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The Use of Social Networking Sites (SNSs) in Health Communication Campaigns:
Review and Recommendations

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Abstract

The past decade has witnessed a rapid increase in the use of Social Networking Sites (SNSs) in health communication campaigns seeking to achieve an ambitious range of health-related impacts. This paper provides a review of 40 studies and research protocols, with a focus on two key factors that differentiate SNSs from more traditional health communication approaches of the past. The first is the potential dualism between message sender and receiver, in which receivers become receiver-sources who forward and amplify the content and reach of health messages. The second is the potential dualism between message and message impact, in which the act of forwarding and modifying messages by receiver-sources itself becomes a measure of message impact. Each of these dualisms has implications for the design and evaluation of contemporary health communication campaigns. The review concludes with a series of observations and recommendations for future health communication research.

Social networking sites (SNSs), such as Facebook and Twitter, have quickly become popular components of 21st Century health communication initiatives (Capurro et al., 2014; Gold et al., 2011). Consider the following high-profile example:

- In 2014, millions of social media users around the world joined in to raise awareness about amyotrophic lateral sclerosis (ALS), a disease with relatively low public awareness at the time. This initiative, which called for posting, commenting about, and sharing videos of people dumping ice water over their heads in the “Ice Bucket Challenge” (Townsend, 2014), originally was not related to ALS at all. One person who received a message about the original Challenge linked it to ALS and it was his modified message that went viral (Sifferlin, 2014). This SNS promotion, which attracted such diverse participants as Bill Gates, Oprah Winfrey, Eminem, New Jersey Governor Chris Christie, and the children of physicist Stephen Hawking, raised an estimated \$100 million for ALS research (Vaidya, 2014) even though that was not the intention of the original sender.

This anecdotal account illustrates the potential for SNSs to elevate awareness, galvanize popular interest, and raise funds for health-related causes. While its success is not representative of the many more SNS efforts that do not achieve such global cult status, this example underscores the unprecedented potential of SNSs to alter future planning and research for health communication campaigns, as well as expectations for what SNS campaigns are capable of achieving. At the conceptual level, this discontinuous technological innovation forces us to rethink the fundamental elements of the human communication process, and the outcomes that campaign planners hope to achieve. What we might call “first-order” SNS health communication campaigns treat SNSs as the equivalent of “bulletin boards” on which information can be displayed and hopefully encountered by users. There is not much evidence of people sharing such information with a wider audience, because key

features of SNSs as a health communication campaign vehicle are underutilized. In contrast, “second-order” SNS campaigns are planned in ways that promote message forwarding (e.g., Goldstein et al., 2013; Nguyen et al., 2013), expanding the reach of a campaign by capitalizing on the unique features of SNSs (e.g., Norman & Yip, 2012; Townsend, 2014; Young et al., 2014). Achieving exposure, attention or learning is still important, but triggering widespread public engagement is an equally important benchmark of success in contemporary SNS health communication campaigns.

The present article provides a review of the use of SNSs in health communication campaigns. Reflecting the discontinuous nature of the SNS revolution, we offer an alternative analytical perspective to the traditional linear model of communication, which so often has served as the familiar framework for organizing and analyzing scholarly literature about campaigns (e.g., Source-Message-Channel-Receiver-Destination). In essence, we believe that the most revolutionary features of the use of SNSs in health communication campaigns are, first, the dualism between source and receiver, and, second, the dualism between message and impact. We will elaborate on this point in the sections that follow, as we review studies of health communication campaigns that have incorporated SNSs into their design and execution, with varying degrees of effectiveness.

Organization of This Review

By the term, “social networking sites” (SNSs), we are drawing on boyd and Ellison’s (2008) conceptualization by referring to “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (p. 211). This conceptualization would thus include websites and applications such as Facebook, Twitter, LinkedIn, Pinterest, and Instagram, each of which incorporates explicit representations of one’s social network. These

criteria exclude platforms such as blogs, wikis, or YouTube, which are less focused on one's own social networks. However, individuals often re-post, link to, or embed messages or images from these less network-centric social media into their SNS postings, thereby creating hybrids that fit the focus of this review.

Our review considers research reports of health communication campaigns in which SNSs, as defined above, were used as either the central vehicle of information delivery or as a complementary vehicle in conjunction with other campaign channels and approaches. To generate the literature for this review, we used all ProQuest databases in November, 2015 and conducted advanced searches using three keywords – health campaign, health intervention, and health promotion – and the five most popular SNSs in the United States: Facebook, LinkedIn, Pinterest, Instagram, and Twitter (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015). This approach generated fifteen groups of combined keywords used for our search, such as “health campaign and Facebook” and “health intervention and Twitter.” We defined the searching conditions as including the terms, “health campaign/intervention/promotion,” anywhere in an article, and “Facebook, LinkedIn, Pinterest, Instagram, or Twitter” in the abstract of an article. We limited our search to articles written in English and published in scholarly journals. This search generated 216 articles in total, of which 155 remained after manually removing duplicates. We also eliminated studies that used SNSs solely as a tool to recruit participants, studies that evaluated offline health campaigns using information on SNSs, and review articles about SNSs. This approach yielded a final collection of forty articles that served as the basis for this review. Some of the articles analyzed campaigns, some reported campaign evaluations, and some described research protocols. Table 1 presents an inventory of the articles, a description of campaign and/or research objectives and SNSs employed.

Our review is organized in terms of four concepts central to research on traditional campaigns that we believe are most affected by the innovative nature of SNSs – source, receiver, message, and impact – taking into consideration the above-mentioned dualism between source and receiver, and between message and impact.

Table 1 about here

The Evolving Notions of “Source” and “Receiver”

Several layers of source may exist for a SNS message: visible sources (those who are seen by the receiver to be delivering the message), technological sources (the platform on which the content is presented), and receiver-sources (the online users themselves; Sundar & Nass, 2001). In the context of health campaigns on SNSs, a visible source might be a health organization (e.g., Harris et al., 2014a; Torre, Miccoli, & Ricciardi, 2014) or a health professional (e.g., Marshall, Miller, Graves, Barnett, & Fjeldsoe, 2013; Turner-McGrievy, Davidson, Wingard, & Billings, 2014), while a technological source might be Facebook (e.g., Chang, Lin, Lin, Chang, & Chong, 2014) or Twitter (e.g., Turner-McGrievy & Tate, 2014). After exposure to the original message on SNSs, audience members may click “Like,” post their comments, or share the link with others to become receiver-sources. This layering process is public and involves one-to-many communication, rather than being private and involving one-to-one communication as was often the case under the traditional Katz’s (1957) “two-step-flow” model. Receiver-sources amplify the original message with or without add-on information through their networks in a way that is observable to other SNS users and with a potential reach that is unprecedented.

However, this amplification of reach comes with a cost: once a message enters a cyber network, the original source loses control over the message’s contents. For example, in

an electronic cigarette SNS campaign, the Chicago Department of Public Health (CDPH) invited people to talk about e-cigarettes on Twitter and intended to promote support for local regulation of electronic cigarettes as tobacco products. CDPH first sent some tweets like, “#ECigs look like, are labeled & contain nicotine like cigarettes. They should be regulated as such. Let's talk about it! #ecigtruths.” Soon after that, people did talk about it by tweeting back, but many of them attacked the CDPH instead of talking about the e-cigarettes, such as, “@ChiPublicHealth You can't be that stupid. Typical Chicago corruption. Who owns you?” and “@ChiPublicHealth are a bunch of IGNORANT LIARS” (Harris et al., 2014a). These Twitter users become receiver-sources for subsequent readers who follow CDPH or search information about #ECigs or #ecigtruths on Twitter.

Some SNS health campaigns do not differentiate between “visible sources” and “technological sources” (e.g., Apatu, Alperin, Miner, & Wiljer, 2013; Mackert, Kim, Guadagno, & Donovan-Kicken, 2012; Smyser, Novotny, Dayan, & Rodwell, 2014). For instance, in a campaign promoting a multivitamin habit, campaign designers created a Twitter account named “@multi_vitamins” to disseminate messages such as “*Stay naturally beautiful with a multivitamin*” and “*To live well you need to stay well. Boost your quality of life with multivitamins*” (Mackert et al., 2012). Audiences, however, had no sense of who the visible source was from the account name or the health-promotion messages. Research on traditional campaigns would suggest that this practice of abandoning visible sources reduces message persuasiveness (Rogers & Storey, 1987). However, given that almost everyone can post a message and be a source on SNSs, SNS audiences may rely less on the attributes of visible sources to evaluate information. For instance, some researchers have found that, when reading health information online, audience's perceptions of message quality were not subject to the attributes of visible source (Bates, Romani, Ahmed, & Hopson, 2006).

Activating Receiver-Sources Through Public Engagement

One major function of SNSs is to help users initiate, maintain, and re-establish relationships (Bryant, Marmo, & Ramirez, 2011). To take advantage of this unique function of SNSs, some health campaign designers set out to encourage communication among their audiences on SNSs, which is expected to stimulate favorable changes (e.g., Merchant et al., 2014; Turner-McGrievy et al., 2014; Turner-McGrievy & Tate, 2011; Young & Jaganath, 2013). In these campaigns, interactive communication among individuals — rather than a linear flow from source to receiver — becomes the major format of information dissemination. When it works, every receiver simultaneously becomes a source.

For instance, Turner-McGrievy and Tate (2011) instructed research participants who were overweight to log on Twitter to join a weight loss program and communicate with other participants. Results showed that the participants were more likely to report online sources such as Twitter, Facebook and blogs as a source of social support than their counterparts who only used podcasts during their weight loss efforts. Another Facebook campaign, which promoted HIV prevention for men who have sex with men (Young & Jaganath, 2013), first recruited and trained peer leaders. During the subsequent intervention, participants and their peer leaders communicated within a closed Facebook group. The researchers found that participants shared a variety of topics on HIV/AIDS with each other, such as HIV knowledge, prevention, and testing, in these discussion groups on Facebook.

Although the current SNS health campaign literature has taken communication among receiver-sources into consideration, the underlying mechanism of such interaction remains less well understood. For example, to whom do people turn for information and advice in SNS health campaigns? Scholars have found that, among all Twitter users who tweeted childhood obesity in June 2013, user attributes, user structural position, and homophily were all positively associated with if the user has being followed by others (Harris, Moreland-

Russell, Tabak, Ruhr, & Maier, 2014b). However, since it was a cross-sectional analysis, the nature of causality cannot be determined.

Future research using longitudinal data is needed to explore the factors that lead “traditional receivers” to communicate interactively and to become sources for each other during a SNS health campaign. In doing so, it is also important to explore how this interchange among these sources/receivers alters individuals’ perceptions of a campaign message and its impact.

The Dualism Between Message and Impact

In the same way that traditional lines of distinction between information *source* and *receiver* are challenged by SNSs, traditional ways of thinking about *message* and *impact* have been altered as well. Once a health communication campaign designer releases a message into a SNS network, the *expectation* is that the original message will be liked, disliked, forwarded, embellished and/or countered to some degree in a way that the original sender can no longer control. The *hope* is often that the original message will go viral as a result of the activity of receiver-sources who change or add content, and serve the campaign planner’s purpose in the process. The *interpretation* is that all of these activities reflect and promote engagement with and visibility of a health issue in a way that is difficult to achieve through the use of traditional campaign strategies and channels. In this manner, the degree of message forwarding and modification by receiver-sources becomes a metric to assess SNS campaign impacts.

The Notion of Message in SNS Campaigns

The nature of SNS messages is more complex than the content of traditional health communication messages. SNSs include cues (such as “Likes” or number of audience views) that appear adjacent to the original campaign messages. Furthermore, the message cues and elaborations added by receiver-sources are public and enduring—meaning that they can be

inventoried and studied—unlike in most traditional health communication campaigns in which the two-step flow of information was ephemeral.

As with traditional health campaigns, SNS campaign designers still use messages to promote awareness (e.g., Platt, Platt, Thiel, & Kardia, 2013), instruction (e.g., James, Albrecht, Litchfield, & Weishaar, 2013), and persuasion (e.g., Mackert et al., 2012). However, studies of SNS campaigns rarely specify the incentive appeals, evidence, or content employed in the campaign to the same degree as is done with traditional health communication campaigns. Further, investigations of different SNS message elements and their respective effects are rare.

Moreover, messages in SNS health campaigns need to be investigated in a more multifaceted fashion. Since SNSs alter the social context of campaign messages, the social cues attached to the messages must be taken into consideration. The social cues refer to system- and user-generated cues on SNSs, such as the number of followers on Twitter and the number of “Likes” on Facebook. The number of Facebook friends can influence perceived social attractiveness (Tong, Van Der Heide, Langwell, & Walther, 2008) and extraversion (Antheunis & Schouten, 2011) of the target person. The number of Twitter followers can influence perceived expertise and trustworthiness (Westerman, Spence, & Van Der Heide, 2012) of the Twitter user. Whether the tweet has been re-tweeted can influence perceived content credibility (Morris, Counts, Roseway, Hoff, & Schwarz, 2012). In all of these cases, message cues added by the SNS systems or receiver-sources are forms of impact that, in turn, affect their further propagation.

Recent research has started to explore how message style and valence affect audiences in a SNS environment with certain social cues attached. Jin, Phua, and Lee (2015) investigated the independent and joint effects of message style, message valence, and Facebook page popularity on young females’ pro-breastfeeding attitudes and future

breastfeeding intentions. In the experiment, a Facebook page's popularity was operationalized as the total number (large versus small) of people who "like", "talk about", and "share" the Facebook page, and the number of people who "like" each comment on the page. Results showed that these social cues on Facebook shaped audiences' perceptions and judgments, and this effect interacted with message style as well. These findings demonstrate how influential social cues could be in a SNS environment. Future research can examine social cues on SNS in a more nuanced fashion, for example, investigating the effect of social cues attached to a message itself (e.g., how many "Likes" a message receives) and its potential interactions with message style, appeals, or framing.

Although current research on SNS health campaigns has paid some attention to audience-generated messages, most has focused on supportive messages. For example, Turner-McGrievy and Tate (2013) investigated the types of social support messages reflected in tweets from audiences in their weight-loss campaign on Twitter. They found that informational support messages were the most prevalent compared with emotional, network, esteem, and tangible support messages. Some other SNS campaigns (e.g., Syred, Naidoo, Woodhall, & Baraitser, 2014; Young & Jaganath, 2013) recruited interpersonal influencers to supervise and facilitate communication among target audiences in Facebook communities. Young and Jaganath (2013) found that audiences shared HIV knowledge and friendly comments in a closed Facebook group; they concluded that the online community was a feasible and acceptable platform for HIV prevention. However, Syred et al. (2014) concluded that a Facebook community page did not provide a self-sustaining conversation. Besides expressing positive attitudes toward chlamydia testing online, users expressed disagreement, uncertainties, and harmful messages as well. Similarly, such disagreements and counterarguments have been documented in some other SNS health campaigns as well (e.g., Harris et al., 2014a; Hefler, Freeman & Chapman, 2013). Therefore, it is worth noting that

the nature of user-generated messages in SNS campaigns may be not only positive and supportive, but also negative and derisive that questions the campaign effort.

In fact, most of the time, the messages designed by campaign designers and adjacent messages posted by receiver-sources are presented to target audiences at the same time. Some computer-mediated communication research has found that this co-presence on the Web 2.0 environment modified the effects of the main messages. For instance, Walther and his colleagues (2010) found that individuals' identification with commenters, along with the user-generated comments, interactively affected evaluations and attitudes. The participants who identified more with commenters were more susceptible to commenters' positive or negative comments about an anti-marijuana public service announcement on YouTube. Hence, in the domain of SNS health campaigns, future research is warranted on what target audiences have said during the campaign and also how the information from audiences interacts and the messages from campaign designers interact to influence individuals.

Messages and Impact Metrics

Commensurate with the use of SNSs in health communication campaigns, some novel methods of measuring campaign impacts have emerged, especially those in which messages serve as proxies for impact. First, social cues or digital footprints left by campaign audiences have become common indicators of campaigns' reach and awareness. For example, the number of campaign Facebook page visits (Platt et al., 2013), number of "Likes" on Facebook (Dixon-Gray, Mobley, McFarlane, & Rosenberg, 2013; Friedman et al., 2014), and Twitter impressions (Barragan et al., 2014) have functioned as measures of impact. However, no inferences can be made about the adequacy of these measures with regard to whether personal or social change has occurred as the result of exposure to a health communication campaign.

In contrast, storage and retrieval of communication on electronic media may enable researchers to assess impact by analyzing audience-generated messages during health communication campaigns. User-generated content on SNSs might provide a more objective and accurate measure of changes than using self-reported data or SNS-generated footprints. The retrieval of information on SNSs, along with data mining techniques, make longitudinal analyses of a huge amount of audience-generated messages possible in a way that was not possible in traditional health communication campaigns.

One recent study has adopted such an approach to understand the impacts of a SNS health campaign (Dumbrell & Steele, 2015). The researchers examined over 163 million tweets with #worldhealthday posted during 2014 World Health Day SNS campaign. They illustrated hourly changing patterns of the number of tweets, contributors, and the audience engagement, and identified popular Twitter accounts and content during the campaign. While their results showed numerous organizations and individuals involved in the campaign to improve public health awareness, neither cognitive nor attitudinal outcomes have been assessed. Alternatively, Emery and colleagues (2014) evaluated the impact of an offline tobacco control campaign using user-generated messages on Twitter and analyzed 1,400 tweets relevant to the campaign. They found that 87% of the relevant tweets indicated message acceptance. Despite that Emery et al. (2014) studied an offline campaign, their approach will be beneficial for future SNS health campaign evaluation. Furthermore, researchers may investigate audience-generated messages relevant to the campaign topic before, during, and after SNS health campaigns to assess a campaign's impact. In this case, audience-generated messages are no longer only a component of campaign messages, but also indices with which to assess campaign effects.

Besides analyzing social cues and the content of audience-generated messages on SNSs, researchers may also examine relational outcomes of SNS health campaigns, which

emerged from audience-generated communication, and their association with other cognitive and behavior outcomes. Social interactions among individuals are hard to observe and record offline, but these interactions are readily observable on SNSs. Young and colleagues (2014) used social network analysis to study the interactions in a Facebook group between men who have sex with men. They estimated the increased social network ties each participant developed with their peers during the health intervention and investigated the association between the change in ties and behavioral outcomes, namely, discussing HIV topics and taking HIV testing. Through this exploration, they found a positive impact of increased social connections with peers on HIV prevention and testing behavior.

Examining unintended, and primarily undesirable, effects of health campaigns (Cho & Salmon, 2007; Salmon, 1992; Salmon & Murray-Johnson, 2013) is also worthwhile, though little research to date has looked into this issue in SNS health campaigns. Compared to traditional media health campaigns in which unintended effects mainly come from campaign messages (e.g., fear appeal messages), user-generated content added by layers of receiver-sources might be a new major source of unintended effects on SNSs. For instance, Turner-McGrievy and Tate (2013) noted that the frequency of Twitter participation decreased during their weight loss campaign on Twitter, and participants who used Twitter less frequent experienced a smaller percentage of weight loss. A plausible explanation could be that successful stories from peers created some social comparison effects thereby discouraging those individuals who were initially slow to adopt new healthy behaviors. Such possible unintended effects in SNS health campaigns need more attention and further examination.

Conclusion

Based on our reading of the literature on health communication campaigns which have relied on SNSs to varying degrees, we offer the following conclusions and recommendations which may be of value to future campaign designers and researchers

- Research is needed on the relative impact of layers of sources in SNS health messages. A health organization running the campaign, a person featured in a health message, and a friend who recommends that campaign message may independently influence or interact to influence message impact. Research is also needed to identify dimensions of receiver-sources that will potentially affect other receivers' message selection and evaluation.
- The notion of "message" has not received sufficient attention in the current research on SNS health campaigns. Researchers generally have not provided much detail about the content of health messages used in their campaigns. Comments and other user-generated messages from receiver-sources and messages created by campaign designers have sometimes been examined separately from each other. Research is needed to examine the effect of different incentive appeals, evidence, and content of messages, as well as its interaction with adjacent social cues and audience-generated messages on SNSs.
- The topic of SNS health campaigns would appear to be a particularly fertile landscape in which to study unintended effects that are positive as well as negative. When conducting SNS health campaigns, there is a trade-off between reach and control. In the process of forwarding and re-tweeting campaign messages, audiences generate various kinds of reactions and comments (e.g., Dumbrell & Steele, 2015; Goldstein et al., 2013). Campaign designers have no control of these add-on messages. Derisive comments from receiver-sources can undermine positive effects (e.g., Syred et al., 2014), whereas positive comments can unexpectedly amplify positive effects (e.g., Hefler et al., 2013).
- Many campaign designers have chosen to use SNSs because they believed SNS users were mostly young adults (e.g., Gamage et al., 2011; Mackert et al., 2012). However,

age may no longer be a deterministic segmentation variable now that older persons are increasingly using SNSs (Duggan et al., 2015; Pew Research Center, 2015). More salient than age is position in a network and relationship with others in a network (e.g., how strong their ties are and whether they are influencees or influentials) when making decisions whether and how to use SNS to promote health.

- Health campaign designers may presume that SNSs can reach a large number of audiences and have more impact than the traditional media. However, no evidence has been found to show that for the same topic and audiences, a health campaign delivered via SNSs elicits more desirable changes than that delivered via traditional media. Some of the studies reviewed have only offered evidence linking exposure to health campaigns on SNSs with desirable health behaviors. However, it could be that individuals who were persuaded by those campaigns were already inclined to accept the health message.
- Indeed, several studies have reported null effects of SNS health communication campaigns, demonstrating that the mere use of SNSs does not guarantee campaign effectiveness (e.g., Cavallo et al., 2012; Mackert et al., 2012; Turner-McGrievy & Tate, 2011). For studies conducted in an experimental setting, reach was not a problem, mainly because participants were instructed to visit SNSs and read the messages posted. But beyond reach, other effects were either non-existent or limited in several cases.
- Campaign evaluators have employed a wide assortment of measures in assessing SNS impact, including: self-reported health behaviors (e.g., Jones, Baldwin, & Lewis, 2012; Nguyen et al., 2013); measured health behaviors (e.g., Friedman et al., 2014; Kernot, Olds, Lewis, & Maher, 2013); and varying types of social media analytics (e.g., James et al., 2013; Zaidan et al., 2015). Many of the campaigns reported the

number of “Likes” and re-tweets as a performance indicator (e.g., Dixon-Gray et al., 2013; Mackert et al., 2012). Drawing meaningful generalizations about campaign efficacy will be challenging without consensus on a standard inventory of metrics for evaluating SNS health communication campaigns.

- As with all research, care should be exercised in making generalizations about the use and potential impact of SNSs from empirical studies with different procedures and goals. In some studies, for example, participants were “given” SNS content, “instructed” to use SNS content, or “invited” to use SNS content. These different conditions have implications for internal and external validity as well as for drawing conclusions about the potential of SNSs to effect change outside the confines of a controlled, scientific experiment.

Clearly SNSs have great potential to alter the way in which health communicators approach the design and implementation of campaigns. However, much campaign experimentation and communication research needs to be done before we can say, with confidence and on the basis of evidence, “what works and why.”

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Table 1

A Summary of the 40 SNS Health Campaigns.

	Study	Objective	SNSs Used
1	Turner-McGrievy & Tate, 2011	To conduct and evaluate an intervention for weight loss among overweight individuals through podcasting, mobile support communication, and mobile diet monitoring applications.	Twitter
2	Gamage et al., 2011	To conduct and evaluate a campaign promoting a screening service to detect sexually transmissible infections in youths.	Facebook
3	Norman & Yip, 2012	To engage youth by smartphones and social networking platforms in health promotion and public health.	Twitter
4	Bull, Levine, Black, Schmiede, & Santelli, 2012	To conduct and evaluate a campaign to prevent sexually transmitted infections and sexual risk behavior.	Facebook
5	Jaganath, Gill, Cohen, & Young, 2012*	To develop a curriculum to train peer leaders for a HIV intervention for men who have sex with men.	Facebook
6	Jones, Baldwin, & Lewis, 2012	To implement and evaluate an intervention aimed at reducing chlamydia among adolescents and young adults.	Facebook
7	Cavallo et al., 2012	To conduct and evaluate an intervention to promote physical activity for female undergraduate students.	Facebook
8	Mackert, Kim, Guadagno, & Donovan-Kicken, 2012	To conduct and evaluate a campaign promoting multivitamin habits for young women.	Twitter

	Study	Objective	SNSs Used
9	Hefler, Freeman, & Chapman, 2013	To evaluate several tobacco control campaigns.	Facebook Twitter
10	Platt, Platt, Thiel, & Kardia, 2013	To conduct and evaluate a campaign aiming to make people aware that the state is storing dried blood spots in its biobank.	Twitter
11	Dixon-Gray, Mobley, McFarlane, & Rosenberg, 2013	To conduct and evaluate a campaign to increase pre-conception family planning knowledge among young people.	Facebook
12	Kernot, Olds, Lewis, & Maher, 2013*	To design an intervention promoting physical activity for post-partum women.	Facebook MySpace
13	Nguyen et al., 2013	To evaluate a campaign promoting sexual health for young people.	Facebook Twitter
14	Pedrana et al., 2013	To conduct and evaluate a sexual health promotion for gay men.	Facebook
15	Marshall, Miller, Graves, Barnett, & Fjeldsoe, 2013*	To conduct and evaluate a physical activity intervention for mothers with young children.	Facebook
16	Apatu, Alperin, Miner, & Wiljer, 2013	To conduct and evaluate driving safety campaigns among young adults.	Facebook
17	Young & Jaganath, 2013	To conduct and evaluate a campaign to promote HIV discussions and HIV prevention behavior among men who have sex with men.	Facebook
18	James, Albrecht, Litchfield, & Weishaar, 2013	To conduct and evaluate a traditional and social media food safety social marketing program.	Facebook
19	Goldstein et al., 2013	To evaluate a campaign promoting kidney disease education.	Facebook Twitter

	Study	Objective	SNSs Used
20	Turner-McGrievy & Tate, 2013	To conduct and evaluate a weight loss intervention among obese and overweight individuals.	Facebook Twitter
21	Young & Jaganath, 2014	To conduct and evaluate an HIV intervention for men who have sex with men.	Facebook
22	Chang, Lin, Lin, Chang, & Chong, 2014	To conduct and evaluate an intervention promoting positive psychological development among college students.	Twitter
23	Matthews, Zok, Quenneville, & Dworatzek, 2014	To conduct a peer nutrition education campaign to promote healthy nutrition behaviors among university students.	Facebook
24	Syred, Naidoo, Woodhall, & Baraitser, 2014	To evaluate a campaign promoting discussion about chlamydia and acceptance of chlamydia testing.	Facebook
25	Barragan et al., 2014	To conduct and evaluate a campaign to reduce sugar intake.	Facebook
26	Friedman et al., 2014	To evaluate a campaign that aims to reduce STD stigma and increase the likelihood of STD testing among youth.	Facebook Twitter
27	Turner-McGrievy, Davidson, Wingard, & Billings, 2014	To conduct and evaluate the feasibility of an intervention promoting low glycemic index and vegan or low-calorie diets among women experiencing infertility.	Facebook Twitter
28	Turner-McGrievy & Tate, 2014	To conduct a weight loss intervention and compare the use of mobile and non-mobile devices in influencing engagement and weight loss in overweight adults.	Facebook Twitter
29	Hales, Davidson, & Turner-McGrievy, 2014	To conduct and evaluate a campaign prompting weight loss with various types of posts.	Facebook

	Study	Objective	SNSs Used
30	Harris et al., 2014a	To evaluate the Chicago Department of Public Health's electronic cigarette campaign.	Twitter
31	Smyser, Novotny, Dayan, & Rodwell, 2014	To conduct and evaluate a tobacco control campaign on Facebook and Twitter.	Facebook Twitter
32	Torre, Miccoli, & Ricciardi, 2014	To evaluate a campaign that aims to improve the awareness of vaccination.	Facebook
33	Young et al., 2014	To conduct and evaluate an HIV prevention intervention targeting men who have sex with men.	Facebook
34	Patrick et al., 2014	To implement and evaluate a weight control intervention for young adults deployed via the Internet, SNSs and mobile media.	Facebook
35	Merchant et al., 2014	To conduct and evaluate a weight loss intervention to overweight and obese college students.	Facebook
36	Dumbrell & Steele, 2015	To evaluate the world health campaign in 2014.	Twitter
37	Jane, Foster, Hagger, & Pal, 2015*	To conduct and evaluate a campaign promoting a weight management program.	Facebook
38	Lister et al., 2015	To conduct and evaluate a campaign promoting healthy family meals.	Facebook Twitter
39	Jawad, Abass, Hariri, & Akl, 2015	To conduct and evaluate a campaign aiming to improve the awareness about dangers of waterpipe smoking.	Facebook Twitter
40	Zaidan et al., 2015	To conduct and evaluate a campaign for health promotion and educational health services.	Facebook

Note. *This is a research protocol, which proposes a health campaign but has yet to conduct it.