

# Rural provider attitudes toward the use of social media for patient engagement and retention: a brief report

## Abstract

**Background:** Rural clients and providers function with many barriers in place not necessarily barriers in urban settings. Common barriers to accessing healthcare services in rural communities include financial means to pay for services, distance to provider (transportation, the need to take time off of work), ability to communicate needs to healthcare providers, ability to utilize services without compromising privacy, and confidence in the quality of care they will receive. The use of social media in rural health services can be a tool to effectively reduce or eliminate some of these barriers for patients and providers. To determine feasibility of provider's willingness or belief social media can be used in patient services, it is important to track and identify current attitudes of providers toward the use of social media in rural settings.

**Objective:** The purpose of the study was to identify the attitudes and beliefs of healthcare providers in rural areas toward social media use as a means to improve patient engagement and retention in several domains of services.

**Methods:** The authors collected the rural provider data from a nationwide survey of healthcare providers towards the use of social media in patient services (N = 1,469). A subset of providers that identified themselves as working in rural areas was used for data analysis purposes. Data was collected electronically through survey questions disseminated through various alumni associations, professional association list serves, and university or college "email blasts". The survey solicited attitudes towards social media use in patients services across several domains. The authors analyzed the factor structure of the social media scale (including the following areas)

- i. Personal Records
- ii. Billing
- iii. Prescriptions
- iv. Support Groups
- v. Communications with family
- vi. Communication with employers
- vii. Current healthcare information updates
- viii. Healthcare policy updates
- ix. Insurance/Medicaid/Medicare information
- x. Current disease and healthcare occurrence information specific to client's personal conditions or ailments

## Introduction

Patient engagement in treatment within rural communities has been found to be difficult for a variety of factors. For example, these underserved areas display a shortage in medical and behavioral health providers which can impact patient access to health care. Also, stigma regarding the treatment of certain conditions (e.g., depression, sexually transmitted infection) also hinders patient engagement with time-sensitive treatment.<sup>1,2</sup> Research has shown that the use of telemedicine, especially in rural primary care settings, has been able to alleviate patient barriers to care and improve treatment efficiency.<sup>3,4</sup> The use of social media has also been an area of importance for patient engagement due to the increased use of technology and telemedicine

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**Results:** Overall, providers demonstrated support for the utilization of social media. Analysis of the factor structure of the survey indicated two distinct factors, one for personal, protected information and another for social networking, compliance, outreach, and information dissemination. Providers were more likely to support social media utilization in healthcare services for the second factor. Exploration of the qualitative data indicate a perceived need for an enhanced role for mental health services (including access, policy, insurance coverage, length of treatment, and appropriate referrals made by medical professionals when necessary), more population based, preventative services, and different methods of holding patients accountable for compliance. Providers demonstrated overall advocacy for the utilization of social media.

**Conclusions:** While a majority of practitioners support the use of social media in patient services (for the second factor), privacy, HIPPA, ethical, and other concerns are prevalent. The author concludes by discussing training implications, future directions for healthcare policy, and the need for regulatory bodies to invest time in developing social media policies and best practices.

**Keywords:** internet, social media, social networking, engagement, provider attitudes, new technologies, health communication, rural

in health care. For example, social media has been used to improve child maltreatment prevention and family engagement in treatment.<sup>5</sup>

Social media usage increases in urban settings due to improved internet connections whereas in rural settings, there is a negative association with computer access and use. This can be attributed to variables such as poor internet connections (e.g., dial-up). Because of this, this can limit the usage of social media platforms by rural residents, despite that added health benefits and improved engagement and retention in urban and suburban communities. Despite the proposed setbacks to the use of information technology, rural residents may be open to its use to gain access to necessary health services.<sup>6</sup>

As research evolves to demonstrate the usefulness of social media platforms in health care, it is not only of importance to assess patient attitudes towards usage, but provider attitudes as well. For example, Reed et al.,<sup>7</sup> compared the acceptability of telehealth services to the acceptability of social media in rural communities and concluded that as technology becomes more common in rural health care, social media use may increase as well as positive attitudes towards the use of technology. Jameson et al.,<sup>8</sup> found that mental health providers welcomed the use of tele-mental health services in clinics serving veterans. Nkosi, Asah, and Pillay<sup>9</sup> examined attitudes towards technology among nursing students and found that students expressed positive attitudes towards the use of technology. The authors posit that positive attitudes in trainees may continue into post-graduate practice with continued exposure. Sukums et al.,<sup>10</sup> also found that although rural health care providers had limited exposure to technology, providers welcome continued training and education to improve their computer skills.

The use of social media as a method of communication has increased dramatically in the United States in the 21st century. With increased pressure on rural healthcare providers for population based, patient centered services, low-cost and high-reach methods of communication are a useful way to enhance shared decision making and health literacy in healthcare services. Although there is research on provider attitudes toward use of computer technology, little is known regarding rural health provider attitudes toward social media use for healthcare services. In addition, little is known regarding rural provider attitudes toward healthcare reform, and how these attitudes influence patient services in healthcare settings. Thus, the research question for this study is this: What are rural healthcare provider attitudes toward the use of social media for patient engagement and retention?

## Methods

This mixed methods, exploratory study ascertained provider attitudes (from a multidisciplinary sample, including nurses, medical doctors, psychologists, social workers, counselors, paraprofessionals, among others) toward the use of social media in the current healthcare

system. The authors also assessed current attitudes towards the healthcare system, including healthcare reform and ethical and professional risks related to the use of social media in healthcare related services. Data was collected electronically through open and closed ended survey questions disseminated through various alumni associations, professional association list serves, and university or college “email blasts”. Table 1 displays the demographic characteristics of the participants of the study.

## Results

Participants from rural areas displayed an overall negative attitude toward healthcare reform and the current healthcare system. Exploration of the qualitative data indicate a perceived need for an enhanced role for mental health services (including access, policy, insurance coverage, length of treatment, and appropriate referrals made by medical professionals when necessary), more population based, preventative services, and different methods of holding patients accountable for compliance. Providers demonstrated overall advocacy for the utilization of social media. Table 2 contains the qualitative data from the study participants.

The researcher attempted to determine the underlying factor structure of the items used for each of the healthcare reform and social media scales. As several of the items from each intended scale were at least moderately correlated with items on the other scale, an oblique rotation was employed. The analysis utilized a Principal Axis Factor Rotation with a matrix rotation to generate oblique factors. The sample was split into random halves to utilize a split sample validation as proposed by Osborne and Fitzpatrick.<sup>11</sup> The validation compares the squared difference between each sample’s factor loadings. Squared difference above 0.04 is considered indicative of a volatile factor structure for purposes of this study. Each participant was randomly assigned to the 0 or 1 grouping. The researcher utilized all seventeen Likert scale items for factor extraction (Table 3). An examination of the Kaiser-Meyer Olin measure of sampling adequacy indicates the sample is sufficient for factor analysis ( $KMO = 0.91$ ). Bartlett’s Test of Sphericity indicates the sample is adequately related for an analysis of factor structure ( $X^2 = 1225.52, df = 45, p < 0.001$ ).

**Table 1** Demographic Characteristics of Participants (N=234)

Characteristic	n	%
Gender		
Female	205	87.6
Male	29	12.4
Age at time of Survey (years)		
18-25	17	7.3
26-34	49	20.9
35-44	39	16.7
45-54	65	27.8
55-64	56	23.9
65 or older	8	3.4
Highest education level completed		
Some high school	0	0
High school	0	0
Some college or technical school	16	6.8
Undergraduate	127	54.3
Post-graduate or professional	89	38
Prefer not to say	2	0.9
Annual income (\$)		
< \$15,000	10	4.3
\$15,000-\$24,999	10	4.3
\$25,000-\$49,999	32	13.7
\$50,000-\$74,999	56	23.9
\$75,000+	126	53.8

Table Continued...

Characteristic	n	%
Marital status		
Single never married	31	13.2
Married w/o children	154	65.8
Married w/ children	31	13.2
Divorced	1	0.4
Separated	3	1.3
Living w/ partner	14	6
Integrated Healthcare Setting Experience		
I have worked in an integrated healthcare setting in the past	52	22.2
I currently work in an integrated healthcare setting	127	54.3
I have never worked in an integrated healthcare setting	55	23.5
Health Service Provider Status		
Current Health Service Provider	175	74.8
Health Service Provider in Training	17	7.3
Current Health Service Provider and Health Service Student	31	13.2
Educator/Researcher	8	3.4
Administration/Other	3	1.3

Table 2 Participant Qualitative Feedback

Question	Themes	Subthemes
<b>healthcare reform</b>		
Explain what an ideal healthcare system would look like in America	Systemic Providers Patients	Approval procedures, policy maker fidelity, costs, access, health promotion and preventative focus, integrated system, standardized electronic record system Training, compensation, quality, policy Accessibility (location, choices, costs), accountability (of adherence and compliance), improved informed consent
What role should mental health treatment play in the healthcare system? How does the new role need to differ from its current role?	Parity Integration Stigma	common "health" (not physical vs. mental), reimbursement, coverage 24/7 emergency room services, long-term care and terminal diseases lacking Earlier screening and education
Social Media		
What are the pros of using social media in healthcare	None Inexpensive Reach Interactive Quality Privacy	More material Younger, faster, more information, more venues (twitter, Facebook, etc.), 24/7 availability, multiple devices Family, friends, educational, communication, support groups Information source, research or evidence behind information HIPAA, Theft, Fraud
What are the cons of using social media in healthcare?	Better Options Risk Patients Limited Reach	EMR, email to Referral if information causes crisis or needed services for the patient Elderly, information lost in shuffle of other social media information
What role should social media play in healthcare?	Compliance/ Adherence Education Marketing	Medications, appointments, homework, assessment, reminders Health promotion, shared decision making, diseases, Healthcare reform and policy change updates
What are your concerns related to social media uses in healthcare?	Patient Provider Tracking	Lack of knowledge of use, easily accessible by others on social media Ethical, blurring professional and personal boundaries, use for wrong purposes/profit Viruses, use information other purposes, selling information, fraud

The extraction resulted in five factors based upon examination of Eigen values greater than 1.0. The researcher determined, based upon consideration of Eigen values, visual evaluation of the scree plot, and relative effect size for competing models (i.e., variance explained), as well as inspection of resulting factor patterns and content (i.e., to consider number of items loaded on each factor and if there appeared to be correlated factors), to interpret two factors. Analysis of the factor structure of the survey indicated two distinct factors, one for personal, protected information and another for social networking, compliance,

outreach, and information dissemination (Table 4). Providers were more likely to support social media utilization in healthcare services for the second factor.

## Discussion

Healthcare providers in rural areas demonstrated an overall negative attitude towards healthcare reform. While a majority of practitioners support the use of social media in patient services (for the second factor), privacy, HIPPA, ethical, and other concerns are

prevalent. The authors conclude by discussing training implications, future directions for healthcare policy, and the need for regulatory bodies to invest time in developing social media policies and best practices.

**Table 3** Variables for Exploratory Factor Analysis

<b>Healthcare Reform (items one through seven) and Social Media (items eight through 17) Scales Factor</b>	
Number	
1. Healthcare is affordable	
2. Healthcare is accessible	
3. I have a say in healthcare policy	
4. I know how to advocate for healthcare issues important to me	
5. I know where to go to advocate for healthcare issues that are important to me	
6. I have used social media (i.e., twitter, Face book) for healthcare related issues	
7. My medical provider or an individual from my medical provider's office has encouraged me to use social media as part of their services I would like clients to have access to social media or apps related to which of the following healthcare related topics:	
8. Personal Records	
9. Billing	
10. Prescriptions	
11. Support Groups	
12. Communications with family	
13. Communication with employers	
14. Current healthcare information updates	
15. Healthcare policy updates	
16. Insurance/Medicaid/Medicare information	
Current disease and healthcare occurrence information specific to client's personal conditions or ailments	

**Table 4** Analysis of the factor structure of the survey indicated two distinct factors, one for personal, protected information and another for social networking, compliance, outreach, and information dissemination

Question Random ID = 0	Community		Factor Load		Community		Factor Load		Squared Diff
	Random ID = 1	Extraction	1	2	Random ID = 1	Extraction	1	2	
15		0.77	<b>0.94</b>	-0.24	0.82		<b>0.97</b>	-0.15	0.000
11		0.63	<b>0.82</b>	-0.05	0.73		<b>0.91</b>	-0.05	0.017
14		0.73	<b>0.80</b>	0.11	0.79		<b>0.85</b>	0.01	0.000
17		0.73	<b>0.80</b>	0.07	0.79		<b>0.76</b>	-0.01	0.000
16		0.69	<b>0.78</b>	0.08	0.64		<b>0.63</b>	-0.08	0.000
12		0.50	<b>0.65</b>	0.11	0.78		<b>0.63</b>	0.27	0.002
8		0.85	-0.04	<b>0.92</b>	0.81		0.35	<b>0.96</b>	0.002
9		0.95	0.14	<b>0.90</b>	0.70		0.04	<b>0.81</b>	0.008
10		0.82	0.34	<b>0.62</b>	0.70		-0.01	<b>0.74</b>	0.014
13		0.51	0.35	<b>0.41</b>	0.72		0.16	<b>0.57</b>	0.026

While there was a lack of provider support for all categories and purposes of social media use, most providers endorsed at least some methods of social media as being useful in health service provision. These areas are consistent with previously researched areas, such as policy, appointment reminders, support groups for patients and family members, and education/psycho education. The more personal or HIPAA protected the information, the less likely participants were to endorse the item to be used by patients. This was evident in the factor structure of the social media scale score, with factor one comprised of less protected data, and factor two more personal and protected data. Until protections and safeguards are in place, the authors agree with the participants that such information is better integrated into electronic medical record and portals on provider websites. The divide was also consistent throughout the qualitative data. Methods of use supported include: appointment reminders, family communication, support groups, medication compliance, education, and health promotion/psycho education are supported.<sup>12</sup>

### Conclusions

More clearly defined and transparent guidelines and by-laws are needed from various regulatory bodies and state licensure committees to guide practitioners in the future. In addition, effective ways to

disseminate the identified benefits of social media use (especially for healthcare policy related information) to providers is an area of future research need. Identifying more concise provider characteristics and opinions about specific social media utilization will also be important moving forward. Providing education on the success various programs have had will hopefully increase support and advocacy for the use of the ever-increasing form of communication that reaches both pediatric and geriatric patients.

The authors recommend social media training, with a required certificate, for all healthcare professionals through their educational institutions, and social media presence and education of grade school children. Framing these endeavors around health literacy enhancement and the goals to increase informed, competent, and educated consumers (and providers) can result in accurate shared decision making. Such patients would be more likely to follow up on recommendations of providers and enhances billing and accountability of service continuity. Of concerns to many providers, are the lack of access and an uninformed patient base. What better way than an inexpensive, frequently utilized method of communication available to every patient in their purse, pocket, or car? If the field decides not to grow, it will not thrive.

Limitations of this study include the use of novel instruments additional qualitative data coders or qualitative analysis software could improve the usefulness and utility of the qualitative results. There was a disproportionate number of RNs in the study. In addition, the sample represents a high pay and educational attainment portion of the overall healthcare provider sample.

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## Conflicts of interest

Author declares there are no conflicts of interest.

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