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Assessing Physician and Patient Perceptions of Generic Drugs via Facebook: A Feasibility Study

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Abstract

Background: Social media offer a novel avenue to engage with and recruit research participants. Facebook in particular is a promising option given its popularity and widespread use. **Objective:** To explore the feasibility of using Facebook to recruit physicians and patients to participate in a survey to assess their perceptions about generic venlafaxine extended release (ER) tablet indicated for depression. **Methods:** Web-based surveys were developed to gauge physicians' prescribing experiences with and patients' perceptions of generic venlafaxine ER tablet. The surveys included questions specific to venlafaxine ER tablets, such as perceived safety and efficacy of the drug and overall comfort level with either prescribing or taking the drug. Survey links were then posted and advertised on Facebook to recruit physicians and patients. **Results:** Advertisement for physicians reached 1898 Facebook users and advertisement for patients reached 1144 users during a 10-day advertising period. However, only 14 and 35 users clicked on the survey for physicians and patients, respectively. No physician completed the physician survey while 3 patients completed the patient survey. **Conclusions:** The findings of this study suggest that Facebook may not be an effective method to recruit physicians. Facebook holds promise to recruit patients, but additional recruitment efforts, such as incentives, are needed.

Keywords

methodology, communication, computers, prescribing patterns, antidepressants, bioequivalence, clinical practice

Introduction

The use of social media has dramatically increased over the past decade.[1] The proportion of adults using social networking sites increased from 8% in 2005 to 65% in 2011.[1,2] In 2011, more than two thirds of adults aged 30 to 40 used social media sites such as Facebook.[2] Considering the rising use of social media sites such as Facebook, scientific research using social media outlets is an opportunity to be explored.[2] Social media offer a novel avenue to engage with and recruit research participants.[3] Facebook in particular is a promising option given its popularity. As of March 31, 2017, there were 1.94 billion monthly active users and over 1.28 billion daily active users on Facebook posting up to 4 billion items each day.[4] This report seeks to describe efforts to recruit, through Facebook, physicians and patients for a survey on the Food and Drug Administration's (FDA) approval method of generic venlafaxine extended release (ER) tablet.

FDA-approved generic drugs are identical to the brand name drug in dosage form, safety, strength, route of administration, quality, performance characteristics, and intended use.[5] Typically, in vivo fasting and fed bioequivalence studies required by the FDA are conducted to provide evidence for generic drugs' bioequivalence to the brand reference product. Both pharmaceutical equivalence and bioequivalence ensure that the generic drugs have the same safety and effectiveness as the brand name drug.[6,7]

Venlafaxine ER is a selective serotonin norepinephrine reuptake inhibitor that is indicated for major depressive

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disorder. The ER capsule dosage form was first approved in 1997, while the ER tablet was first approved in 2008. Venlafaxine ER tablet is prescribed in dose strengths ranging from 37.5 mg to 225 mg.[8] The brand drug label states that the drug should be taken with food.[8] Current product-specific guidance for venlafaxine ER tablets recommends fed bioequivalence studies using the 150 mg strength in healthy volunteers only due to safety concerns under fasting conditions.[9] Additionally, FDA states that waiver requests for in vivo testing (ie, "biowaivers") of 37.5 mg, 75 mg, and 225 mg products can be approved based on acceptable in vitro dissolution tests and proportional similarity of formulations.[9]

The approval method for generic venlafaxine ER tablet may influence physicians' and patients' perceptions of the drug, which may in turn influence generic drug use.[10,11] For instance, physicians and patients may be reluctant to prescribe and take, respectively, generic drugs due to concerns about quality and bioequivalence.[11-13] Given the fasting bioequivalence study was waived to approve generic venlafaxine ER tablets, surveys were designed to understand how physicians and patients perceive and use generic venlafaxine ER tablets. This study aimed to explore the feasibility of using Facebook to recruit physicians and patients to participate in a survey and to examine patient and physician knowledge of the approval method and their perceptions about generic venlafaxine ER tablet. This study was approved by the institutional review board of the University of Maryland Baltimore (UMB).

Methods

Survey Instruments

Surveys were developed to gauge physicians' prescribing experiences with and patients' perceptions of generic venlafaxine ER tablet. One physician survey for current or past prescribers of venlafaxine ER tablets was designed and three variations of the patient surveys were designed for (1) current brand name users, (2) current generic users, and (3) past brand name or generic users.

All surveys included an information page that described the study purpose, goals, benefits, and risks. The information page also reiterated that participation was completely voluntary and provided study contact information. The questionnaire included a number of items asking about general perception of generic drugs generated from a review of the literature and from consultation with UMB clinicians. The surveys also included questions specific to venlafaxine ER tablets, such as knowledge of the approval method, perceived safety and efficacy of the drug, and overall comfort level with either prescribing or taking the drug. Questions regarding comfort level were asked prior to and following an explanation regarding the generic venlafaxine approval method to determine if knowledge regarding the approval method changed physicians' and patients' responses. Questions to elicit basic demographic information were also included in the surveys.

The physician surveys were tested for content and clarity at the UMB School of Pharmacy. A total of 20 reviewers comprising faculty, graduate students, research assistants, and a postdoctoral fellow reviewed the physician survey. The patient surveys were tested for clarity among patients visiting a local HIV clinic. Participation in the surveys was voluntary and anonymous. A total of five patients tested the patient surveys.

After testing, all surveys were uploaded to SurveyMonkey, a web-based survey software (www.SurveyMonkey.com).

Physician Recruitment

The inclusion criteria for physicians were the following: (1) being a licensed physician in the United States, (2) reported having previously prescribed or currently prescribing venlafaxine ER tablet, and (3) being at least 18 years of age.

Recruitment advertisements for physicians with the links to access the survey were posted multiple times on five public Facebook groups for professionals who likely treat depression, such as "American Association for Geriatric Psychiatry" and the "American Psychiatric Association," between June 3, 2014, and July 8, 2014. When posting was not allowed, a message was sent to the Facebook group manager to request the posting of the survey advertisements. Unfortunately, group managers did not always respond to the requests.

The physician survey was also disseminated via paid advertising in Facebook. The advertising was directed toward adults over the age of 18 who resided in the United States. Paid Facebook advertisements lasted from July 31, 2014, to August 9, 2014. A maximum of $10 a day was spent on advertising. No incentive was offered to recruit physicians.

Patient Recruitment

The inclusion criteria for patients were the following: (1) being at least 18 years of age, (2) being in the United States, and (3) reported having previously taken or currently taking venlafaxine ER tablet. Patients currently taking venlafaxine ER capsule were excluded unless they had taken venlafaxine ER tablet in the past. Additionally, patients unable to confirm whether they took generic or brand name venlafaxine ER tablets were excluded. It should be noted that while being at least 18 years of age is an inclusion criteria, there was no way to confirm the age of potential participants.

Similar to physician recruitment, advertisements for patients with the links to access the surveys were posted multiple times on 16 public Facebook groups dedicated to patients with depression, such as "Anxiety and Depression

Table 1. Facebook Advertising Metrics for Physician and Patient Surveys During the 10-Day Paid Advertising Period.

Campaign	Reach	Unique Clicks	Unique Click-Through Rate per 100 Users[a]	Cost per Unique Click (US$)	Page Likes
Physician venlafaxine survey	1898 users	14	0.74	0.71	0
Patient venlafaxine survey	1144 users	34	2.97	0.29	0

[a]Unique Click-Through Rate: number of people who clicked on ad divided by the number of people reached.

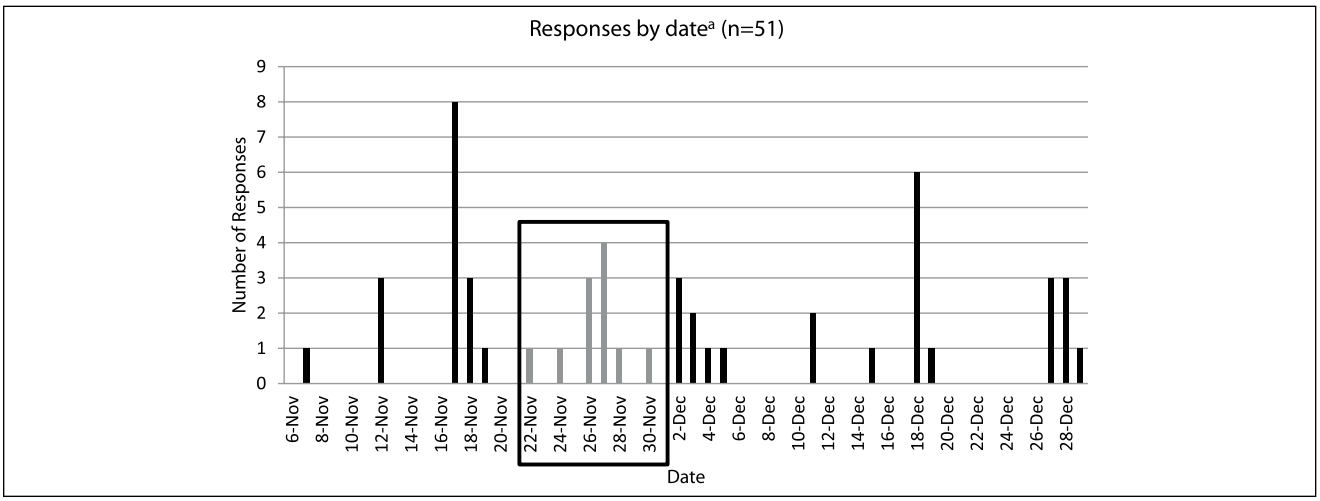

Figure 1. Timeline of responses for patient venlafaxine survey on Facebook.
[a]Responses in grey in the box are the ones within paid Facebook advertising dates (November 20 to November 30).

Association of America" and "Depression and Bipolar Support Alliance," from November 3, 2014, to December 24, 2014. In addition, paid advertisements directed at adults over the age of 18 who were US residents were displayed from November 20, 2014, to November 30, 2014. A maximum of $10 a day was spent on advertising. No incentive was offered to recruit patients.

Analysis

Facebook provides metrics for the paid advertisement period. These metrics include reach (the number of users the ad reached through users' Facebook feeds), unique clicks (the number of unique users who clicked on an ad), unique click-through rate (the number of unique clicks divided by the number of users the ad reached, per 100 users), cost-per click (unique), and page "likes." It should be noted that Facebook metrics are not available for non–paid advertising on Facebook groups posted by the research team.

Results

The paid advertisement for physicians reached 1898 Facebook users during the 10-day advertising period. However, only 14 unique users clicked on the survey link. The Facebook advertising campaign and group postings for the physician surveys did not result in any participant completing the survey.

The paid advertisement for patients reached 1144 users and garnered 34 unique clicks on the survey link during the 10-day advertising period (Table 1). Of them, 11 started the venlafaxine survey.

During the entire 8-week posting period, 51 patients started the venlafaxine survey. Figure 1 provides the timeline of responses for the patient venlafaxine survey on Facebook. Of the 51 venlafaxine survey respondents, three completed the survey, seven left the survey incomplete, and 41 were disqualified. Respondents were disqualified because they reported having only taken venlafaxine capsule (n = 30), could not determine whether their venlafaxine ER tablet was generic or brand name (n = 9), resided outside of the US (n = 1), and did not agree to participate in the research (1).

Of the three patients who completed the survey, two were not aware that the fasting bioequivalence study was not conducted for generic venlafaxine ER tablets. Both prior to and after being provided information on the bioequivalence study requirements, two patients reported being comfortable taking generic venlafaxine ER tablets.

Discussion

A recent review of the literature indicates the potential for Facebook to empower patients and disseminate health information.[3] The review highlights patient recruitment and retention as a benefit to researchers using Facebook to conduct studies.[3] One longitudinal intervention study found that using Facebook can decrease patient attrition due to the ease of patient tracking and communication,[14] while a survey among Australian women about sexual health screening was able to recruit 216 participants over a five-month advertising span.[15] Unfortunately, there is little research regarding recruitment of physicians through Facebook to participate in scientific studies.[3] A survey among 153 health care professionals in the Netherlands indicated that 59% of health care professionals used social media, of which 39% used Facebook.[16] It should be noted that only 26% of health care professionals used social media for health-related reasons and the social media outlet of choice for health-related purposes was LinkedIn.[16]

While recruiting patients and physicians through social media such as Facebook is an innovative and potentially promising strategy, the research team had limited success engaging participants using this approach. Only 51 patient participants started the survey, of which three completed the survey. The research team's limited success may be due to several factors. First, an incentive was not offered. Several studies using social media to conduct surveys have offered an incentive to participants, including gifts and monetary incentives;[17,18] some of these studies had participation rates over 20%.[17,19] Second, the duration of paid advertisements was only 10 days. Some studies report advertising their survey for multiple weeks, which may help increase participation rates.[17,19,20] One study ran an 18-week ad campaign, which reached over 7 million users with a click-through rate of 6 per 100 users.[19] As shown in Table 1, the current study had a reach of less than 2000 each for both physicians and patients. Furthermore, the current study's click-through rate per 100 users was 0.74. This difference may be due to mentioned study's 18-week ad campaign compared to our 10-day ad campaign. Third, the estimated time to complete the surveys was 15 minutes, which may have been a deterrent for participants. Fourth, the surveys targeted physicians prescribing and patients taking a particular drug, which substantially lowers the eligible population, as many individuals who viewed the survey postings or paid advertisements were likely not taking the medication of interest. In addition, many potential participants who showed interest by clicking on the posting or advertisement were excluded because they took venlafaxine ER capsules instead of tablets. Finally, the surveys addressed a technical issue with little visibility, as suggested by the patients' lack of awareness of the waived fasting bioequivalence study. The low visibility subject matter may have contributed to the lack of responsiveness on behalf of physicians and patients.

One particular factor that may have been a deterrent to recruiting physicians was that physicians tend to prefer mail surveys over any other types of survey methods (phone, web-based, etc).[21-23] Studies show that web-based surveys of physicians have the lowest response rates compared with other survey methods.[21-23] In addition, many physicians may not like to use social media professionally. It is possible that physicians may be hesitant to use SurveyMonkey to conduct medicine-related research rather that a secure, health-related website. One study showed that physicians are hesitant to immerse themselves in social media and online communication due to worries about privacy and legal concerns.[24]

Conclusion

This study sought to assess the feasibility of Facebook to recruit physicians and patients to participate in a research survey. The growing number of Facebook users highlights Facebook's potential reach for social scientists to study current health-related issues.[4] The findings of this study suggest that Facebook may not be an effective method to recruit physicians, though future research can provide incentives and guarantees for secure data collection to assess the likelihood to recruit physicians through Facebook. Facebook does holds promise to recruit patients, but additional recruitment efforts such as incentives, longer advertisement periods, and broad eligibility criteria need to be considered.

Authors' Note

Views expressed in this article do not necessarily reflect the official policies of the Department of Health and Human Services, nor does any mention of trade names, commercial practices, or organizations imply endorsement by the US government.

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