

Older adults' exposure to and posting of healthrelated messages on Facebook by chronic health condition status

DIGITAL HEALTH
Volume 9: 1-8
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sagepub.com/journals-permissions
DOI: 10.1177/20552076231203799
journals.sagepub.com/home/dhj



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Abstract

Objective: Older adults may be particularly interested in health-related content on Facebook, especially those who have chronic health conditions. The purpose of this study was to compare older adult Facebook users with and without a chronic health condition on their frequency of posting and exposure to health-related content.

Methods: Participants, recruited via Qualtrics, were regular Facebook users aged 50 + years. Participants were asked separately if they had seen, posted, and shared: Health-related information; about others'/their own health behaviors (e.g., exercise); and about others'/their own medical condition. Six logistic regression models, controlling for demographics and Facebook login frequency, were run to assess whether viewing and/or posting health-related messages differed by chronic health condition status.

Results: Respondents (N=697; 77.9% female) were on average 61.2 (SD=7.9) years old and (n=625; 89.7%) were White. One-half reported a chronic health condition (n=351; 50.4%). In adjusted models, those with a chronic health condition had a higher likelihood of seeing posts containing health information (OR=1.41; 95% CI: 1.04, 1.93) and about others' medical conditions (OR=1.67; 95% CI: 1.22, 2.27) at least once a month compared to those with no chronic health conditions. People with and without chronic health conditions did not differ in terms of how often they see others' post about health behaviors. Those with a chronic health condition had a higher likelihood of posting or sharing health information (OR=1.67; 95% CI: 1.22, 2.27), posting about their own health behaviors (OR=1.55; 95% CI: 1.00, 2.44; p=0.048), and about their health condition (OR=1.96; 95% CI: 1.17, 3.27) at least once a month.

Conclusion: Most older adults on Facebook are exposed to and post multiple forms of health-related content. Therefore, Facebook may be an appropriate channel for conducting health-related communication targeting older adults.

Keywords

Facebook media, chronic disease, health communications general, online general, health general, social media media Submission date: 20 February 2023; Acceptance date: 8 September 2023

Introduction

Facebook is a leading social media platform, with 2.80 billion monthly active users, 1.84 billion active daily users, ¹ as well as a broad user age distribution. ² Social media use is increasing among older adults (50+). ³ Facebook is the second most commonly used platform overall, after YouTube, and is used by 73% of adults aged 50-64 years. ⁴ In addition, older adults (aged ≥65 years old) are increasingly using Facebook with one-half

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using the site, up from 20% who reported using it in 2012. 3,5,6 While Facebook is generally used as a means of connecting with family and friends, the platform is also used for other purposes, such as special interest groups.

Facebook and other social media platforms are increasingly used to disseminate health information, public health messaging from governmental organizations, ^{7,8} social mobilization for health-related causes, and public health-related research. Between 1999-2000 and 2009-2010, the percentage of adults aged 45 and over with two or more chronic health conditions increased for both men and women, all racial and ethnic groups, and most income groups. 10 Since six out of every 10 adults in the United States have a chronic health condition and risk of chronic diseases increases with age, 11 seeking and sharing health-related content on Facebook may be of particular interest to older adult Facebook users. With the growing presence of older adults on Facebook, understanding how this population uses Facebook for health-related purposes could advance health-related promotion and research in this population.

From their inception, online health communities have been bringing together users with similar health conditions or interests, ¹² with the majority focusing on chronic health conditions and being hosted on Facebook. ^{13–18} Two of the main reasons people use Facebook chronic disease-related groups and pages are to get social support from patients like them and disease-specific information. ^{16,17} An early case study of a Facebook diabetes group found that members' interactions often focused on exchanging medical and lifestyle information, keeping a positive attitude toward living with diabetes, and providing encouragement to other members of the group. ¹² Another study advocates that health goals relating to chronic conditions can be better managed when patients use web-based health communities strategically. ¹⁹

However, the ubiquity of health misinformation is a persistent concern on Facebook and other social media platforms. For example, early anti-vaccine misinformation disseminated by anti-vaccine groups on Facebook effectively outpaced public health messaging related to coronavirus disease 2019 (COVID-19) vaccines and is partially responsible for the vaccine hesitancy related to these vaccines. ²⁰ Another study examining 200 cancer-related news articles and blogs posted on social media found that one-third of them contained misinformation; among these, three-quarters contained harmful information.²¹ In addition, the study found that user engagement was higher for articles that had misinformation compared to those that contained accurate information. However, a study of diabetes online communities found a much lower presence of potentially misleading information (range 0%–9% of posts across groups) and was characterized as unlikely to lead to untoward effects.²²

While Facebook use shows promise for health communication. ²³ and social support around chronic health

conditions, the range of health information exposure and exchange on the platform has yet to be considered in this population. Understanding how older adults interact with health information on Facebook is particularly relevant, as nearly 90% of older adult internet users reported using Facebook to find and share health information. The purpose of this study was to describe Facebook use among older adults and to report the frequency with which older adults posted and viewed health-related content on Facebook.

We also sought to understand what factors, such as login frequency and sociodemographic characteristics, are associated with exposure to and posting of health-related content among older adult Facebook users. We were especially interested in examining differences in the frequency of exposure to and posting of health-related content between those with and without a chronic health condition. We hypothesized that older adults with chronic health conditions would both see and post more health-related content on Facebook than those without hronic health condition.

Methods

Survey Administration and Sample

Participants (n = 697) who access Facebook at least one day a week and were at least 50 years old were included in the study (mean age = 61.2 years old (sd = 7.9)). Participants were recruited via Qualtrics as part of a larger crosssectional online survey assessing Facebook use (n =2508). Inclusion criteria for the larger survey included those aged between 18 and 85, who log in to Facebook at least once per week. This anonymous survey, determined to be an exempt protocol by the University of Connecticut Institutional Review Board, took approximately 45 min to complete. Qualtrics identified eligible participants and sent them our survey invitation and link. Respondents were provided with an information sheet containing many of the elements of informed consent. After reviewing this document, respondents received the option to provide their signature and voluntarily proceed to the survey or decline participation. Qualtrics provided compensation to participants based on their panel compensation structure. All survey data were collected in early March 2020 prior to the onset of the COVID-19 pandemic.

Measures

Demographic Characteristics. Participants were asked to report their age, gender, race, marital status, employment status, and educational attainment.

Chronic Health Condition Status. Chronic health condition status was assessed via self-report using the following question: "Do you currently have a chronic health condition?" Participants responded yes (having a chronic health

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condition) or no (having no chronic health condition). Respondents who reported having a chronic health condition were then asked to indicate all the conditions they have from a list of 21 health conditions, including arthritis, diabetes, heart disease, and an "other" option for respondents to specify another type of condition.

Facebook Login Frequency. How often participants accessed Facebook was queried with the following question, "How often did you go on your Facebook account in the past month?" Response options included: a few days a week (1–3 days a week on average), most days (4–6 times a week on average), and every day in the past month.

Health Information on Facebook. In separate items, participants were asked to indicate if they had seen or posted health-related information on Facebook. For example, "In the past year, how often did you see health-related information, health-related stories, or health-related news in your Facebook newsfeed?" Similarly, participants also asked if they have posted health-related content, "In the past year, how often did you post or share health-related information, health-related stories, or health-related news on Facebook?" Response options included never, once, a few times, once a month, once a week, a few times a week but not every day, or every day.

Health Behaviors on Facebook. Participants were asked to indicate if they had seen health behaviors on Facebook, "In the past year, how often did you see others posting about something they did for their health (for example, exercised, quit smoking, got vaccinated, got a checkup, etc.)?" Participants were then asked if they have posted about health behaviors using the following questions, "In the past year, how often did you post about something you did for your health (for example, exercised, quit smoking, got a checkup, etc.)?" Response options included never, once, a few times, once a month, once a week, a few times a week but not every day, or every day.

Health Conditions on Facebook. Participants were queried if they had seen using a single item, "In the past year, how often did you see others posting about their medical condition?" Participants were then asked if they had posted about their medical condition, using, "In the past year, how often did you post about your medical condition?" Response options included never, once, a few times, once a month, once a week, and a few times a week.

Statistical analyses

The outcome variables (frequency of seeing and posting health-related information on Facebook) were not normally distributed and were therefore collapsed. The three least frequent options (i.e., never, once, and a few times per month) were grouped as "Rarely" and the remaining options as "At least once a month."

Six logistic regression models, controlling for demographics and Facebook use frequency, were run to determine whether seeing and posting each of the three types of health-related messages differed by chronic health condition status. Demographic covariates included age, gender, race, education, marital status, and employment status. However, marital and employment statuses had no significant influence in the adjusted models and were removed for a more parsimonious model. Statistical analyses were conducted using SPSS version 28 (SPSS Inc., Chicago, IL, USA).

Results

Respondents (N = 697) were on average 61.17 (SD = 7.9) years old. Among these, 77.9% (n = 543) were female and 89.7% (n = 625) were White. The majority of respondents were married (n=370; 53.1%) and had attended some college or obtained a bachelor's degree (n = 529); 75.9%). One-half reported a chronic health condition (n =351; 50.4%). Among those with a chronic health condition, at least 10% of respondents reported having the following eleven conditions: Arthritis (n = 132; 37.6%), asthma (n = 132; 37.6%)59; 16.8%), diabetes (n = 90; 25.6%), headaches or migraines (n = 54; 15.4%), heart disease (n = 43; 12.3%), lung disease (i.e., COPD or emphysema) (n = 52; 14.8%), mental illness (i.e., depression, bipolar disorder, or anxiety) (n = 89; 25.4%), osteoporosis (n = 42; 12.0%), fibromyalgia (n = 43; 12.3%), and thyroid disorders (n =48; 13.7%). An additional N = 69 (19.7%) respondents indicated they had another condition other than the 21 conditions queried. More than half of respondents endorsed having two or more conditions (n = 197; 56.1%). Those with a chronic health condition were significantly less likely to be married (p < 0.001) and working either fullor part-time (p = 0.001) compared to those with no chronic health condition. Complete sample characteristics are shown in Table 1.

In the past year, about one-half of all respondents reported seeing posts containing health information (n = 377; 54.1%), others' health behaviors (n = 309; 44.3%), and others' medical conditions (n = 298; 42.8%) at least once a month. About one-fifth of the sample reported posting or sharing health information (n = 135, 19.4%) at least once a month, while 14.5% posted about their own health behavior (n = 101), and 10.5% posted about their medical condition (n = 73) this often.

In adjusted models (see Table 2), those with a chronic health condition had a higher likelihood of seeing posts with health information (OR = 1.41; 95% CI: 1.04, 1.93; p = 0.028) and posts about others' medical conditions (OR = 1.67; 95% CI: 1.22, 2.27; p = 0.001) at least once a month in the past year compared to those with no chronic health conditions. Similarly, those with a chronic health condition had a higher likelihood of posting

Table 1. Sample characteristics.

Demographics	Overall (n = 697)	Chronic health condition (n = 351)	No chronic health condition $(n=346)$	<i>p</i> -value
Age (mean (sd))	61.2 (sd = 7.9)	61.5 (sd = 7.8)	60.8 (sd = 8.1)	0.264
Gender: Female	543 (77.9%)	270 (76.9%)	273 (78.9%)	0.530
Race				0.418
White	625 (89.7%)	318 (90.6%)	307 (88.7%)	
Non-White	72 (10.3%)	33 (9.4%)	39 (11.3%)	
Education				0.405
High school graduate or less	168 (24.1%)	84 (23.9%)	84 (24.3%)	
Some college	307 (44.0%)	164 (46.7%)	143 (41.3%)	
Bachelor's degree or higher	222 (31.9%)	103 (29.3%)	119 (34.4%)	
Marital status Married Single or divorced	370 (53.1%) 327 (46.9%)	162 (46.2%) 189 (53.8)	208 (60.1%) 138 (39.9%)	<0.001
Working (full- or part-time)	266 (38.2%)	112 (29.9%)	154 (44.5%)	0.001
Chronic health condition	351 (50.4%)	351 (100.0%)	0 (0.0%)	-
One Two Three or more	154 (22.1%) 70 (10.0%) 127 (18.2%)	154 (43.9%) 70 (19.9%) 127 (36.2%)	-	
Health-related facebook exposures				
Seen:				
Health information	377 (54.1%)	202 (57.5%)	175 (50.6%)	0.065
Health behaviors	309 (44.3%)	162 (46.2%)	147 (42.5%)	0.330
Health condition	298 (42.8%)	170 (48.4%)	128 (37.0%)	0.002
Posted or shared				
Health information	135 (19.4%)	79 (22.5%)	56 (16.2%)	0.035
Health behaviors	101 (14.5%)	59 (16.8%)	42 (12.1%)	0.080
Health condition	73 (10.5%)	47 (13.4%)	26 (7.5)	0.011

health information (OR = 1.67; 95% CI: 1.22, 2.27; p = 0.001), posting about their own health behaviors (OR = 1.55; 95% CI: 1.00, 2.44; p = 0.048), and about their medical condition (OR = 1.96; 95% CI: 1.17, 3.27; p = 0.010) at least once a month. People with and without a chronic health condition did not differ in terms of how

often they saw others' post about health behaviors. In most cases, relative to those who reported using Facebook 1–3 days per week, those who used Facebook more often had a higher likelihood of seeing health-related posts (all ps < 0.05). Those who report using Facebook daily had a higher likelihood of sharing and posting

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Table 2. Logistic regression predicting seeing and sharing health-related messages.

	Seein	ıg		Seein	g		Seein	g		
	Healt	Health information		Health behaviors			Health condition			
	OR	CI	р	OR	CI	р	OR	CI	р	
Age	0.98	0.96, 1.00	0.081	0. 96	0.94, 0.98	<0.001*	0.98	0.96, 1.00	0. 027*	
Gender: Female (ref: Male)	1.56	1.07, 2.28	0. 020*	1.18	0.80, 1.73	0.399	1.14	0.78, 1.67	0.500	
Race: White (ref: Non-White)	1.12	0.67, 1.86	0.672	1.05	0.63,1.74	0.866	1.13	0.67, 1.88	0.653	
Education: Some college (ref: High school)	1.21	0.82, 1.79	0.339	1.07	0.72, 1.59	0.733	1.09	0.73, 1.61	0.686	
Education: bachelors or higher (ref: High school)	1.96	1.29, 2.99	0.002*	1.63	1.07, 2.49	0. 024*	1.38	0.90, 2.10	0.138	
Login frequency: 4-6 days (ref: 1-3)	2.16	1.22, 3.84	0.008*	1.96	1.05, 3.64	0.034*	1.36	0.74, 2.50	0.330	
Login frequency: 7 days (ref: 1-3)	3.21	1.98, 5.19	<0.001*	3.70	2.19, 6.27	<0.001*	2.87	1.73, 4.77	<0.001*	
Chronic health condition (ref: No)	1.41	1.04,1.93	0. 028*	1.23	0.90, 1.68	0.191	1.67	1.22, 2.27	0.001*	
	Posti	Posting			Posting			Posting		
	Healt	Health information			Health behaviors			Health condition		
	OR	CI	p	OR	CI	p	OR	CI	P	
Age	0.98	0 .96, 1.00	0. 027*	0.97	0.95, 1.00	0.057	0.97	0.94, 1.00	0.058	
Gender: Female (ref: Male)	1.14	0.78, 1.67	0.500	0.74	0.45, 1.22	0.235	0.85	0.48, 1.53	0.596	
Race: White (ref: Non-White)	1.13	0.67, 1.88	0.653	1.18	0.58, 2.43	0.650	0.86	0.40, 1.85	0.699	
Education: Some college (ref: High school)	1.09	0.73, 1.61	0.686	1.29	0.71, 2.32	0.406	0.89	0.47, 1.65	0.701	
Education: Bachelors or higher (Ref. High school)	1.38	0.90, 2.10	0.138	2.04	1.12, 3.71	0. 019*	1.14	0.60, 2.19	0.690	
Login frequency: 4-6 days (ref: 1-3)	1.36	0.74, 2.50	0.330	2.35	0.87, 6.32	0.091	1.67	0.48, 5.76	0.419	
Login frequency: 7 days (ref: 1-3)	2.87	1.73, 4.77	<0. 001*	3.08	1.29, 7.36	0. 011*	3.32	1.17, 9.43	0. 024*	

1.67 1.22, 2.27

0.001*

1.55 1.00, 2.40

OR: odds ratio; CI: confidence interval; p = p value; ref = reference.

Chronic health condition (ref: No)

health-related posts relative to those using Facebook 1-3 days per week (all ps < 0.05).

Female respondents were more likely to have seen posts about health information at least once a month (OR = 1.56; 95% CI: 1.07, 2.28; p = 0.020), compared to male respondents. Compared to those with high school or less education, those with a bachelor's degree or higher were more

likely to have seen messages about health information (OR = 1.96; 95% CI: 1.29, 2.99; p=0.002) and specific health behaviors (OR = 1.63; 95% CI: 1.07, 2.49; p=0.024), as well as more likely to post messages about their own health behaviors (OR = 2.04; 95% CI: 1.12, 3.71; p=0.019). On the other hand, older age was associated with a lower likelihood of having seen posts from

0.048*

1.96 1.17, 3.27 0.010*

others about health behaviors (OR = 0.96; 95% CI: 0.94, 0.98; p<0.001), seen posts about others' health conditions (OR = 0.98; 95% CI: 0.96, 1.00; p=0.027), and posted health information (OR = 0.97; 95% CI: 0.94, 0.99; p=0.009).

Post hoc analyses were conducted to assess the significance of associations between chronic health condition status and each of the six outcomes given the multiple comparisons. Using the conservative Bonferroni correction, p-values ≤ 0.0083 (0.05/6 = 0.0083) would remain significant. When applying a less conservative false discovery method, ²⁵ the associations with p-values ≤ 0.028 , would remain statistically significant. Therefore, greater confidence can be attributed to the four associations and two associations meeting the less conservative false discovery and Bonferroni thresholds, respectively.

Discussion

This study examined health-related Facebook exposure and information exchange among older adults (aged ≥50 years old). Older adults with chronic health conditions were more likely than those without chronic health condition to see health-related information and posts about others' medical conditions on Facebook at least once a month. In addition to being consumers of health-related information, older adults appear to be health-related information disseminators on Facebook. Those with a chronic health condition had a higher likelihood of seeing as well as posting health information about their health conditions.

This study helps shed new light on the social media behaviors of older adults and suggests they are relatively likely to see (42.8%-54.1%) and to a lesser degree, post (10.5%–19.4%) health-related content on Facebook. Thus, Facebook has the potential to be used for health promotion as users have greater access to health information and social support around health behaviors and conditions. ^{23,26,27} This may be particularly important for older populations who are at a higher risk for both chronic disease and social isolation.²⁸ A more nuanced examination of age within the older demographic is needed to better characterize their experiences as increasing age was associated with diminished exposure to and sharing of health messages within our sample. On the other hand, those with a higher attained education and those who use Facebook more frequently are more likely regularly see, share, and post-health-related information on Facebook. Additional research is needed to better understand how the reach of health-related Facebook content varies by subsets of older adult users. For example, it is not known the extent to which higher exposure to health-related information is explained by membership in health-related groups among those with a chronic health condition. Future research on how older adults are exposed to health-related content on Facebook is warranted.

In addition, exposure to health information on Facebook may be problematic considering the high volume of health misinformation on social media platforms, ^{29,30} including Facebook.³¹ Indeed, recent research suggests that those over 65 years old are more likely to share misinformation through Facebook, even when controlling for education, ideology, and partisanship.³² Older adults are more vulnerable to health misinformation, ³³ so it is important to understand how much they are seeing and posting health-related content as they may be contributing to the spread of misinformation unknowingly. Another study showed use of social media for health-related information during the COVID-19 pandemic may add to older adults' anxiety.³⁴ Social media accounts from government and public health organizations can help dispel misinformation and control rumors by amplifying accurate messages.⁷ At the start of the COVID-19 pandemic, Facebook content from government and academic sources was shared more often than posts containing less credible or harmful information.³⁵ Health messaging is time sensitive, especially during acute public health crises, such as the COVID-19 pandemic. It is critical that accurate messages are present in health communications online before narratives containing rumors and conspiracy theories have been developed and spread.²⁰ Future studies should examine the veracity and type of health-related content that older adults see and share on social media and how they make decisions on what to share, how they gauge the veracity of the health content they see and share, and the impact of the health content they see on their behavior.

Strengths, limitations, and future directions

The present study includes a large sample of older adult Facebook users, a relatively understudied population in social media research. Another strength of this study includes its focus on both the frequency of older adults seeing various types of health-related posts on Facebook, as well as how often they share/post-health-related posts, which reflects a more thorough assessment of health information exposure and exchange behaviors relative to prior studies. The diversity in types of chronic health conditions in the sample and consistency of results across each type of health messaging provide robust support that those with a chronic health condition engage with health-related content more frequently on Facebook.

The sample was acquired through Qualtrics panels which may limit the generalizability of study findings. For example, participants may be more computer and internet-savvy than the general population. However, this does not invalidate the associations identified in this sample. In addition, the data were collected via self-report and therefore subject to recall bias. It is possible that those with a chronic health condition have a great ability to remember or accurately recall their exposures to health

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information. The study survey was cross-sectional. Therefore, the association between having a chronic health condition and increased exposure to health-related content may not be causal. For example, it may be that those with a chronic health condition are more likely to notice health information given because they have a chronic health condition. Further, the sample was not representative by design so the percentage reporting Facebook use may not be representative of the population of older adults. The associations can, however, be interpreted with greater confidence given the sample size. Moreover, the age range was large (50-85) and so may not capture the nuances of any particular age segment within that range. Future research may seek to reproduce these findings in other samples and examine exposure to and sharing of health-related content on Facebook between different age groups of older adults. The frequency of Facebook use used in this study (i.e., number of logins) does not account for the duration of time spent using Facebook; thus, future studies may consider more precise measures of Facebook use intensity. In addition, this study did not examine the content of health-related messages viewed or posted on Facebook and therefore, could not assess whether exposures vary by chronic health condition status or differences by condition. An analysis of health conditions may produce more nuanced findings and should be considered in future research. Future studies are also needed to assess the specific type of health-related content and accuracy of health information seen and shared by older adults and the subsequent impact of these exposures on health behaviors. In addition to assessing how and why older adults interact with health information on Facebook, future studies should seek to establish best practices for clinicians and researchers to leverage Facebook to disseminate health information to an increasingly older userbase.

Finally, data were collected prior to the COVID-19 pandemic; therefore, the data do not reflect health information sharing that was highly prevalent on social media during the pandemic. Finally, social distancing amid the COVID-19 pandemic could have led to higher social media use among older adults during the pandemic. One study found that social technologies, including Facebook, played a large role in the daily lives of older adults during the COVID-19 pandemic and helped them stay connected with their families.³⁷ Future studies should explore how older adults are engaging with health information on social media in a post-pandemic world.

Conclusion

This study suggests that older adult Facebook users are frequently exposed to and exchange multiple forms of health-related content on Facebook. Because older adults have a higher prevalence of chronic health conditions,

and those with chronic health conditions in this sample were more likely to see and post health-related information, research is needed to understand how to reach this population with accurate and effective health messaging on social media. As in-person interactions were reduced during the COVID-19 pandemic, technology use, and potentially social media use increased among older adults. Thus, it may be an opportune time to launch health communication campaigns geared toward older adults.

Declaration of conflicting interests: The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding: The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was funded in part by a National Cancer Institute T32 award (2T32CA093423) to CAM.

Ethical approval: The ethics committee/IRB of the University of Connecticut approved this study.

Guarantor: CAM.

Contributorship: SP, MWS, and CAM researched the literature and conceived the study. SP and MWS designed the survey and gained ethical approval. CAM and MS conducted data analysis. CAM wrote the first draft of the manuscript. All authors reviewed and edited the manuscript and approved the final version of the manuscript.

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