

HEALTH-RELATED USES AND GRATIFICATIONS OF YOUTUBE

The Health-Related Uses and Gratifications of YouTube:
Motive, Cognitive Involvement, Online Activity, and Sense of Empowerment

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Abstract: To better understand the utility of YouTube as a health communication medium, this study utilizes Uses and Gratifications Theory to examine a relationship among motives for health-related YouTube use, cognitive involvement with health information on YouTube, post-exposure online activity, and health-related sense of empowerment. Surveys were analyzed from 263 participants who reported using YouTube for health-related reasons. Results revealed specific motives for health-related YouTube use and a significant relationship among the variables. Implications for how health care professionals could use YouTube for communicating with users about health-related topics and empowering them in health care are discussed.

Keywords: YouTube, Uses and Gratifications Theory, motive, cognitive involvement, online activity, health-related sense of empowerment

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Understanding how people acquire and utilize health-related information has long been recognized as important in health communication (e.g., Anker, Reinhart, and Feeley 2011; Brashers, Goldsmith, and Hsieh 2002). A common theme in this growing body of literature is the important role the Internet plays for many people in their search for health-related information. 2009 and 2013 Pew Research Center reports indicate that online health information seeking has become increasingly popular in the United States (Fox and Dugan 2013). According to a 2013 report, 72% of adult Internet users report using the Internet for health information (Fox and Duggan 2013). Even among older adults, between the ages of 50 and 92, nearly 50% report accessing health information online (Hall, Bernhardt, and Dodd 2015). Because online health information is so widely used, it is vital to understand the motives and applications of that use. The more we know about why and how people utilize digital health information, the better equipped we will be to communicate in ways that promote health and wellness.

This study focuses on one aspect of online health information: the rapidly growing increase in the use of social media for health purposes (Moorhead et al. 2013). Ventola (2014) reports that 74% of the people who use the Internet to search for health information are social media users, and Honigman (2013) reports that 40% of consumers agree that information accessed through social media affects their decision making related to health. The increasing popularity of health-related social media is not surprising, because social media extend to users the opportunity to directly participate in health communication by sharing their own experiences, emotions, or advice on a specific disease or its treatment with others (Antheunis, Tates, and Nieboer 2013; Househ, Borycki, and Kushniruk 2014), thereby facilitating their coping with health-related concerns. However, relatively little research has examined in depth the reasons why individuals turn to social media for health information, what they feel they get from that

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information, and what they do with that information. This study seeks to answer those questions related to one particular social media: YouTube. Existing research has established the functionality of YouTube in providing social support (e.g., Frohlich and Zmyslinski-Seelig 2012; Naslund et al. 2014) and disseminating information about specific diseases or health procedures (Briones et al. 2012; Hayes et al. 2014; Strychowsky et al. 2013; Tian 2010). However, relatively little research has examined in depth the reasons why individuals turn to YouTube for health information.

Through application of the Uses and Gratifications framework (Katz, Blumler, and Gurevitch 1973), this study examined what motivates users to utilize YouTube for health-related reasons, how users process health information on YouTube, and whether users feel a sense of empowerment related to health and wellness as a result of health-related YouTube use. This study focused specifically on college students. College students reflect an appropriate demographic for this study as 2011 and 2013 Pew Research Center reports indicate that the majority of Internet users aged 18 to 29 and with a college-level education search for health information online (Fox and Duggan 2013) and use an online video-sharing website such as YouTube (Moore 2011).

Literature Review

Uses and Gratifications

Uses and Gratifications is a logical theoretical foundation for this study because it provides a useful framework for examining why and how people gratify their particular wants through specific media use. The theory focuses on three components: the motive for media use, audience activity such as involvement, and result of media use such as satisfaction. Relevant literature related to each of these three constructs is briefly reviewed in the following sections.

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Motive

Within Uses and Gratifications Theory (Kim and Rubin 1997; Rubin 1984), motives for media use are classified as instrumental, which are goal-directed and active, or ritualized, which are less purposive and inactive. Using a particular medium to actively search for information on a specific topic illustrates instrumental motive, while happening upon information while passing time on the medium exemplifies ritualized motive (Kim and Rubin 1997). Researchers have identified the motives associated with a wide range of media outlets, including newspaper (Elliott and Rosenberg 1987), television (Godlewski and Perse 2010; Perse 1990b; Perse and Rubin 1988; Rubin 1981, 1983), the Internet (Papacharissi and Rubin 2000), and social media (Hanson et al. 2010; Whiting and Williams 2013).

One study specifically focuses on the motives for YouTube use. Hanson and Haridakis (2008) report that the motives for college students' use of YouTube include the instrumental motives of leisure entertainment, interpersonal expression, and information-seeking and the ritualized motive of companionship. While Hanson and Haridakis's research provides insight into general motives for YouTube use, it does not focus specifically on health-related uses. Antheunis, Tates, and Nieboer (2013) examined the motives for health-related social media use including YouTube among health professionals. Specifically, they found that health professionals in obstetrics and gynecology in the Netherlands use YouTube to gratify the instrumental needs of increasing health-related knowledge, doctor-patient communication, marketing, and communication with colleagues. Little research has been conducted regarding the motives behind health-related YouTube use among nonprofessionals. Thus, the following research question is proffered:

RQ1: What are the motives for health-related YouTube use by non-health professionals?

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Involvement

Within Uses and Gratifications Theory, involvement is an audience activity that represents interaction with the media content (Levy and Windahl 1985) and its users (Rubin and Perse 1987). Involvement can be cognitive, which includes elaboration, the degree to which people think about how much the media content is relevant to the things they used to know or how much the media content is meaningful to them and their family (Perse 1990b), or it can be behavioral, which includes seeking more gratification through additional media use or by discussing the media content with others (Rubin and Perse 1987). Online behavioral involvement can include post-exposure online activity such as chatting with others online to seek and share more information about the media content (Godlewski and Perse 2010).

Existing research has indicated that the specific motives for media use are related to involvement (Godlewski and Perse 2010; Kim and Rubin 1997; Rubin and Perse 1987). However, few studies have examined this relationship specifically related to YouTube use, and those who did (i.e., Hanson and Haridakis 2008; Hansen, Lee, and Lee 2014) were not focusing on health-related YouTube use. Therefore, the following research questions are proffered to identify the specific motives for health-related YouTube use that are associated with cognitive involvement/elaboration and which are associated with behavioral involvement/post-exposure online activity:

RQ2: What specific motives for health-related YouTube use are related to cognitive involvement with health information on YouTube?

RQ3: What specific motives for health-related YouTube use are related to post-exposure online activity?

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Satisfaction

The final component of the Uses and Gratifications model is the result of media use such as satisfaction, which refers to “the gratification of needs and confirmation of expectations” (Kim and Rubin 1997, 114). Existing research has indicated that instrumental motives for media use and involvement are related to satisfaction with media use (Godlewski and Perse 2010; Kim and Rubin 1997; Papacharissi and Rubin 2000; Perse and Rubin 1988). However, little research has been conducted about the relationship among motives for health-related YouTube use, cognitive involvement with health information on YouTube, post-exposure online activity, and satisfaction with health-related YouTube use.

This study operationalized satisfaction with health-related YouTube use as feeling a sense of empowerment regarding health and wellness as a result of media use. According to Menon (2002), health-related sense of empowerment includes the three dimensions: perceived control, perceived competence, and goal internalization. People experience perceived control when they feel they have enough resources (e.g., access, time, finances, and support) to attain the health care they need. They experience perceived competence when they feel they are knowledgeable about and capable of maintaining good health (e.g., able to manage health care-related procedures, including paperwork associated with health care). Finally, people experience goal internalization when they become enthusiastic about health care and are inspired by the goals of good health care (Menon 2002).

Existing research has indicated that people can achieve a health-related sense of empowerment by visiting and participating in health-related online communities (Oh and Lee 2012) or online support groups (van Uden-Kraan et al. 2008). These findings suggest that the more involved people with health-related concerns are with online health resources, the more

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likely they are to feel empowered in health care. However, no research has examined this relationship specifically in terms of YouTube use. Thus, the following research question is offered:

RQ4: What factors (motives for health-related YouTube use, cognitive involvement with health information on YouTube, and post-exposure online activity) are related to a health-related sense of empowerment (perceived control, perceived competence, and goal internalization)?

Method

Sample and Procedures

The sample for this study consisted of 368 college students at a large Midwestern university, the majority of whom were recruited from either face-to-face or online speech communication classes in spring 2015.

Respondents were informed of the purposes of this study and asked to complete a survey questionnaire associated with their experiences of health-related YouTube use. For ease of distribution, students in face-to-face classes were given hard copies of the survey to complete in class, and students in online sections of the course were given an online version of the survey. The survey took approximately 15 minutes to complete and participation was voluntary and confidential. Of 368 completed questionnaires, 263 (71%) were from respondents who have utilized YouTube for health-related reasons (see Table 1 for the demographic profile). This percentage matches the percentage of Internet users who use the internet for health-related information reported by Fox and Duggan (2013). Sample size power calculations were conducted using methods described by Hulley et al. (2013). This analysis confirmed that these

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263 respondents provide an acceptable sample size for data analysis ($n = 259$ when two-tailed $\alpha = 0.05$, $\beta = 0.10$, and $r = 0.20$).

Measurements

Motives for health-related YouTube use. Motives for health-related YouTube use were measured using items adapted from previous research that identified the motives for YouTube use (Hanson and Haridakis 2008), health-related online forum use (Tanis 2008), watching television (Rubin 1981, 1983), interpersonal communication (Rubin, Perse, and Barbato 1988), and the Internet use (Papacharissi and Rubin 2000). On a 5-point Likert-type scale (from 1 = *strongly disagree* to 5 = *strongly agree*), respondents marked their agreement on 50 items associated with their reasons for using YouTube (e.g., “To get information for free”) for diverse health-related topics (e.g., specific disease, treatment, health insurance, food or drug safety, caregiving). Topic selection was based on the 2013 Pew Research Center’s report (Fox and Duggan 2013) on the list of health-related topics frequently searched online.

Cognitive involvement. Cognitive involvement with health information on YouTube was measured using items adapted from four-item version of the cognitive elaboration scale (Perse 1990a). On a 5-point Likert-type scale (from 1 = *strongly disagree* to 5 = *strongly agree*), respondents reported the degree to which they elaborated upon health information on YouTube by marking their agreement on 4 items such as “When I watched, I thought about what the health-related content meant to me and my family.” For data analysis, item scores were summated and averaged to create a cognitive involvement scale that ranged from 1.00 to 5.00 ($\bar{x} = 3.36$, $s = 0.81$). Cronbach’s alpha reliability for the scale modified for this study was .84 that reflects an acceptable internal consistency.

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Post-exposure online activity. Post-exposure online activity was measured using items adapted from Godlewski and Perse's (2010) study. On a 5-point Likert-type scale (from 1 = *strongly disagree* to 5 = *strongly agree*), respondents reported the degree to which they participated in online activities regarding health information on YouTube by marking their agreement on 8 items such as "I went online to chat with people who have the same interest in the health-related content I watched on YouTube." For data analysis, item scores were summated and averaged to create a post-exposure online activity scale that ranged from 1.00 to 4.50 ($\bar{x} = 2.62, s = 0.71$). Cronbach's alpha reliability for the scale modified for this study was .84 that reflects an acceptable internal consistency.

Sense of empowerment. Health-related sense of empowerment was measured using items from the psychological health empowerment scale (Menon 2002). To address perceived control, respondents reported on a 5-point Likert-type scale (from 1 = *strongly disagree* to 5 = *strongly agree*) the degree to which they feel they have enough resources for health care by marking their agreement on 12 items such as "I know I have access to health care when I need it" and "I know I have the power to make decisions concerning my health." For data analysis, item scores were summated and averaged to create a perceived control scale that ranged from 1.08 to 5.00 ($\bar{x} = 3.81, s = 0.60$). Cronbach's alpha reliability for perceived control in this study was .90 that reflects an acceptable internal consistency. To address perceived competence, respondents reported on a 5-point Likert-type scale (from 1 = *strongly disagree* to 5 = *strongly agree*) the degree to which they feel they are well capable of health care by marking their agreement on 14 items such as "I know how to seek specialized medical assistance when needed" and "I can clearly communicate my needs to my doctor and other health service providers." For data analysis, item scores were summated and averaged to create a perceived competence scale that

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ranged from 1.00 to 5.00 ($\bar{x} = 3.91$, $s = 0.59$). Cronbach's alpha reliability for perceived competence in this study was .92 that reflects an acceptable internal consistency. To address goal internalization, respondents reported on a 5-point Likert-type scale (from 1 = *strongly disagree* to 5 = *strongly agree*) the degree to which they feel enthusiastic about or inspired by the goals of good health care by marking their agreement on 8 items such as "I am enthusiastic about my own efforts to maintain good health." For data analysis, item scores were summated and averaged to create a goal internalization scale that ranged from 1.00 to 5.00 ($\bar{x} = 3.99$, $s = 0.57$). Cronbach's alpha reliability for goal internalization in this study was .82 that reflects an acceptable internal consistency.

Control variables. Uses and Gratifications literature has indicated that people could differ in media use and effects depending on their demographics (Godlewski and Perse 2010; Hanson and Haridakis 2008; Hanson et al. 2010). For instance, at the first step of hierarchical multiple regression analysis, Hanson et al. (2010) found that users differed in their levels of political cynicism that is a result of using social media (e.g., YouTube) for the 2008 presidential campaign issues, depending on their age, gender, and education level. Based on existing studies, this study controlled possible effects of users' age, gender, and education level on their health-related YouTube use and effects (i.e., health-related sense of empowerment).

Data Analysis

Exploratory factor analysis was used to identify the motives for health-related YouTube use. Furthermore, Pearson product-moment correlation and hierarchical multiple regression analyses were used to examine the relationship among the variables.

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Results

The data analyses revealed that there are specific motives for health-related YouTube use and a significant relationship among motives for health-related YouTube use, cognitive involvement with health information on YouTube, post-exposure online activity, and the three dimensions of health-related sense of empowerment (see Figure 1).

Motives for Health-Related YouTube Use

Exploratory factor analysis was conducted for RQ1 to identify users' motives for health-related YouTube use. Specifically, principal components analysis with varimax rotation was conducted to extract and interpret the motives. The criteria for a factor to be retained were an eigenvalue of at least 1.00 and at least three items meeting primary loadings of at least .50 with no secondary loadings above .40 (Kim and Rubin 1997). The analysis identified four motives that explained 56.27% of the total variance: social utility motive, convenient information-seeking motive, habit-passing time motive, and exciting entertainment motive (see Table 2).

The first motive for health-related YouTube use, social utility accounted for 34.24% of the total variance and consisted of 17 items related to utilizing YouTube to communicate with people who have the same interest in the health-related topics such as discussing health information on YouTube or exchanging social support for coping with health-related concerns. The second motive, convenient information-seeking accounted for 11.38% of the total variance and consisted of 7 items related to utilizing YouTube because it is easy and free to search for specific health information. The third motive, habit-passing time accounted for 7.31% of the total variance and consisted of 7 items related to looking for health-related content on YouTube to pass time or as a habit. The fourth motive, exciting entertainment accounted for 3.34% of the

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total variance and consisted of 3 items related to looking for health-related content on YouTube because it is exciting, fun, and enjoyable.

For further data analysis for RQ2, RQ3, and RQ4, the scores for items that loaded on each factor (i.e., motive) were summated and averaged to create social utility motive scale that ranged from 1.00 to 4.24 ($\bar{x} = 2.26, s = 0.79, \alpha = .95$), convenient information-seeking motive scale that ranged from 1.00 to 5.00 ($\bar{x} = 3.87, s = 0.74, \alpha = .87$), habit-passing time motive scale that ranged from 1.00 to 5.00 ($\bar{x} = 3.19, s = 0.90, \alpha = .88$), and exciting entertainment motive scale that ranged from 1.00 to 5.00 ($\bar{x} = 3.37, s = 0.93, \alpha = .82$). Cronbach's alpha reliability for each motive for health-related YouTube use reflected an acceptable internal consistency.

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Pearson product-moment correlation and hierarchical multiple regression analyses were conducted for RQ2, RQ3, and RQ4 to examine the relationship among the variables.

RQ2 asked what specific motives for health-related YouTube use are related to cognitive involvement with health information on YouTube. Two-tailed Pearson product-moment correlations revealed the bivariate relationships between motives for health-related YouTube use and cognitive involvement (see Table 3). Furthermore, a hierarchical multiple regression analysis revealed the relevant contribution of motives for health-related YouTube use for explaining cognitive involvement (see Table 4). To explain cognitive involvement, demographic variables (i.e., age, gender, and education level) were entered in the first block as control variables.

Demographic variables were not significant contributors to cognitive involvement: $R = .17, R^2 = .03, F(3, 229) = 2.35, p = .073$. Adding motives for health-related YouTube use in the second block accounted for an additional 35.4% of the variance in cognitive involvement: $R = .62, R^2 = .38, F(7, 225) = 20.03, p < .001$. However, only social utility motive ($\beta = .22, p < .001$) and

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convenient information-seeking motive ($\beta = .54, p < .001$) accounted for any unique variance in cognitive involvement after controlling the demographic variables.

RQ3 asked what specific motives for health-related YouTube use are related to post-exposure online activity. Two-tailed Pearson product-moment correlations revealed the bivariate relationships between motives for health-related YouTube use and post-exposure online activity (see Table 3). Furthermore, a hierarchical multiple regression analysis revealed the relevant contribution of motives for health-related YouTube use for explaining post-exposure online activity (see Table 5). To explain post-exposure online activity, demographic variables were entered in the first block as control variables and accounted for 4.4% of the variance in post-exposure online activity: $R = .20, R^2 = .04, F(3, 225) = 3.42, p < .05$. However, only age ($\beta = .18, p < .05$) accounted for any unique variance in post-exposure online activity. Adding motives for health-related YouTube use in the second block accounted for an additional 42% of the variance in post-exposure online activity: $R = .68, R^2 = .46, F(7, 221) = 27.24, p < .001$. However, only social utility motive ($\beta = .55, p < .001$) and convenient information-seeking motive ($\beta = .11, p < .05$) accounted for any unique variance in post-exposure online activity after controlling for demographic variables. At this stage, age ($\beta = .05, p = .354$) was no longer a significant contributor to post-exposure online activity.

RQ4 asked what factors (i.e., motives for health-related YouTube use, cognitive involvement with health information on YouTube, and post-exposure online activity) are related to the health-related sense of empowerment (i.e., perceived control, perceived competence, and goal internalization). Two-tailed Pearson product-moment correlations revealed the bivariate relationships among motives for health-related YouTube use, cognitive involvement, post-exposure online activity, and the three dimensions of health-related sense of empowerment (see

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Table 3). Furthermore, hierarchical multiple regression analyses revealed the relevant contribution of motives for health-related YouTube use, cognitive involvement, and post-exposure online activity for explaining health-related sense of empowerment (see Table 6).

To explain perceived control, demographic variables were entered in the first block as control variables. Demographic variables were not significant contributors to perceived control: $R = .12$, $R^2 = .01$, $F(3, 221) = 1.12$, $p = .341$. Adding motives for health-related YouTube use in the second block accounted for an additional 5.6% of the variance in perceived control: $R = .26$, $R^2 = .07$, $F(7, 217) = 2.35$, $p < .05$. However, only convenient information-seeking motive ($\beta = .25$, $p < .01$) accounted for any unique variance in perceived control after controlling the demographic variables. Adding cognitive involvement and post-exposure online activity in the third block accounted for an additional 1.9% of the variance in perceived control: $R = .30$, $R^2 = .09$, $F(9, 215) = 2.36$, $p < .05$. However, only cognitive involvement ($\beta = .17$, $p < .05$) accounted for any unique variance in perceived control after controlling the demographic variables and motives for health-related YouTube use. At this stage, convenient information-seeking motive ($\beta = .15$, $p = .074$) was no longer a significant contributor to perceived control. Conclusively, only cognitive involvement was a significant contributor in the final model (see Table 6). To explain perceived competence, demographic variables were entered in the first block as control variables. Demographic variables were not significant contributors to perceived control: $R = .09$, $R^2 = .008$, $F(3, 217) = 0.58$, $p = .626$. Adding motives for health-related YouTube use in the second block accounted for an additional 8.8% of the variance in perceived competence: $R = .31$, $R^2 = .09$, $F(7, 213) = 3.22$, $p < .01$. However, only social utility motive ($\beta = -.24$, $p < .01$) and convenient information-seeking motive ($\beta = .27$, $p < .01$) accounted for any unique variance in perceived competence after controlling the demographic variables. Adding

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cognitive involvement and post-exposure online activity in the third block accounted for an additional 0.1% of the variance in perceived competence: $R = .31$, $R^2 = .09$, $F(9, 211) = 2.52$, $p < .01$. However, neither cognitive involvement ($\beta = .04$, $p = .573$) nor post-exposure online activity ($\beta = -.02$, $p = .758$) was related to perceived competence. Conclusively, only social utility motive and convenient information-seeking motive were significant contributors in the final model (see Table 6). To explain goal internalization, demographic variables were entered in the first block as control variables. Demographic variables were not significant contributors to goal internalization: $R = .07$, $R^2 = .005$, $F(3, 222) = 0.40$, $p = .748$. Adding motives for health-related YouTube use in the second block accounted for an additional 15.5% of the variance in goal internalization: $R = .40$, $R^2 = .16$, $F(7, 218) = 5.93$, $p < .001$. However, only convenient information-seeking motive ($\beta = .34$, $p < .001$), habit-passing time motive ($\beta = -.22$, $p < .01$), and exciting entertainment motive ($\beta = .28$, $p < .001$) accounted for any unique variance in goal internalization after controlling the demographic variables. Adding cognitive involvement and post-exposure online activity in the third block accounted for an additional 0.1% of the variance in goal internalization: $R = .40$, $R^2 = .16$, $F(9, 216) = 4.59$, $p < .001$. However, neither cognitive involvement ($\beta = .02$, $p = .278$) nor post-exposure online activity ($\beta = .01$, $p = .190$) was related to goal internalization. Conclusively, only convenient information-seeking motive, habit-passing time motive, and exciting entertainment motive were significant contributors in the final model (see Table 6).

Discussion

Through application of the Uses and Gratifications framework, this study identified specific motives for health-related YouTube use and a significant relationship among motives, cognitive involvement with health information on YouTube, post-exposure online activity, and

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health-related sense of empowerment. The findings from this study provide a clearer picture of how users differ in their motives for health-related YouTube use, and how different motives lead users to differ in their levels of health-related sense of empowerment.

RQ1 asked what motivates users who are non-health professionals to utilize YouTube for health-related reasons. The factor analysis identified four motives for health-related YouTube use: social utility, convenient information-seeking, habit-passing time, and exciting entertainment motives. These findings confirm the assumption of the Uses and Gratifications Theory that motives for media use are classified as instrumental or ritualized (Kim and Rubin, 1997; Rubin 1984). Social utility, convenient information-seeking, and exciting entertainment represent instrumental/goal-directed motives for health-related YouTube use, whereas habit-passing time represents a ritualized/less purposive motive. Furthermore, the findings expand an existing study on health-related YouTube use by identifying how non-health professional users' motives are similar to (e.g., social utility and information-seeking) or distinct from (e.g., entertainment) health professionals' motives (i.e., communication with patients or colleagues, increasing health-related knowledge, and marketing; Antheunis, Tates, and Nieboer 2013).

RQ2, RQ3, and RQ4 explore the relationship among motives for health-related YouTube use, cognitive involvement with health information on YouTube, post-exposure online activity, and health-related sense of empowerment. The conclusions from this study confirm previous findings within the Uses and Gratifications framework suggesting that instrumental motives for media use and involvement are associated with satisfaction with media use (Godlewski and Perse 2010; Kim and Rubin 1997; Papacharissi and Rubin 2000; Perse and Rubin 1988). Specifically, instrumental motives for health-related YouTube use and involvement were associated with health-related sense of empowerment in that both social utility and convenient information-

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seeking motives were positively related to cognitive involvement, and cognitive involvement was positively related to perceived control. These findings suggest that users who seek health information through YouTube because of the sense of community it provides or because they see it as a convenient source are more likely to be cognitively engaged with or think about that information. In turn, that increased cognitive involvement is associated with the perception that they have control of their health care and are able to acquire health care resources they seek (e.g., access, time, finances, and support). Our results also indicate that individuals who seek health information through YouTube because it is a convenient source (convenient information-seeking motive) are more likely to perceive themselves as competent in terms of health care. Given that a myriad of health information is available on YouTube (Madathil et al. 2015), this finding indicates that users think they can benefit from YouTube by learning how to maintain good health (e.g., healthy lifestyle, paperwork associated with health care) and thereby feeling empowered in health care (i.e., perceived competence).

A final finding in our study that is consistent with the relationship between instrumental motives and satisfaction with media use that has been demonstrated in other Uses and Gratifications studies is the association between both the convenient information-seeking motive and the exciting entertainment motive and goal internalization. These findings indicate an association between users finding health information on YouTube to be easy or enjoyable and their internalization of goals related to good health care. Existing research has indicated that visual aids for disseminating complex health information such as pictures (Honda et al. 2015; Negarandeh et al. 2013) and cartoons (Tae et al. 2012) are helpful in promoting better understanding of the information and engagement in health behaviors. Considering that, the findings imply that health professionals could help users, especially those with limited health

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literacy, better understand complex health information and become more motivated to pursue the goals of good health care by actively creating visually stimulating, understandable, and entertaining health-related content with visual aids (e.g., video features) to share on YouTube.

However, the following findings indicate that instrumental motives for media use and involvement could also be negatively associated with satisfaction with media use (Godlewski and Perse 2010). Specifically, social utility motive was negatively related to perceived competence. In other words, people who use YouTube as a source of health information for social motives actually report feeling less competent in terms of health care. In addition, although social utility motive and convenient information-seeking motive were both positively related to post-exposure online activity, post-exposure online activity was not related to any of the health-related sense of empowerment variables. Existing research has indicated that informative health information, misleading information, and ambiguous information coexist on YouTube (Hossler and Conroy 2008; Keelan et al. 2007; Syed-Abdul et al. 2013). Therefore, one interpretation of this finding is that discussing the myriad of health information that is available on YouTube with others actually makes users who are actively involved in post-exposure online activity feel confused about which information is truly informative for learning how to maintain good health and may end up feeling less empowered in health care. Furthermore, if by participating in additional online activities (e.g., searching for more credible information from other online health resources) users discover that the health information they found or discussed with others on YouTube is misleading, they are not likely to feel empowered in health care as a result of YouTube use. Given that misleading health information on YouTube could have detrimental impacts on users' health care (Madathil et al. 2015), we recommend health professionals support users by actively creating health promotion channels on YouTube and

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sharing more accurate health information with users. In addition, actively filtering misleading information on YouTube (e.g., flagging; Syed-Abdul et al. 2013) is recommended to prevent users from having misperceptions of health care.

There are some limitations that should be addressed in future research. First, the findings from a convenience sample comprised of college students should not be generalized to other populations of health-related YouTube users without caution. Future research should sample different populations to get a clearer picture of how users differ in their health-related YouTube use depending on diverse background characteristics (e.g., health literacy). Second, given that this study was based on a cross-sectional design, we cannot make any inferences about the causal relationship among variables in this study. Future research should be based on longitudinal designs to further validate the relationship this study identified. Third, the measurement of motives for health-related YouTube use relied on using the items such as those measuring the motives for media use in non-health-related context (e.g., the Internet use; Papacharissi and Rubin 2000). To better describe health-related YouTube use, future research should further develop the items measuring motives for health-related YouTube use from more open-ended responses or focus-group interviews. Lastly, diverse health-related topics (e.g., specific disease, treatment, health insurance, food or drug safety, caregiving) were termed as health information in this study. Existing Uses and Gratifications literature has indicated that people differ in their motives for media use depending on different media contents. Thus, future research should examine how users differ in their health-related YouTube use depending on different health-related topics.

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Table 1 Demographic Profile of Health-Related YouTube Users

Demographics			Education	<i>n</i>	%
Gender	<i>n</i>	%	First year	122	46.4
Female	127	48.3	Sophomore	46	17.5
Male	136	51.7	Junior	45	17.1
Age	\bar{x}	<i>s</i>	Senior	35	13.3
	21	4.17	Graduate school	15	5.7

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Table 2 Motives for Health-Related YouTube Use

I utilized YouTube for health-related reasons ...	SU	CIS	HPT	EE
To let others know I care about their feelings	.80	.08	.10	-.01
To tell others what to do	.80	.13	-.03	.07
To participate in discussions	.77	.13	.13	-.04
Because I need someone to talk to or be with	.75	-.07	.13	-.01
To thank others	.75	.13	.10	.08
Because I just need to talk about my problems sometimes	.75	.02	.07	.11
To help others	.74	.21	.05	.07
To show others encouragement	.74	.19	.06	.18
Because it is easier than telling something offline	.71	.20	.02	.06
Because I enjoy answering other people's questions	.70	.10	.26	.04
Because I'm concerned about others	.69	.27	.01	-.03
To give my input	.69	.12	.17	.12

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To belong a group with the same interests as mine	.65	.19	.17	.16
To meet new people	.63	-.07	.08	.07
Because I want someone to do something for me	.61	.01	.32	.07
Because I can express myself freely	.61	.18	.20	.15
Because it makes me feel less tense	.50	.22	.21	.19
To get information for free	.08	.76	.11	.13
Because it provides an interesting way to do research	.07	.75	.14	.02
To search for information	.05	.74	.08	.01
Because it's easier to get information	.15	.73	-.01	.12
Because I can view material in videos online, and I don't have to pay for them	.07	.72	.26	.11
So I can learn how to do things which I haven't done before	.09	.69	.16	.04
To see what's out there	.20	.57	.32	.23
When I have nothing better to do	.16	.13	.84	.06
Because it gives me something to occupy my time	.16	.20	.81	.21
Because it passes the time away particularly when I'm bored	.06	.08	.74	.23
Because it's just a habit, just something to do	.21	.21	.73	.12
Because it amuses me	.04	.31	.61	.35
Because it's something to do when friends come over	.25	-.04	.58	.23
Because I like to use it	.12	.38	.50	.38
Because it's exciting	.18	.04	.22	.80
Because it's fun to play around and check things	.09	.08	.17	.79

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Because it's enjoyable	-.04	.12	.34	.67
Eigenvalue	17.12	5.69	3.65	1.67
% Variance explained	34.24	11.38	7.31	3.34
\bar{x}	2.26	3.87	3.19	3.37
s	0.79	0.74	0.90	0.93
Cronbach's alpha	.95	.87	.88	.82

Note. SU = Social Utility. CIS = Convenient Information-Seeking. HPT = Habit-Passing Time. EE = Exciting Entertainment.

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Table 3 Pearson Product-Moment Correlations among the Variables

	AGE	GEN	EDU	SU	CIS	HPT	EE	CI	PEOA	PCON	PCOM
GEN	.06										
EDU	.57***	.09									
SU	.11	-.12	-.00								
CIS	.13*	.00	.08	.33***							
HPT	-.13*	-.15*	-.15*	.41***	.45***						
EE	-.05	-.04	-.13*	.28***	.29***	.56***					
CI	.12*	.01	.10	.36***	.57***	.23***	.19**				
PEOA	.13*	-.09	.07	.65***	.37***	.37***	.31***	.49***			
PCON	-.13*	.04	-.07	.00	.19**	.09	.08	.20**	.03		
PCOM	.00	.07	-.00	-.14*	.17**	.00	.03	.09	-.04	.70***	
GI	-.01	.08	.01	.06	.30***	.09	.27***	.20**	.12*	.45***	.59***

Note. * $p < .05$ (two-tailed). ** $p < .01$ (two-tailed). *** $p < .001$ (two-tailed). GEN = Gender. EDU = Education. SU = Social Utility. CIS = Convenient Information-Seeking. HPT = Habit-Passing Time. EE = Exciting Entertainment. CI = Cognitive Involvement. PEOA = Post-Exposure Online Activity. PCON = Perceived Control. PCOM = Perceived Competence. GI = Goal Internalization.

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Table 4 Regression Model Explaining Cognitive Involvement

Variable	Cognitive involvement	
	Step 1	Step 2
Age	.15	.03
Gender	.00	.02
Education	.03	.04

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Social utility motive		.22***
Convenient information-seeking motive		.54***
Habit-passing time motive		-.12
Exciting entertainment motive		.01
<hr/>		
R^2	.03	.38
ΔR^2		.35***

Note. *** $p < .001$.

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Table 5 Regression Model Explaining Post-Exposure Online Activity

Variable	Post-exposure online activity	
	Step 1	Step 2
Age	.18*	.05
Gender	-.12	-.03
Education	-.00	.06
Social utility motive		.55***
Convenient information-seeking motive		.11*
Habit-passing time motive		.03
Exciting entertainment motive		.08
R^2	.04	.46
ΔR^2		.42***

Note. * $p < .05$. *** $p < .001$.

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Table 6 Regression Models Explaining Health-Related Sense of Empowerment

Variable	Perceived control		
	Step 1	Step 2	Step 3
Age	-.11	-.13	-.14
Gender	.07	.07	.07
Education	.02	.01	.00
Social utility motive		-.05	-.08

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Convenient information-seeking motive		.25**	.15
Habit-passing time motive		-.00	.01
Exciting entertainment motive		.00	.00
Cognitive involvement			.17*
Post-exposure online activity			-.00
R^2	.01	.07	.09
ΔR^2		.05*	.01

Perceived competence

Variable	Perceived competence		
	Step 1	Step 2	Step 3
Age	.02	.03	.03
Gender	.08	.05	.05
Education	.01	-.01	-.01
Social utility motive		-.24**	-.24**
Convenient information-seeking motive		.27**	.25**
Habit-passing time motive		-.02	-.02
Exciting entertainment motive		.01	.01
Cognitive involvement			.04
Post-exposure online activity			-.02
R^2	.00	.09	.09
ΔR^2		.08**	.00

Goal internalization

Variable	Goal internalization		
	Step 1	Step 2	Step 3
Age	-.02	-.09	-.09
Gender	.06	.05	.05

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Education	.03	.06	.06
Social utility motive		-.02	-.04
Convenient information seeking motive		.34***	.33***
Habit-passing time motive		-.22**	-.22*
Exciting entertainment motive		.28***	.28***
Cognitive involvement			.02
Post-exposure online activity			.01
R^2	.00	.16	.16
ΔR^2		.15***	.00

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.