

Use and Acceptance of Social Media among Community Health Workers

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Abstract

Background: The use of social media as a means for health communication has greatly increased among health promotion specialists. Community Health Workers (CHWs), who serve as liaisons between health services and community members, are one group of health professionals who could benefit from integrating social media into occupational practice. The purpose of this study was to explore CHWs' intention to use social media to fulfill their occupational roles, their current use of social media, and other factors that influence their intention to use and current use of social media.

Methods: The research instrument was distributed as an email survey. The instrument contained three sections of questions: (1) use of social media tools as a CHW, (2) questions related to the Unified Theory of Acceptance and Use of Technology, and (3) demographic questions. A total of 196 CHWs completed the survey.

Results: The most common social media tools used as a CHW in both their personal life and professional role were social networking websites (89.3% and 76.9%, respectively), SMS texting (81% and 70.3%), and content sharing sites (71.1% and 56.2%). Social influence ($P<0.05$), performance expectancy ($P<0.05$), and voluntariness of use ($P<0.05$) were associated with behavioral intention. Building individual and community capacity ($P<0.05$) and the workplace providing social media tools ($P<0.0001$) were associated with current social media use in occupational roles.

Conclusion: Using social media as a CHW may open additional communication channels with the communities they serve. As reported in this study, some CHWs are already using social media tools both to fulfill job responsibilities and in their personal lives; however, CHWs may need support from their workplaces and proper training in order to more fully adopt social media into their work settings.

Keywords: Community health workers; Social media; Lay health educators; Unified theory of acceptance and use of technology; Health communication

Background

Accurate health information is important for individuals and communities as they make decisions for their personal and collective health. Community health workers (CHWs) may be a resource to access such information. CHWs, also known as lay health workers, lay health educators, health promoters (*promotoras de salud*), patient navigators, or peer counselors, are generally recognized as trusted members of the community who serve as liaisons between health services and community members [1-3]. CHWs utilize a variety of methods of communication with community members, but they have primarily used traditional communication channels such as face-to-face interaction and telephone and mailed communication [2,4-7]. Nevertheless, the communication channels used by the communities that CHWs serve are changing [8,9]. Media such as television, radio, and the first generation of Internet (Web 1.0) are becoming less popular [8-10], while social media as a means of health information and communication has greatly increased [11].

Internet and social media have impacted the way individuals receive education about their health, and CHWs may need to adapt to

communicate with their audiences. Clinicians in face-to-face settings remain a central resource for health information, but there are a growing number of individuals looking to obtain and share health information via social media. In a recent study by the Pew Internet Project, 87% of U.S. adults use the internet, 72% go online looking for health or medical information, and 26% of internet users have read or watched someone else's experience about health or medical issues in the past year [12]. This shift in communication processes means that social media may be beneficial for CHWs to share health information and communicate interactively, [13,14] which may increase the reach to health communication [15,16]. Little is known about CHWs' use of electronic communication. Insight into the factors affecting use of social media technologies can be beneficial into discovering how to increase their adoption and use in practice.

The Unified Theory of Acceptance and Use of Technology (UTAUT), formulated by Vankatesh et al. (2003), provides the theoretical framework for this study [17]. This theory combines key constructs of theories that were previously utilized to predict intentions and use of new technologies. The four key constructs of UTAUT include *Performance expectancy*, *Effort Expectancy*, *Social Influence*, and *Facilitating Conditions* [17].

The purpose of this study was to explore the intention of CHWs to use social media to fulfill their vocational roles, their actual use of social media in these roles, and factors that influence their intention

and use of social media technologies. Specifically, performance expectancy, effort expectancy, social influence, and facilitating conditions as related to social media use were assessed among CHWs.

Methods

Sample

There is no national database of CHWs, but there are CHW associations/organizations that maintain membership records. The sample for this study recruited from among these lists. Inclusion criteria included the ability to speak English or Spanish and being paid or volunteer CHW at the time of the study. Adapting from the American Public Health Association's definition, [1,4,18] the following terms were used to classify individuals as CHWs: "patient navigator", "promotora", "health promoter", "community health educator", "peer counselor", "community health aid", "natural helper", "peer educator", "peer outreach worker", "community health representative", "peer leader", "community advocates", "lay health advisor". Twenty-one of a possibly 28 CHW organizations agreed to participate, which included approximately 3,500 CHWs. Approximately 8% (n=275) agreed to participate and initiated the online survey, 204 completing the survey and 8 failing to meet the inclusion criteria. The final study sample included 196 CHWs with completed surveys.

Procedures

Following institutional review approval, an internet survey that was e-mailed to the CHW associations/organizations that agreed to participate, who then forwarded an e-mail with the survey link to their CHW members. The survey contained an invitation to participate in the study and a link to the survey. Data were collected from March 29th, 2013 to May 6th, 2013 using the Qualtrics Labs, Inc. software, Version 12,018 of the Qualtrics Research Suite [19]. Adapting methodologies from previous research to increase response rates, thank-you and follow-up reminders were included at 1 week, 2 weeks, and 3 weeks [20-23]. Participants that initiated the survey received a music download from Amazon or a code for a rental at Redbox.com. The e-mail invitations to participate were sent using an .edu organizational code (top level domain name) or using the CHW association's organization e-mail to ensure that emails reach the intended recipient and were not categorized as spam.

Instrument

The survey instrument was adapted from Hanson et al. [14] and Venkatesh et al. [19]. The instrument contained three primary sections: (1) questions related to use of social media tools as a CHW, (2) questions related to the UTAUT, and (3) questions related to demographics [20-23].

The first section asked questions related to use of social media and included blogs, SMS texting, forums or discussion groups, social networking (e.g., Facebook), RSS feeds, virtual communities, and content sharing (e.g., YouTube). Section two, questions related to the UTAUT, focused on the major constructs of performance expectancy, effort expectancy, social influence, facilitating factors, and behavioral intention. A five-point Likert scale assessed each construct, except behavioral intention. Behavioral intention was assessed with three questions that asked the CHW if he or she intended, predicted, or planned to use social media in his or her role as a CHW within the

next 12 months. Section three included questions about age, gender, supervisory or lead responsibilities, type of employment, race, ethnicity, annual household income, years as a CHW, and education. There was also a question which gathered information on the CHW's services provided in the community, which were based on CHW roles identified by Rosenthal et al. [24].

A panel of six experts in the field of CHWs established content validity. As part of the pilot testing phase, the expert panel reviewed the survey to ensure that it adequately addressed CHWs' role (s). After revisions from the expert panel, the survey was pilot tested among three English-speaking CHWs and four Spanish-speaking CHWs to ensure that the survey instrument appeared valid to CHWs, that instructions and questions were clear, and that the survey process functioned properly. Furthermore, Cronbach's α was used to test the reliability of UTAUT constructs in this study: [9] for performance expectancy, [8] for effort expectancy, [8] for social influence, [7] for facilitating factors, and [9] for behavioral intention. A Cronbach's α coefficient equal to or greater than [7] was considered acceptable for the purposes of this study [25].

Data analysis

The analyses were completed using Statistical Analysis Software (SAS), version 9.3 of the SAS System for Windows. Surveys with missing data or those that were only partially completed were excluded from the analyses. Chi-square statistics were computed to determine associations with current use of social media and other factors (e.g. ethnicity, employment status, CHW's role). Consistent with other approaches that have evaluated UTAUT, multiple linear regression analysis tested the association between the UTAUT constructs (performance expectancy, effort expectancy, facilitating conditions, and social influence) while controlling for age, voluntariness of use, years as a CHW, and gender [17,26-29]. The model included UTAUT composite variables.

Results

Most of the participants in this study were female (85%), Hispanic (53%), aged 45-54 (30%), were at least college graduates (45%) and were employed full-time as a CHW (59%) (Table 1). Forty-nine percent (49%) of the CHWs reported being a CHW for 1-3 years. Most of the CHWs reported their role in their communities as providing culturally-appropriate health education (99%), providing informal counselling and social support (91%), and building individual and community capacity (89%). The results from this study provide confirmation of the UTAUT model in that CHWs who reported agreement with the theoretical constructs were more likely to use social media in their jobs.

Demographic	n	%	Demographic	n	%
Gender			Hispanic (Ethnicity)		
Male	30	15.3	Yes	103	53.4
Female	166	84.7	No	90	46.6
Age			Type of Employment		
Age 18 to 24	4	2.1	Full-time	107	58.8
Age 25 to 34	39	20	Part-time	29	15.9

Age 35 to 44	47	24.1	Independently contracted	9	5
Age 45 to 54	59	30.3	Not paid/volunteer	27	14.8
Age 55 or older	46	23.6	Years as a CHW		
Household Income			1 to 3	93	49.2
Less than \$10,000	13	6.6	4 to 6	42	22.2
\$10,001 - \$14,999	9	4.6	7 to 10	29	15.3
\$15,000 - \$19,999	9	4.6	11 or more	25	13.2
\$20,000 - \$24,999	19	9.7	Education		
\$25,000 - \$34,999	47	24	High School Graduate or less	23	11.7
\$35,000 - \$49,999	38	19.4	Some college/technical school	84	42.9
\$50,000 - \$74,999	27	13.8	College graduate or higher	89	45.4
\$75,000 or more	10	5.1	Lead, Trainer or Supervisory Role		
Refused	24	12.2	Yes	76	42.9
State			No	101	57.1
AK	1	0.6	State		
CA	3	1.7	MN	5	2.8
CT	1	0.6	NM	5	2.8
DC	1	0.6	NY	19	10.7
DE	2	1.1	OH	2	1.1
FL	30	16.9	OR	4	2.2
IL	21	11.8	RI	4	2.2
IN	8	4.5	TX	43	24.2
LA	4	2.2	WA	1	0.6
MA	8	4.5	WI	4	2.2
MI	12	6.7	Unknown	16	9

Table 1: Demographics of participants.

CHWs' use of social media

The most common social media tools used as a CHW in both their personal life and professional role were social networking websites (89.3% and 76.9%, respectively), SMS texting (81% and 70.3%) and content sharing sites (71.1% and 56.2%). The least commonly used social media tools were virtual communities (28.1% and 23.1%). Usage of forums and discussion groups was high for personal use (73.6%) but was one of the least commonly used tool for professional roles (73.6%

Parameter	B	SE B	OR	Lower	Upper
Intercept	12.42	679	0.592	0.157	2.232
Bridging/Cultural Mediation	-0.524	0.677	<0.001	<0.001	>999.9

and 23.1%). Across all types of social media, CHWs reported significantly higher utilization in their personal lives as compared with their social media use in their professional role ($P<0.0001$) (Table 2).

Use of Social Media	UTAUT Construct	
	M	SD
Behavioral Intention*		
Yes	0.92	0.24
No	0.47	0.45
Facilitating Factors**		
Yes	3.95	0.78
No	3.55	0.8
Performance Expectancy*		
Yes	3.93	1.14
No	3.23	1.23
Effort Expectancy**		
Yes	4.31	0.75
No	3.86	1.21
Social Influence*		
Yes	3.75	0.95
No	2.75	1.12

Note: * $P<0.0001$. ** $P<0.05$. Means were compared using t-tests.

Table 2: Comparison UTAUT constructs by reported use of social media.

Factors influencing behavioral intentions

Results from the multivariate regression analyses revealed that social influence ($P<0.05$), performance expectancy ($P<0.05$) and voluntariness of use ($P<0.05$) were positively associated with behavioural intentions to use social media in their vocation as a CHW. Age and the number of years as a CHW were controlled for in the model, but gender was not included due to insufficient representation of male CHWs.

Factors associated with current social media use as a CHW

Building individual and community capacity ($P<0.05$) and the workplace providing social media tools ($P<0.0001$) were significantly associated with current social media use in occupational roles (Table 3).

Culturally Appropriate Health Education	-14.38	679	1.481	0.434	5.053
Assuring that People Get the Services they Need	0.393	0.626	0.312	0.044	2.207
Informal Counseling and Social Support	-1.166	0.999	1.119	0.378	3.308
Advocating For Individual and Community Needs	0.112	0.553	0.728	0.268	1.977
Providing Clinical Services and Meeting Basic Needs	-0.318	0.51	9.483	1.633	55.066
Building Individual and Community Capacity**	2.25	0.898	4.813	2.274	10.187
Organization Provides Social Media Tool*	1.571	0.383	1.012	0.979	1.046
Age	0.012	0.017	0.992	0.931	1.058
Years as a CHW	-0.008	0.033	1.374	0.639	2.954
Hispanic (Ethnicity)	0.318	0.391	0.979	0.438	2.188
College or Higher	-0.088	0.292	1.248	0.299	5.209
High School or Less	0.155	0.454	0.592	0.157	2.232

Note: Factors were evaluated using multivariate logistic regression; a95% CI corresponds to B; Chi-Square for the model=27.3 (P<0.05); *P<0.0001. **P<0.05.

Table 3: Factors associated with the use of social media as a CHW.

Discussion

The purpose of this study was to explore CHW's use and factors associated with intentions to use social media tools; specifically, to assess the difference between CHWs' personal and professional social media use, investigate factors influencing behavioural intention, and analyze behavioural intentions associated with current social media use as a CHW.

Many CHWs are using social media in their personal lives, such as social networking sites, SMS texting, and content sharing sites, but fewer are using them in their vocational roles. Reasons for this discrepancy can include obstacles such as policies restricting social media use in the workplace, particularly among older CHWs unfamiliar with social media use in the workplace (effort expectancy) and so on. Additionally, CHW trainings, such as the ones identified by Korda and Itani or the Centers for Disease Control and Prevention, [15,30] may help to influence perceptions about the social media's utility and increase use in vocational roles.

Intentions to use social media as a CHW were associated with the support that CHWs receive from "important others". These individuals included supervisors, other CHWs, individuals that the CHWs serve, leaders in their community, and individuals in the organization where they work. The UTAUT model delineates this association between social influence and behavioural intention. These findings suggest that for CHWs to more fully utilize social media, such practices must be valued by "important others." Individuals within an organization that work with CHWs can provide validation and support for the use of social media. Some organizations may be concerned about abuses of social media use in the workplace and some research has explored this topic [31]. Organizations may wish to create a policy that supports social media use, while considering any potential negative effect to the organization [15,32,33] (Figure 1).

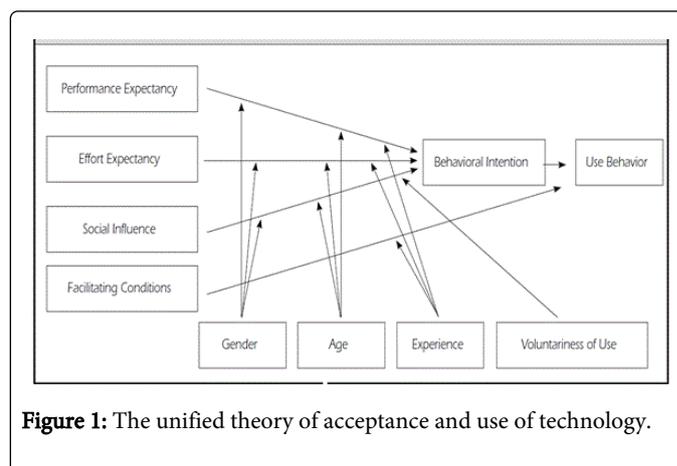


Figure 1: The unified theory of acceptance and use of technology.

Several factors were associated with current use of social media as a CHW. Most CHWs who placed a priority on building individual and community capacity reported using social media (Table 4). This finding may suggest that CHWs engaged in such activities may use social media as a tool to successfully improve health behaviours. Most of the CHWs that responded to the survey also reported using social media to connect and collaborate with other CHWs. These findings suggest that organizations that work with CHWs could also use social media to promote interactions between CHWs. These interactions may include sharing community information with other CHWs, receiving and providing social support, and sharing information that would improve CHWs' practice. Facilitating interaction among CHWs could also aid in recruiting other CHWs [34].

Social Media Tools	Personal Life		As a CHW	
	N	%	N	%
Blogs	57	47.1	57	47.1
Podcasting	43	35.5	37	30.6
Content Sharing	86	71.1	68	56.2
Social Networking	108	89.3	93	76.9
SMS Texting	98	81	85	70.3
RSS Feeds	44	36.4	33	27.3
Virtual Communities	34	28.1	28	23.1
Forums or discussion groups	89	73.6	28	23.1
Composite Measure (Mean)*		4.6		4

*Note: the composite measure (mean) represents all social media types combined. Means were compared using a paired t-test (P<0.0001).

Table 4: Differences between Personal and CHW-Related Use of Social Media.

Study results should be interpreted with several limitations—primarily related to the sample. There was a low response rate (6%), which limits the generalizability of the results to the diverse CHW profession. This low response rate may be due to the difficulty in reaching CHWs through online mediums, suggesting the need for research to find effective ways to reach CHWs. Despite continued efforts employed in this study to increase the response rate (e.g. one or more reminder e-mails, providing small incentives, distributing e-mails through the organization or association’s e-mail address or .edu domain, personal contact with the organizations to ensure distribution), it unfortunately did not improve. Additionally, the e-

mail surveys could have been classified as spam and never read even though the e-mails were sent through e-mail addresses presumed to be familiar to the CHWs. Notwithstanding the low response rate, this is similar to other response rates from online surveys attempting to reach CHWs [35] and to the Bureau of Health Professions CHW workforce estimates [36]. Finally, there was a poor representation of CHWs 18-29 years of age, which could have influenced composite scores of UTAUT constructs. The abundance of responses from CHWs older than 29 years of age minimized the potential confounder effect that could have resulted from younger respondents, had they existed in the sample, and their use of technology (Table 5).

Parameter	B	SE B	t Value	Pr> t
Intercept	0.073	0.19	0.38	0.701
Effort Expectancy	-0.021	0.032	-0.66	0.509
Facilitating Factors	0.04	0.037	1.1	0.274
Performance Expectancy	0.053	0.027	2	0.047
Social Influence	0.093	0.028	3.34	0.001
Voluntariness of Use	0.077	0.036	2.12	0.035
Age	0	0.002	0.02	0.983
Years as a CHW	-0.001	0.005	-0.3	0.767

Note: Factors were evaluated using multiple linear regression; R2 for the model=24% (P<0.0001)

Table 5: Factors associated with behavioural intentions to use social media as a CHW.

Conclusion

CHWs have traditionally communicated face-to-face. Due to changing communication methods of the populations and the potential benefits of social media for health promotion, social media could be another tool to aid CHWs in fulfilling their responsibilities. Using social media as a CHW may open additional communication

channels with the people they serve. These communication channels may be used for providing support, health education, engaging participants, and/or increasing reach or response. As reported in this study, some CHWs are already using social media tools to improve their job performance. Organizations that work with CHWs can create policies and provide training to promote and support the use of social

media through personal devices or devices provided by the organization. It is also important that CHWs are provided social support in social media use by “important individuals,” which may include individuals that they serve who lack access to social media tools. Social media can be promoted as another tool for CHWs if organizations provide social media tools (preferably social networking) and the appropriate training and support.

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