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E-Media Use and Preferences for Physical Activity and Public Health Information: Results of a Web-Based Survey

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Abstract

Context—As social media (e.g., Twitter) continues to gain widespread popularity, health research and practice organizations may consider combining it with other electronic media (e-media) channels (e.g., websites, e-newsletters) within their communication plans. However, little is known about added benefits of using social media when trying to reach public health audiences about physical activity.

Objective—Learn about current use and preference for e-media communication channels among physical activity researchers and practitioners.

Design—A web-based survey was used, open for responses from August 20, 2015 through January 5, 2016. Survey participation was voluntary and anonymous. The survey was advertised through multiple channels targeting physical activity researchers and practitioners, including

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announcements on professional listservs and in e-newsletters, Twitter, and posts on Facebook pages of public health organizations.

Setting and Participants—A total of 284 survey respondents had complete data.

Main Outcome Measures—Typical use of e-media to receive, seek out, and share information about physical activity and health, and what appeals to researchers and practitioners for professional use.

Results—Most respondents preferred non-social media channels to social media and these preferences did not differ widely when examining subgroups such as researchers versus practitioners or social media users versus non-users. There were few differences by respondent demographics, though younger respondents reported using social media more than older respondents. However, limiting analyses to respondents who identified as social media users, only about 1% of respondents ranked social media sources as their preferred channels for information; thus most people would continue to be reached if communication remained largely via non-social media emedia channels.

Conclusions—The present study supports growing evidence that careful surveying of a target audience should be undertaken when considering new communication channels, as preference and use may not support the effort required to create and maintain resource-intensive strategies like social media.

Keywords

Information Dissemination; Communication; Public Health Practice; Internet; Social Media

Introduction

A goal of many public health research and practice organizations, such as the Centers for Disease Control and Prevention (CDC)-funded Prevention Research Centers (PRCs), is the timely communication of topical public health information.[1] Organizations such as the CDC PRCs are charged with disseminating health information across diverse audiences, including academic researchers, federal, state, and local health department employees, and community health advocates.[2] As such, there is a need to identify the most effective communication methods, including electronic media (e-media) outlets, and continue to monitor these options to ensure they remain appealing and relevant to target audiences.

While some e-media outlets such as websites, e-newsletters, webinars, and listservs have been widely used for research and practice, in recent years, there has been a rapid proliferation of new e-media communication outlets, including social media platforms. Social media includes platforms such as Facebook (www.facebook.com), Twitter (www.twitter.com), and Instagram (www.instagram.com), as well as more professionally- and academically-focused platforms such as LinkedIn (www.linkedin.com), ResearchGate (www.researchgate.com), and Academia.edu (www.academia.edu). National polls show that 71% of online adults in the US adults use Facebook, 23% use Twitter, 26% use Instagram, and 28% use LinkedIn.[3] This high engagement with social media has opened dialogs in many fields about the utility of social media for dissemination of information, including

analyses of the impact of using these platforms to reach a larger and potentially more diverse audience than is possible through other media outlets.[4] The CDC, for example, has over 625,000 followers on their main Twitter account (@CDCgov) page (https://twitter.com/CDCgov), and regularly tweets information about health conditions, disease outbreaks, and new reports/guidelines. However, a recent study analyzed the followers of public health Twitter accounts and found that they were more likely to be organizations than individuals, making it difficult to assess the impact of organizational Twitter accounts for professional information exchange.[5]

Drawbacks may exist in adopting social media as an addition to or replacement for more other e-media offerings such as electronic newsletters (e-newsletters), e-mail listservs, and webinars. First, there are minimal empirical data about the audience of social media accounts for specific research and practice purposes.[6] Second, little is known about health researchers' and practitioners' preferences for e-media sources of information, and match between preferences and content delivered is important in establishing an effective social media presence.[6] Third, creating and maintaining an effective social media presence requires considerable knowledge[7] and investments in time and monetary costs that must be justified.

The purpose of the present study was to better understand physical activity researchers' and practitioners' preferences for seeking and disseminating information about public health and physical activity through e-media. Using a web-based survey, a sample of physical activity researchers and practitioners were queried about how they typically receive, seek out, and share information about physical activity and health, what channels appeal to them for professional purposes, and their preferences for accessing this type of information. The survey was undertaken to assist with the University of South Carolina (USC) PRC's decision about whether to expand the Center's e-media offerings and specifically whether the Center should consider various social media options. These results may help to inform other public health organizations considering changes to their communication plans.

Methods

Procedures

The web-based survey was administered via SurveyGizmo (http://www.surveygizmo.com/), a secure online survey engine, and was open for responses from August 20, 2015 through January 5, 2016. Survey participation was voluntary and anonymous. The survey was advertised through multiple channels targeting physical activity researchers and practitioners, including announcements on professional listservs and in e-newsletters (including the USC PRC's quarterly newsletter and physical activity listserv), and posts on the Facebook pages of public health organizations. A link to the survey was also tweeted out (7 tweets) from the personal account of the USC PRC graduate research assistant, including 8 direct tags to physical activity organizations; many tweets were retweeted (n=9), extending their reach. The study was approved by the Institutional Review Board at USC.

Survey Composition

The survey queried physical activity researchers and practitioners about how they typically receive, seek out, and share information about physical activity and health, what channels appeal to them for professional use, and what their preferences are for accessing this type of information.

Demographics.—Respondents were asked their age, gender, race/ethnicity (investigator derived checklist), sector of employment, highest degree held, and country and state (for U.S. respondents) of residence. To better understand any differences in e-media use and preferences by professional sector, respondents' employment was dichotomized as researcher or practitioner. Individuals who indicated multiple sectors of employment that included at least one academic affiliation (n=19) were coded as researchers.

Use of social media.—Social media platforms considered in the survey included Facebook, Twitter, Instagram, LinkedIn, ResearchGate, and Academia.edu. Respondents indicated if they had accounts for the social media platforms, if they used the platforms to receive, seek out and share information about physical activity and health, and if the platforms appealed to them for professional use. Social media users were defined as respondents who reported that they use at least one of the following general social media platforms and that at least one of them was appealing for professional use: Facebook, Twitter, Instagram.

Use of other e-media.—Other e-media sources were operationalized as e-newsletters, websites of professional organizations/groups, blog posts from organizations/groups, listservs, podcasts, webinars, and text messages. Respondents indicated if they use each source to receive, seek out, and share information about physical activity and health, and if the source appeals to them for professional use.

Preferences for e-media.—A single-item question, which included all social and other emedia sources, asked respondents to rank their top three preferred types of e-media for future use to receive, seek out, and share professional information and resources. Responses were weighted to show overall preference for e-media types, such that channels ranked first were assigned three points, second were assigned two points, and third were assigned one point. An average ranking was then calculated for each e-media type for each response group (i.e., total sample, researchers, practitioners, social media users, social media non-users).

Statistical Analyses

Participants with complete responses for all survey items were retained in the analytic sample. Analyses were conducted for the full sample and for two subsample comparisons: researchers versus practitioners and social media users versus social media non-users. T-tests and chi-square tests were used to determine whether differences existed between the subsample pairs. Further analyses examined demographic predictors of use and preference of different e-media types. T-tests and two-way ANOVA models with tukey comparisons were used to determine whether differences existed between demographic subgroups. Some

subgroups were collapsed due to small sample sizes (e.g., race analyzed as white vs. non-white). All analyses were conducted in SAS version 9.4 (SAS Institute, Cary, NC, USA) and findings at $p<.05$ were considered significant.

Results

Descriptive Characteristics of Survey Respondents

A total of 388 people began the survey; 284 (73%) had complete data and were included in the final sample. Of the respondents who were excluded, most (n=87) only answered a few descriptive questions (e.g., employment sector) and did not provide any further responses; the remaining 17 did not provide full demographic information. Respondents were 30–39 years old (28.5%), female (77.5%), living in the US (91.9%), and White (85.6%). Over half had a doctoral degree (53.5%) and the majority were employed in academics (66.9%). Full demographic comparisons between researchers (66.9% of total sample) and practitioners (33.1%) as well as between social media users (65.1% of total sample) and social media non-users (34.9%) are available as supplemental digital content (Supplemental Table 1).

Use of E-Media Source to Receive, Seek Out, and Share Physical Activity Information

Overall, as shown in Table 1, the most widely reported e-media sources for receiving, seeking out, and sharing physical activity information were websites (93.7%), e-newsletters (89.8%), and webinars (82.0%). Both researchers and practitioners selected the same top four emedia sources to receive, seek out, and share physical activity information: websites, enewsletters, webinars, and listservs. However, a smaller percentage of researchers than practitioners endorsed e-newsletters, webinars, blog posts, text messages, Facebook, and LinkedIn. In contrast, researchers were more likely than practitioners to turn to ResearchGate for physical activity information exchange. Social media users and social media non-users selected the same top four e-media sources to receive, seek out, and share physical activity information: websites, e-newsletters, webinars, and listservs (Table 1). However, a larger percentage of social media users than social media non-users reported using blog posts, Facebook, Twitter, and Instagram.

Examining the overall relationship between age group and use of e-media sources for receiving, seeking out, and sharing physical activity information by demographic subgroups, 93% of 20–29 year olds reported using social media, which was significantly more than 40–49 year olds (60%) and 60+ year olds (38%), and 30–39 year olds used social media (75%) significantly more than 60+ year olds ($F_{4,279}=9.95$, $p<.001$). Examining specific e-media sources, 69% of 30–39 year olds used Facebook, significantly more than 50–59 year olds (41%) or 60+ year olds (35%, $F_{4,279}=4.37$, $p=.002$), while 20–29 year olds used Instagram (33%) significantly more than other groups (16% of 30–39 year olds, 8% of 40–49 year olds, 3% of 50–59 year olds, 3% of 60+ year olds; $F_{4,279}=7.37$, $p<.001$). Alternately, 62% of 20–29 year olds used webinars, which was significantly less than all other groups (85% 30–39 year olds, 88% 40–49 year olds, 83% 50–59 year olds, 88% 60+ year olds; $F_{4,279}=3.86$, $p=.005$). Examining by gender, there were significantly more women who used Instagram than men (15% vs. 6%, $p=.03$), but more men who used ResearchGate than women (50% vs.

26%, p<.001). Examining by race, there were more white respondents than non-white respondents who used listservs (75% vs. 51%, p=.004) and podcasts (45% vs. 20%, p=.006).

Appeal of E-Media Sources for Professional Purposes

Overall, as shown in Table 1, the sources selected as most appealing for professional purposes were websites, e-newsletters, and webinars. Both researchers and practitioners endorsed the same top four e-media sources for professional purposes: websites, e-newsletters, webinars, and listservs. A smaller percentage of researchers than practitioners endorsed e-newsletters, webinars, Facebook, and Instagram. On the other hand, a larger percentage of researchers than practitioners found ResearchGate appealing. Both social media users and social media non-users selected the same top four e-media sources as appealing for professional purposes: websites, e-newsletters, webinars, and listservs. A larger percentage of social media users than social media non-users endorsed blog posts, Facebook, Twitter, Instagram, and LinkedIn.

Examining by demographic subgroup, there was one significant difference by age group where significantly more 20–29 year olds (49%) than 60+ year olds (12%) stated that Twitter has professional appeal to them ($F_{4,279}$=3.31, p=.01). Examining by gender, significantly more women (78%) than men (66%) stated that listservs appeal to them (p=.04). Examining by race, significantly more white than non-white respondents stated that webinars (90% vs. 71%, p=.03) and listservs (78% vs. 57%, p=.01) appeal to them.

Preferences for E-Media Sources for Seeking out and Receiving Professional Information

When asked to rank their top three e-media sources for seeking out and receiving professional information, the top selections were websites and e-newsletters for the overall sample, with webinars and listservs tied for third (Supplemental Table 2). Average rankings for all e-media sources ranged from 0.0–1.9. Researchers and practitioners did not differ in their top two rankings (websites, e-newsletters). Beyond that, researchers ranked webinars significantly lower than did practitioners, whereas researchers ranked ResearchGate and text messages higher than did practitioners. Social media users and social media non-users did not differ in their top three rankings (websites, e-newsletters, webinars). Social media users ranked listservs and text messages significantly lower than did social media non-users; in contrast, social media users ranked Facebook and Twitter higher than social media non-users.

Examining by demographic subgroup, there were three significant differences by age group in terms of rank of three e-media sources for seeking out and receiving professional information. Respondents 60+ years old ranked Academia.edu significantly higher than all other age groups ($F_{4,279}$=3.23, p=.01), while 30–39 year olds ranked Facebook higher than 40–49 and 50–59 year olds ($F_{4,279}$=3.37, p=.01), and 60+ year olds ranked websites higher than 30–39 year olds ($F_{4,279}$=2.70, p=.03). Examining by gender, females ranked Facebook (p=.02) and podcasts (p=.01) significantly higher than males. Examining by race, white respondents ranked text messages significantly higher than non-white respondents (p=.03).

E-Media Reach for Social Media Users

To better understand whether social media users would be reached by other e-media sources alone (e.g., to estimate who might be missed if social media were not used), we explored the top three preferred e-media sources for seeking out and receiving professional information among this group. Overall, 41.2% (data not shown) of respondents ranked any social media in their top three preferred channels for seeking information, but only 0.4% (n=1; data not shown) of respondents ranked only social media channels as preferred.

Discussion

This paper explored the preferences of physical activity researchers and practitioners for seeking and disseminating information about public health and physical activity through e-media. The results show some consistency between the most used e-media channels as well as those preferred for professional use in the sample overall, as well as within subgroups based on professional affiliation, social media usage, and demographic characteristics. Of note, websites, e-newsletters, and webinars were among the three most endorsed e-media sources for seeking information, for professional use, and for rank-ordered preference in the sample overall, and remained the top-ranked preferences when examining subgroups such as researchers, practitioners, and social media users vs. non-users.

In comparing researchers and practitioners, the survey suggests that researchers had a narrower range of highly-endorsed e-media channels that they preferred than did practitioners, who used a range of outlets. This could be a reflection of the diversity of occupations represented in the practitioner subgroup, but might also be a reflection of the somewhat traditional approach to communication and e-media taken by researchers in general; previous investigation has found that few students and professors use social media for academic practice.[8–10]

A secondary aim of the present study was to examine the e-media channel preferences of people who could be considered as social media users, to determine whether they would be reached if social media were not utilized and communication remained delivered via largely other e-media channels. Social media users had the same preferred channels as did social media non-users. Further, only about one quarter of respondents ranked social media channels among their top three preferred methods for seeking information and only 1% offered only social media options as their preferred channels. This suggests that the needs and preferences of most respondents would be met by other e-media channels for professional information, although a mix of social media and non-social media channels could also be effective. These results are reinforced by recent research from Australia that found that only one-quarter of the health professionals surveyed used Twitter for professional information exchange and only 15% used it for dissemination of research findings.[11]

Examining the results by demographic subgroup, a few notable differences in preference and ranking of e-media sources emerged. First, the majority of differences by age group emerged when examining use of e-media sources for receiving, seeking out, and sharing physical activity information, where younger age groups tended to report more use of social media

and less use of webinars. Overall, there were few significant differences in preference and ranking of e-media sources by gender and race. This suggests that for the purposes of professional use of e-media sources, professional sector (research vs. practice) and overall use of social media might be more salient ways to investigate use of e-media than other subgroup characteristics (age, gender, race).

While the results of the present study indicate that social media were generally not a preferred channel for the target audience, preferences may differ for other research and practice organizations. Therefore, if organizations are considering the adoption of social media channels, they may want to consider conducting a needs and preferences assessment of their target audiences prior to the launch of their communications as we did, and as others have advised.[6] Further, organizations may consider a plan to assess key performance indicators as outlined by Neiger and colleagues, including insights (feedback on consumer attitudes/perspectives), exposure (frequency of viewing content), reach (number of people who contact the content), and engagement (number of people who interact with the content) if they develop social media outlets.[7]

One of the aims of the present research was to inform the USC PRC's decision about whether to expand the Center's e-media offerings, and specifically if the Center should add social media channels. Based on the results of the present study, the Center's communication and dissemination workgroup chose to maintain the existing e-media communication channels (e.g., listserv, e-newsletter, website) and add to the current efforts in areas that were endorsed by respondents, such as further promotion of webinars. At present, the Center does not have plans to add social media to its e-media strategies but will continue to monitor the demand for such offerings among research and practice constituencies.

This study has limitations. First, the conclusions of the survey may be specific to the physical activity and public health audience that the survey targeted and may not be generalizable to other groups. As suggested above, other types of organizations may consider conducting their own needs assessment to determine the best channels to reach their target audience. Second, the sample was biased towards inclusion of doctoral-level academic researchers and may not have fully captured the diverse perspectives of respondents in various practice positions. Despite these limitations, the present study is based on a relatively large number of responses and represented fair diversity of occupation and other demographic characteristics within the participants.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Implications for Policy & Practice

- Survey results demonstrated that most respondents preferred non-social media channels for professional information, such as websites, e-newsletters, webinars, and listservs, and these preferences did not differ widely when examining subgroups such as researchers versus practitioners, or social media users versus non-users.
- Future research may explore the evolution of e-media preferences as social media channels continue to change, and may include a more extensive sample of respondents from practiceoriented positions to better understand diversity within meaningful subgroups of practitioners.
- Overall, study findings support growing evidence that careful surveying and segmenting of a target audience should be undertaken when considering new communication channels, as preference and use may not support the effort required to create and maintain resourceintensive strategies such as social media.

Table 1:

Use and Appeal of E-Media Sources for Physical Activity Information and Professional Purposes, E-Media Web Survey, 2016

	Total Sample %	Researcher %	Practitioner %	Social Media User %	Social Media Non-User %
Sample size	**(n=284)**	**(n=190)**	**(n=94)**	**(n=185)**	**(n=99)**
Use of E-Media Sources to Receive, Seek out, and Share Physical Activity Information					
Websites	93.7	93.2	94.7	94.1	90.1
e-Newsletter	89.8	86.8	95.7[b]	92.4	84.9
Webinar	82.0	78.4	89.4[a]	84.3	77.8
Listserv	71.8	74.7	66.0	71.9	71.7
Blog posts	49.3	44.7	58.5[a]	54.6	39.4[a]
Podcasts	41.6	42.1	40.4	15.7	44.4
Text Messages	14.4	10.5	22.3[a]	15.7	12.1
Facebook	53.5	48.4	63.8[a]	68.1	26.3[c]
Twitter	30.6	29.0	34.0	45.4	3.0[c]
Instagram	12.7	10.0	18.1	18.9	1.0[c]
LinkedIn	27.1	22.1	37.2[b]	30.3	21.1
ResearchGate	31.3	43.7	6.4[c]	33.0	28.3
Academia.edu	5.6	6.3	4.3	6.5	4.0
Appeal of E-Media Sources for Professional Purposes					
Websites	91.2	90.0	93.6	93.0	87.9
e-Newsletter	91.9	89.0	97.9[b]	93.5	88.9
Webinar	87.3	84.2	93.6[a]	89.2	83.8
Listserv	75.4	77.4	71.3	75.1	75.8
Blog posts	63.7	62.6	66.0	70.3	51.5[b]
Podcasts	63.7	63.2	64.9	66.0	59.6
Text Messages	18.7	17.9	20.2	18.9	18.2
Facebook	39.8	34.7	50.0[a]	60.5	1.0[c]
Twitter	37.3	35.3	41.5	55.1	4.0[c]
Instagram	12.7	9.5	19.2[a]	18.4	2.0[c]
LinkedIn	56.0	53.2	61.7	65.4	38.4
ResearchGate	53.5	65.3	29.8[c]	57.3	46.5
Academia.edu	28.9	31.1	24.5	31.4	24.2

[a]between-subgroup t-test p<.05

[b] between-subgroup t-test p<.01

[c] between-subgroup t-test p<.001