whether the participant felt their healthcare provider trusted them. Providers were viewed in a positive way when they appeared to trust patients in assessing whether there was truly a medical problem needing intervention. Contrarily, providers who appeared to not believe or not put stake in a patient's report of symptoms or indications of urgency were not only seen as untrustworthy, but incompetent. These notions also pertained to when participants described providers trusting their descriptions of symptoms experienced by a loved one, particularly when the loved one was a dependent. A negative illustration of this was, "I didn't really feel like the doctor was listening to me. I'm not stupid, I know my children." One

positive instance was when a participant spoke about a specific provider that met her entire family's needs, "They're great to try to work with the families and figure out what's best for everybody."

Many participants felt confident in their health care but did not elaborate on why or what made them feel confident. Likewise, those who did not trust their provider seemed to verbalize their lack of trust but were vague about why or did not give examples. Illustrations of these are, "To go find somebody that you trust.... You can go to a doctor; you can go to a lot of doctors before you run into somebody you trust... I haven't found a competent doctor that 1). I trust, and 2). I feel really knows about how to properly care for me." As well as, "I feel I have to take care of my health because I don't depend on anybody else to do it, I don't trust anybody else to do it." One general reoccurring comment was participants' concern with prescribers "pushing too many medications."

Overall, participants in this study reported higher satisfaction when seeing a nurse practitioner (NP) or physician's assistant (PA) as opposed to a physician. "I've been seeing a PA for about the last 15 years... They tend to spend more time with you than the doctor," illustrated this point as well as the following one; "I see my NP by choice, not because there's [no] doctors around, but because I like seeing her." A large number of participants mentioned avoiding doctor visits unless it was absolutely necessary. Notably, the decision to see a physician's assistant or nurse practitioner instead of a physician was often cited as financially motivated as well.

Communication: Factors that influenced the participants' perception of communication during the encounter included the adequacy of explanation of new diagnoses or interventions, as well as if they felt their provider listened to them. For example, one participant stated "I'm a smart person, and when I'm researching for weeks on end, I'm probably gonna be finding some legitimate things that you can maybe listen to me about." Whether a provider listened to them was frequently judged by how rushed a visit was, as well as the providers' bedside manner. Interestingly, communication appeared to influence a participant's judgement of competence, more so than the providers' expertise or specialty area. For example, one participant spoke about a provider who appeared to "truly listen" to the symptoms she described and proceeded to correctly diagnose a thyroid problem, despite this not being the provider's area of specialty. The participant attributed the accurate diagnosis to her provider's willingness to listen to her complaints. On the contrary, a patient whose cardiology group missed a mitral valve prolapse diagnosis for 6 months said the following about her delayed diagnosis, "for a whole cardiology practice to miss that, none of them listened carefully enough to my heart to find out what was going on." Another quote that aptly exemplifies this issue was by a patient's partner who said, "I didn't feel like his doctor truly listened to me, there were

signs that his heart was failing and it was becoming more serious, and he tried to blame it on sleep apnea instead of listening to what I was saying.”

Notably, the amount of time spent with the participant, and conversely the degree to which the provider rushed the encounter, was the major time-related communication barrier associated with the encounters. Additionally, common communication problems were: jumping into procedures that were not needed, not listening to people, providers who conveyed condescending or arrogant attitudes, or being distracted and appearing to not give their full attention to participants. Positive qualities of providers were: someone that listens well, is empathetic, is good with kids, is an active listener, has good bedside manner, and makes good eye contact. “They seemed to have more time to actually have a conversation with you instead of just [popping] in and out in five minutes.” An illustrative quote with specific details was, “she goes through everything. Do you want this; you don't need it, and so forth and so on. She checks my heartbeat, she checks my lungs, and she checks my ears. She just gave me a complete physical. She talks and she listens, she just dedicates an hour.”

Finally, under this communication theme, it was noted that a few participants commented on how helpful their pharmacists were at recommending vitamins, supplements and wellness products. A few participants commented how valuable pharmacists were for providing drug information. However, most of the patients did not comment on utilizing their pharmacist when they had a potential drug related problem.

Engagement in Health

The *Engagement in Health* dimension is defined as experiences of the participants regarding the means by which they took charge of their own health. Additionally, this dimension included anything that prevented individuals from engaging in their healthcare. This often entailed feelings of inequity with their providers or that their opinions were devalued. Thus, participants' descriptions of ‘Engagement in Health’ centered on two themes: *Self-management Process*, and *Barriers to Engagement*. Both of these themes are described in greater detail below with text examples.

Self-Management Process: This theme referred to the range of actions that participants took regarding their own healthcare. When describing self-management processes, participants discussed medication-taking behavior (including prescriptions, herbals, over-the-counter medications, and vitamins), as well as self-care behavior such as diet, exercise, and obtaining/monitoring lab work. Participants also described stress management techniques, the need to be proactive in managing specific conditions, and the need to “take things one day at time.” Getting testing done, reading and staying informed about a person's condition(s), staying conscious of diet, and exercising were ways that participants stated they

took control of their healthcare. An illustrative quote of these provisions was, “I take vitamins, everything. Try to keep [myself] going and try to keep healthy. I drink water. I don't really care for dieting. All I want to do is be healthy” and “I am very conscientious about what I eat. I'm very conscious about taking the drugs. Nobody's perfect, however. I try to get enough exercise. I'm a little sloppy on that one. I subscribe to several health newsletters.”

Participants described several technology-based tools, other than newsletters, to engage in their healthcare, including appointment reminders, websites, such as Mayo Clinic, WebMD®, and symptom trackers for additional information, online portal systems for health care records, and online bill pay. Many used applications (apps) on smart phones to look at calories and to track exercise, as well as online support groups to encourage fitness and self-manage their health. Some of the older participants still were hesitant about using technology and preferred to talk with an “actual person” regarding any health-related issues.

Barriers to Engagement: This theme refers to several issues that were cited by participants that prevented them from being fully involved or a true participant in their own health. These barriers appeared to fall into two general categories; internal barriers and external barriers. Internal barriers included those that the participant cited as their responsibility, whereas external barriers were those over which the participants felt they did not have control. Examples of internal barriers were aspects that participants viewed as preventing them from eating right, watching their weight, managing stress, drinking enough water, staying active, and/or taking health supplements. Illustrative quotes of internal barriers were: “I eat too much and too much fat, but I also eat a lot of fruit and vegetables. Don't get enough exercise,” “sugar is my downfall,” “and comfort foods. A lot of times, I'll eat something that I like and I'm no longer hungry, and then I'll eat some more of it because it tastes good,” and “I'm a smoker, which is of course the biggest problem with my health. I have not tried to quit smoking in a decade. Yeah, I have to kick it eventually or I'm going to die before I'm 65, and I don't want to.” Additionally, the inability to control holiday eating was cited.

External barriers were those, such as weather conditions and long travel times in this rural state, that limited exercise opportunities, as well as lack of healthy eating establishments. “There [is] no good place to eat. There's nothing to do, I can't even walk. There [are no] sidewalks in this town.” A unique external barrier mentioned was an individual who was unable to take time off work to go to the doctor for fear of being fired. Other common external barriers were financial constraints for eating healthy or going to a gym, as well as insufficient time. Negative feelings' regarding interaction with their providers was another commonly cited barrier. “It was kind of a shock to me of how little there was [of] healthcare providers, and the

lack of their bedside manner really ticked me off..." Interestingly, many individuals who gave examples of those who were engaged (either themselves or other individuals they knew), indicated that this was frequently negatively reinforced. One participant exemplified this when explaining that she brought literature, which she felt pertained to her condition to an appointment. She stated, "I highlighted it. I just wanted them to read the paragraph and give me his opinion on it. He hands it back to me and says, 'This is not about you.' Three times he stuffed it back in my face."

Finally, participants also expressed frustration over insurance costs, lack of insurance coverage, and cost of medications. For example, parents whose daughter had Crohn's disease, described going to multiple hospitals out of state and trying many medications that did not work. The parents expressed frustration and stress over lack of access to care in the state, indicating that they incurred additional expenses having to travel to receive healthcare. Conversely, some participants appreciated it when they were given free medication samples or discount cards to off-set healthcare costs.

Discussion

This study sought to explore patients' healthcare experiences in a rural state, with specific focus on expectations, engagement, and interactions during their healthcare visits. The participants for this study were recruited from a single county in the least populated state in the Union. Communities in the state are separated by vast geographic distances that often contain mountainous terrain. Twenty one of the 24 counties in the state contain a designated primary care Health Provider Shortage Area. Sixteen of the 27 (59%) short term acute care community hospitals in the state are critical access hospitals.^{24,25} Although the participants were recruited from a predominantly rural state, the county from which they were recruited had a population of 38,256 in 2016.²⁶ The county has one hospital (an 88-bed facility) and the nearest level-1 trauma center is located 150 miles away.²⁵

All the themes and issues identified by the participants were not particularly unique to living in a rural state. They described how patient-provider trust and communication issues shaped their perceptions of healthcare encounters. Barriers to engagement and characteristics of the self-management process played a role in determining the level of engagement in their healthcare.

Encounters with Healthcare Professionals – Trust and Communication

Specifically, the analysis revealed that participants who expressed a lack of trust in their provider tended to be the ones to not follow provider advice, and instead do more research on their condition and its management. In a way, those patients improved self-care behavior out of necessity. Most of the groups emphasized that doctors were not asking about diet and

exercise or weight during wellness visits at all. Providers were more concerned about already diagnosed chronic health conditions, rather than preventive care for most patients. Some of the focus group participants stated they had side effects from medication and that they had to figure out the side effect was from the medication on their own. These individuals felt that their providers or pharmacists were not spending enough time on the education of medication side effects. Lack of trust in and dissatisfaction with communication with their healthcare providers has larger implications in Healthcare Provider Shortage Areas because provider options are limited. Based on relatively positive comments regarding pharmacist helpfulness, communication with pharmacists could potentially be another option for better medication management and identifying treatment related issues. Tele-health technology could also provide options if patients could access and use the technology.

Engagement in Health - Self-Management Process and Barriers to Engagement

When talking about engagement and self-management, many participants who had children reported taking their children to doctor's visits regularly, but did not go themselves. Most respondents described examples of exercise and diet as ways for healthcare engagement, but did not really understand what was meant by disease self-management. This could have been due to a lack of familiarity with the definition of self-care. Many participants reported using technology in their *self-management process*, including tools such as patient portals and appointments reminders. It was interesting to note that all participants, regardless of how they assessed their own engagement in their healthcare, appeared to believe that their engagement was not valued by providers.

While the participants in this study had not experienced telehealth or tele pharmacy, most were open to the idea except a few of the older participants. In general telehealth has the potential to address many healthcare barriers and has been successful in other rural states, such as Montana, West Virginia, and Pennsylvania, for improving medication adherence, self-care behaviors, and disease state outcomes for diabetes and hypertension.^{2,3,27} The telepharmacy program in Maine allowed follow up of VA residents after their hospital discharge and medications and discharge instructions were reviewed over the phone resulting in a 70% decrease in the need for an acute care visit in the first 30 days after hospital discharge.²⁸ A lack of providers in Wyoming was a substantial problem cited by the study participants, and programs such Telehealth/Telepharmacy may be a way to address this lack of access to care.

Limitations

This qualitative study might apply to other rural as well as some urban areas, but generalizability is not the purpose of such a study. It proved difficult to recruit patients from the local hospital, and easier to do so directly through advertisements to

the community. It is possible that patients who volunteered for this study might have had more issues with their healthcare than those who did not participate. In addition, any differences between community and hospital recruited groups was not examined. However, for most respondents, reflections on both their positive and negative healthcare experiences surfaced. When asked questions regarding their engagement with healthcare, most needed clarification on the term, which was both a limitation as well as an interesting finding. Most respondents were female, not allowing us to explore if male respondents would have had substantially different experiences and expectations in this rural state. Similarly, a majority of white, older and educated individuals did not allow for demographic comparisons.

Conclusions

The results from this study emphasized some of the gaps in healthcare for a rural population. On average, large numbers of participants indicated a lack of trust between themselves and their providers. Additionally, most respondents reported that they did not interact with their pharmacist, yet those who did had mainly positive encounters. Hence, pharmacists could be an important resource for patients in rural areas, since they are potentially more accessible than primary care providers. Recent literature shows that pharmacists play an increasing role in helping patients self-manage specific diseases.^{7,28-30 31}

In remote areas, technology such as internet support groups, telehealth communication, and teaching models on disease states have been effective tools for improving health literacy, medication adherence, patient engagement and patient empowerment, especially for women.^{7,12,23} Our study showed use of internet by respondents for preventative care and some future interest in using telehealth solutions for healthcare. For many rural areas, telehealth has been a great bridging opportunity to improve access and patient care. West Virginia conducted a pilot study using telehealth to help improve diabetic management which lead to better blood glucose control, lower A1C levels, and improved blood pressure control.³ Montana also used telehealth to help improve diabetic management.² Telepharmacy specifically has helped to decrease the need for acute care visits after hospital discharge.²⁸

The potential benefits of using telehealth have been shown to decrease costs both to patients as well as to the economy. Yet, this technology has not been completely adopted in the US. A study in 2009 where researchers looked at telehealth use amongst providers found the total number of telehealth claims for the year was 38,000. This equates to less than one telehealth visit for every 300 rural Medicare claims made that year.³²

Overall, this study aimed to generate health care delivery information relevant to a predominantly rural state. This study

highlighted several important areas where further research may be directed. For example, one of the common themes included higher patient satisfaction with nurse practitioners and physician's assistants over physicians. This finding is correlated with a systematic review conducted in 2005 that showed, overall, patients had higher satisfaction with nurses over physicians, with no difference in quality of medical care received or patient outcomes. Overall, nurses gave patients more information regarding their condition and tended to remember individual patients more often than physicians.³³ This could be a valuable niche for nurse practitioners, especially in rural and remote areas. With the difficulty of attracting providers to rural areas, some clinicians are using outdated guidelines for treatment models, which contribute to mistrust between patients and providers.³⁴

A future research goal could also be to conduct focus groups with healthcare providers and get their perspective on the overall health of these rural communities. Expectantly, the results from such a study could be compared with this study, and the gaps in communication could be addressed. Insights from focus groups could also be used in future studies to help develop and test a program to train providers to construct specific messaging strategies to improve patient engagement and chronic disease self-management, based on the patients' perceptions. An additional goal could be to increase public awareness of the benefits pharmacists can provide to rural and underserved communities for improving communication, drug monitoring and overall wellness.³⁵ Lastly, Telehealth appears to be a valuable tool for improving healthcare in rural areas by addressing healthcare disparities such as lack of access and financial barriers associated with traveling for receiving healthcare.

Acknowledgements: This study was funded by the University of Wyoming College of Health Sciences (UW CHS) Faculty Seed Grant awarded to first author Dr. Singh in April 2015. Interim results of this study have been presented at the Health Literacy Research Conference (HARC) in November 2015.

Conflict of Interest: "We declare no conflicts of interest or financial interests that the authors or members of their immediate families have in any product or service discussed in the manuscript, including grants (pending or received), employment, gifts, stock holdings or options, honoraria, consultancies, expert testimony, patents and royalties".

Treatment of Human Subjects: IRB review/approval required and obtained.

References

1. Jerant AF, von Friederichs-Fitzwater MM, Moore M. Patients' perceived barriers to active self-management of chronic conditions. *Patient Educ Couns*. 2005;57(3):300-307.
2. Ciemins E, Coon P, Peck R, Holloway B, Min SJ. Using telehealth to provide diabetes care to patients in rural Montana: findings from the promoting realistic individual self-management program. *Telemed J E Health*. 2011;17(8):596-602.
3. Mallow JA, Theeke LA, Long DM, Whetsel T, Theeke E, Mallow BK. Study protocol: mobile improvement of self-management ability through rural technology (ml SMART). *Springerplus*. 2015;4:423.
4. Pieh-Holder KL, Callahan C, Young P. Qualitative needs assessment: healthcare experiences of underserved populations in Montgomery County, Virginia, USA. *Rural Remote Health*. 2012;12:1816.
5. Li G, Hu H, Dong Z, Xie J, Zhou Y. Urban and Suburban Differences in Hypertension Trends and Self-Care: Three Population-Based Cross-Sectional Studies from 2005-2011. *PLOS ONE*. 2015;10(2):1-11.
6. Cummings DM, Wu JR, Cene C, et al. Perceived Social Standing, Medication Nonadherence, and Systolic Blood Pressure in the Rural South. *J Rural Health*. 2016;32(2):156-163.
7. Young HN, Havican SN, Griesbach S, Thorpe JM, Chewing BA, Sorkness CA. Patient and pharmacist telephonic encounters (PARTE) in an underserved rural patient population with asthma: results of a pilot study. *Telemed J E Health*. 2012;18(6):427-433.
8. Wyoming Public Health Data - Trust for America's Health. 2016; <http://healthyamericans.org/states/?stateid=WY>. Accessed April, 2017.
9. Key Health Data about Wyoming. 2016; Wyoming Public Health Statistics. Available at. Accessed August , 2016.
10. Young L, Barnason S, Do V. Promoting self-management through adherence among heart failure patients discharged from rural hospitals: a study protocol. *F1000Res*. 2014;3:317.
11. Nesbitt T, Doctorvaladan S, Southard JA, et al. Correlates of quality of life in rural patients with heart failure. *Circ Heart Fail*. 2014;7(6):882-887.
12. Weinert C, Cudney S, Kinion E. Development of My Health Companion to enhance self-care management of chronic health conditions in rural dwellers. *Public Health Nurs*. 2010;27(3):263-269.
13. Page-Carruth A, Windsor C, Clark M. Rural self-reliance: the impact on health experiences of people living with type II diabetes in rural Queensland, Australia. *Int J Qual Stud Health Well-being*. 2014;9:24182.
14. Kamran A, Sadeghieh Ahari S, Biria M, Malepour A, Heydari H. Determinants of Patient's Adherence to Hypertension Medications: Application of Health Belief Model Among Rural Patients. *Ann Med Health Sci Res*. 2014;4(6):922-927.
15. Kariisa M, Seiber E. Distribution of cardiovascular disease and associated risk factors by county type and health insurance status: results from the 2008 Ohio Family Health Survey. *Public Health Rep*. 2015;130(1):87-95.
16. Parks A, Hoegh A, Kuehl D. Rural Ambulatory Access for Semi-Urgent Care and the Relationship of Distance to an Emergency Department. *West J Emerg Med*. 2015;16(4):594-599.
17. Palmer E, Leblanc-Duchin D, Murray J, Atkinson P. Emergency department use: is frequent use associated with a lack of primary care provider? *Can Fam Physician*. 2014;60(4):e223-229.
18. Dejesus RS, Vickers KS, Howell LA, Stroebel RJ. Qualities of care managers in chronic disease management: patients and providers' expectations. *Prim Care Diabetes*. 2012;6(3):235-239.
19. Sorensen T, Davis R, Balidemaj F. Sharing Community Engagement in Pharmacy- An Invitation. *INNOVATIONS in Pharmacy*. 2011;2(1):Article 24.
20. Creswell J. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. 3rd ed. Los Angeles, CA: Sage Publications; 2013.
21. Moustakas C. *Phenomenological Research Methods*. Thousand Oaks California: Sage Publications; 1994.
22. Krueger R, Casey M. *Focus Groups: A Practical Guide for Applied Research*. 3rd Edition. London: Sage; 2000.
23. Cudney S, Weinert C, Kinion E. Forging partnerships between rural women with chronic conditions and their health care providers. *J Holist Nurs*. 2011;29(1):53-60.
24. Rural Health Information Hub Selected Rural Health Care Facilities in Wyoming. 2016; <http://www.ruralhealthinfo.org/states/images/wyoming-rural-health-facilities>. Accessed September, 2017.
25. American Hospital Directory Individual Hospital Statistics for Wyoming. 2016; http://www.ahd.com/states/hospital_wy.html. Accessed September, 2017.
26. Population Data Products USDA Wyoming. 2017; <http://data.ers.usda.gov/reports.aspx?ID=17827>. Accessed September, 2017.
27. Siminerio L, Ruppert K, Huber K, Toledo FG. Telemedicine for Reach, Education, Access, and Treatment (TREAT): linking telemedicine with diabetes self-management education to improve care in rural communities. *Diabetes Educ*. 2014;40(6):797-805.

28. Rebello KE, Gosian J, Salow M, Sweeney P, Rudolph JL, Driver JA. The Rural PILL Program: A Postdischarge Telepharmacy Intervention for Rural Veterans. *J Rural Health*. 2016.
29. Tucker R, Stewart D. The role of community pharmacists in supporting self-management in patients with psoriasis. *Int J Pharm Pract*. 2017;25(2):140-146.
30. Bajorek B, Lemay K, Magin P, Roberts C, Krass I, Armour C. Patients' Attitudes and Approaches to the Self-Management of Hypertension: Perspectives from an Australian Qualitative Study in Community Pharmacy. *High Blood Press Cardiovasc Prev*. 2017.
31. Steed L, Sohanpal R, James WY, et al. Equipping community pharmacy workers as agents for health behaviour change: developing and testing a theory-based smoking cessation intervention. *BMJ Open*. 2017;7(8):e015637.
32. Gilman M, Stensland J. Telehealth and Medicare: payment policy, current use, and prospects for growth. *Medicare Medicaid Res Rev*. 2013;3(4).
33. Martínez-González NA, Djalali S, Tandjung R, et al. Substitution of physicians by nurses in primary care: a systematic review and meta-analysis. *BMC Health Serv Res*. 2014;14:214.
34. Wagner EH, Austin BT, Von Korff M. Improving outcomes in chronic illness. *Manag Care Q*. 1996;4(2):12-25.
35. Hagemeyer N, Blevins S, Hagen K, Sorah E, Shah R, Ferris K. Integration of Rural Community Pharmacies into a Rural Family Medicine Practice-Based Research Network: A Descriptive Analysis. *INNOVATIONS in Pharmacy*. 2015;6(3):Article 216.

**Table1: Demographic characteristics of focus group participants
(Total N = 61)**

Age	Number (Percentage)
0-17 years	0 (0)
18-34 years	18 (30)
35-49 years	17 (28)
50-74 years	24 (39)
75 and older	2 (3)
Gender	Number / (Percentage)
Male	22 (36)
Female	38 (62)
Other	1 (2)
Ethnicity (N=56)	Number / (Percentage)
Hispanic	2 (3.5)
Non-Hispanic	52 (93)
Unknown	2 (3.5)
Race N=59	Number / (Percentage)
White	55 (93)
African-American	3 (5)
American Indian	0 (0)
Asian	0 (0)
Pacific Islander	0 (0)
Other	1 (2)
Education	Number / (Percentage)
8th Grade or Lower	0 (0)
Some High School	0 (0)
High School Diploma/GED	17 (28)
Associate's Degree	6 (10)
Bachelor's Degree	17 (28)
Graduate Degree	21 (34)
Marital Status	Number / (Percentage)
Married	34 (56)
Single	18 (30)
Divorced	7 (11)
Widowed	2 (3)

Figure 1: Technology or tools used by respondents

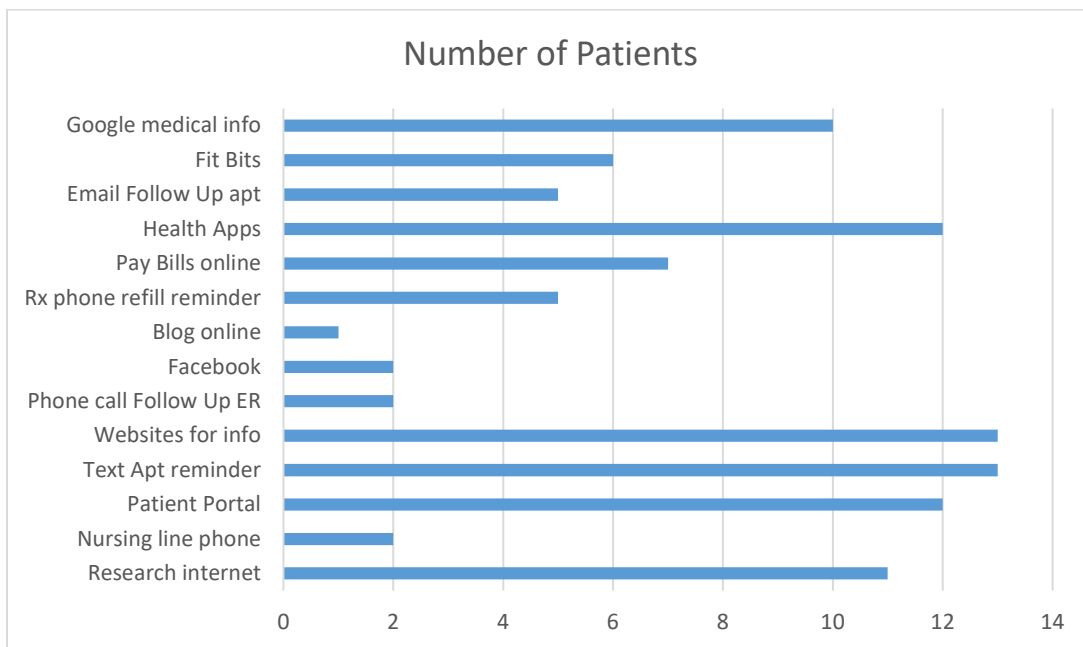


Figure 2: Time in minutes per primary care visit

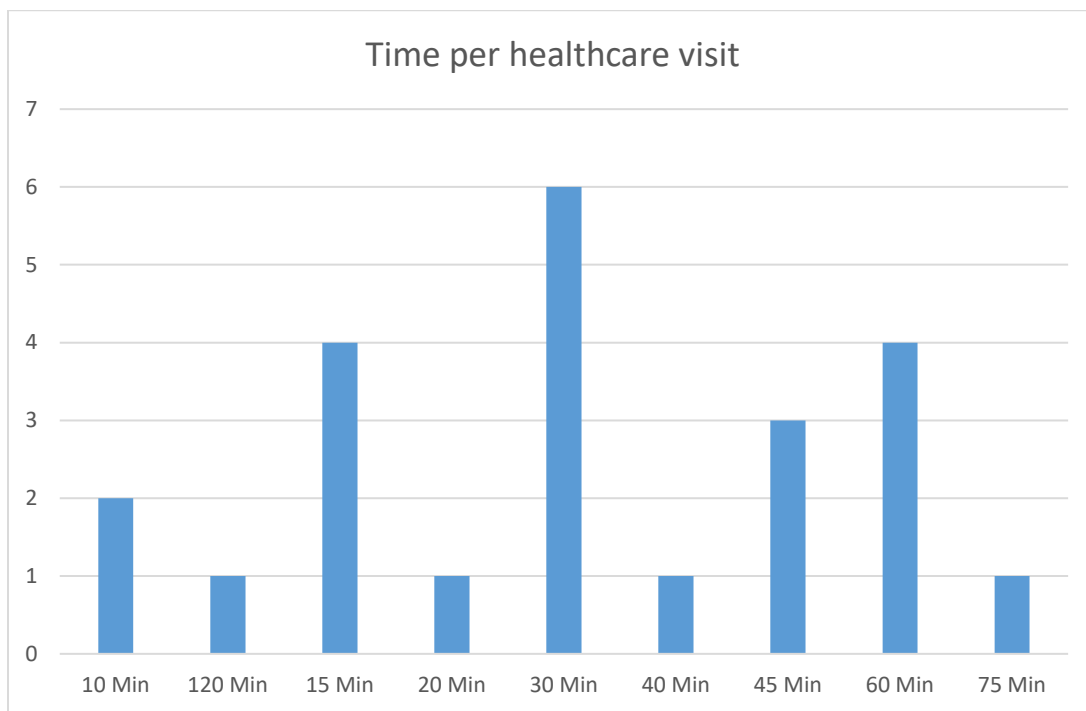


Table 2: Text Exemplars of Dimensions and Themes

Dimension	Theme	Text Examples
Encounters with Healthcare Professionals	Trust	<p><i>"... I went with the Dr. M, and he was very good. He was the kind of doctor I grew up with. You could talk to him about anything, no matter how goofy it may have soundedthis doctor you could talk to. He'd listen to me, and if he said, "You know, it's nothing J_." I just had the peace of mind. I needed a doctor like that."</i></p> <p><i>"All the nurses I've ever had around me, or when my wife was sick, without them I don't think ... Well, I'm a strong believer in the Lord, but without them, without the nurses, the doctors did their jobs and they were all phenomenal, but without the nurses I don't think I'd be here. The only complaint I've got really, was not with any person or procedure or anything, it was the one cystoscopy I had. Never want another one. Other than that, the nurses at ___ now are phenomenal. They removed the stitches out of my fingers; we won't get into that stupidity. The nursing care is vital. I can't say I've had a bad nurse."</i></p> <p><i>"To go find somebody that you trust.... You can go to a doctor; you can go to a lot of doctors before you run into somebody you trust. .. I haven't found a competent doctor that one, I trust, two, I feel really knows about how to properly care for me."</i></p>
	Communication	<p><i>"...nicest man I've ever met [provider], he sat me up, and gives you things, and his care was kind and gentle. I was pretty impressed with the people, the nursing care, the CNA's."</i></p> <p><i>"I have (taken information) a couple of times. I took two articles ... It was something.... with women, to Dr. L. He said, "Where did you get these?" I said, "I subscribe," and he said, handed them back to me without even looking at them, "I think you should cancel your subscription."</i></p> <p><i>"I highlighted it, I just wanted him to read the paragraph and give me his opinion on it. He hands it back to me and says 'This is not about you. Three times he stuffed it back in my face.'"</i></p>
Engagement in Health	Self-management Process	<p><i>"I haven't had a physical in probably two years. Haven't had blood work in three. Now am I healthy? I think so, but you know, again, we had a situation where we had a neighbor who was healthy as an ox, and he's not here."</i></p> <p><i>"And then you have to see some other doctor or whatever. And you can't build a relationship ... But I got the realization that I'm going to have to start taking control of my own healthcare."</i></p> <p><i>[on whether engaged] "That's a difficult question to answer. I try to take care of myself. I don't do a great job of it. I am certainly aware of it."</i></p> <p><i>"I exercise three or four times a week. I try to eat healthy, but there are ... The holidays, I eat more sweets than I should. I eat more cookies, but I'll try to get back into not eating so many sweets after the holidays. Exercise has really become important to me over the years, especially as I've gotten older. I find that it's really critical in my taking care of myself. I didn't use to exercise, and I find that that's one thing that not only helps me physically but mentally. It gives a better mental attitude. I always feel better after exercise. Those are the two big ones for me."</i></p>

	<p>Barriers to Engagement</p>	<p><i>“There’s no good place to eat. There’s nothing to do, I can’t even walk. There’s a not even sidewalk in this town.”</i></p> <p><i>“Everything had to be done outside the hospital. Until she’s dehydrated and it’s an emergency.”</i></p> <p><i>“My most recent health care was, I believe, in 1998 and I went for just a general physical... I haven’t been to the doctor for a very long time. I had no health insurance until recently.”</i></p> <p><i>“My disappointment is that so many people, as you all know, leave their practice here and do something different. Secondly, the two times that I’ve been in to emergency, for taking an X-ray, she says, “I’m just here on duty, I’m a contract person. I’m only here for ...” I don’t know, a three month thing. We do see a lot of contract people here go home, and she wanted to get back and see the grandchildren and so forth. Maybe that’s good, to have those contract people, they can be very good. But why do we not have ... Why are people not doing full time?”</i></p>
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