USE OF WEB 2.0 FOR DIRECT TO CONSUMER ADVERTISING OF PRESCRIPTION DRUGS

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Abstract
This paper examines the relationship between social media sites used for collecting information on prescription drugs and awareness. It also studies the impact of demographic factors like gender, qualification, occupation, income and age on consumer satisfaction with social media based direct to consumer advertising (DTCA). This study was conducted in select cities of Maharashtra viz: Pune and Aurangabad. Data was collected by use of a closed ended structured questionnaire. Results indicate that there is no relationship between the social networking sites used for collecting information and awareness for prescription drugs. Also satisfaction with social media DTCA is dependent on gender while it is independent of occupation, qualification, income and age.

Keywords: Web 2.0 and DTCA.

Introduction

DTCA refers to promotional material on therapeutic goods presented to the general public (Gu,Williams, Aslani and Chaar, 2011). DTCA, which has traditionally been only allowed in USA and New Zealand, is now expanding to other jurisdictions. Globalization of DTCA is enabled by internet-related technologies that are not limited to geographical borders and are highly unregulated (Mackey and Liang, 2012). $1/3^{rd}$ of people using internet to find health information make a decision about their health based on online information (Baker, Wagner, Singer, & Bundorf, 2003). Use of new and emerging forms of digital or "eDTCA" pose new challenges to policy makers, in protecting public health and combating rising healthcare costs (Mackey & Liang, 2012). Digital DTCA has evolved from Web 1.0" to interactive Web 2.0 technology, which uses interactive internet platforms viz: Facebook, Twitter, Youtube, linkedin and googleplus. Some pharmaceutical firms sponsor e-patients to blog about their disease and medicine. Social media content has the potential to become viral (lau et. al, 2012).

Social Media (Web 2.0) Engagement of Pharmaceutical Companies for DTCA

Percentage of patients searching and reading about other's experience with their health or medical issues via social media is increasing and pharmaceutical companies following their online customer's activities. Pfizer, has the most robust social media website, including links to YouTube, Facebook, and Twitter, as well as SlideShare, LinkedIn, Flickr, and blog resources (Liang and Mackey 2011). Almost all pharmaceutical companies today have Facebook page, Twitter feed, and sponsored blogs or RSS feeds. Interactive internet media sites like GlaxoSmithKline's blog site and AstraZeneca's Facebook page indicate they are "intended for US residents/customers only," but offer no restrictions to non-US users. Novartis (Oncology) has built a social media platform called CML Earth (Chronic Myelogenous Leukemia). Targeted towards patients suffering from leukemia (around the world) this site provides a platform to connect with other patients, doctors, and online communities. Novartis is one of those

pharmaceutical companies which have made use of social networking sites like Facebook, Twitter and Youtube to promote their drugs.

Literature Review
Davies, M. (2008): The roles of consumers and corporations have changed significantly since the rise of the Internet. YouTube give consumers platform to voice opinions about products and brands. Consumers choose social media sites including discussion boards, blogs and online groups. The anonymity of the Internet affords a comfort level that encourages individuals to share details about their symptoms, treatment history and experiences with their doctors, the efficacy and side effects of medication, the impact of their condition on their own lives and more. At the same time, the ubiquity of the internet can provide a connection between experienced patients and someone newly diagnosed.

Glinert, L. (2010): Use of the social media is a fast-growing part of this picture. The credibility that users have been attributing to Internet health information has been consistently high. Majority of the health-seekers said they believed all or most online health information, and that they had not seen any wrong or misleading health information on the Internet.

Gray, A. and Day, C. (2000): FDA has produced comprehensive guidelines on all aspects of advertising. The research based pharmaceutical industry, represented by the IFPMA, strongly supports the right to use the Internet as a means of providing accurate and scientifically-reliable information on medicines in a responsible manner, for the benefit of patients, healthcare professionals and other appropriate parties. Recognizing patient safety is of paramount importance, IFPMA's goal is to encourage the appropriate use of the Internet.

Gu,Williams, Aslani and Chaar (2011): The study aimed to investigate the DTCA encountered by Australian consumers when searching the Internet for common health- or medicine-related questions. The results confirmed that Australian consumers were exposed to DTCA of prescription medicines on the Internet. Although Australia is a DTCA-restricted country, consumers are not exempt from exposure to advertising of pharmaceutical products, including prescription medicines, on the Internet.

Kaphingst, et al. (2004): Concluded that most DTCA gave consumers more time to absorb facts about benefits than risks, which could have implications for the ''fair balance'' requirement. Some risk statements in the ads lacked important contextual information. DTCA uses both medical and lay terms to convey medical ideas, suggesting that consumer-friendly language is not used to communicate all information in the ads, as urged by FDA (U.S. FDA, 1999). Complete references to additional product information was given only in text, casting doubt on whether the advertisements were making ''adequate provision'' for dissemination of detailed product information. All advertisements included at least one statement that directed consumers to seek more information.

Lau, A., Fernandez-Luque, L. and Armayones, M. (2012): This paper presented possible harm that social media can inflict on consumers when misused. Social media has the potential to overcome many of the reading and writing barriers in health literacy. However, due to the salient nature of social media and the social influences surrounding its use, consumers and patients are likely to be subjected to greater risks when unsafe content is consumed than in the pre-social media world.

Mack, J. (2010): Physicians today are likely to receive drug information from a variety of sources and more often than not these sources are accessed via the Internet. Devices such as iPhone and soon iPad— will make it even more convenient for physicians to receive online content.

Mackey and Liang (2012): Pharmaceutical advertising has undergone a rapid evolution due to globalization, changing patient-provider relationships, emerging health-related technologies, growing importance and expanding "business" of global health. Yet, pharmaceutical marketing can have adverse health and economic outcomes, especially if left unregulated and allowed to proliferate and cross geopolitical borders in the uncontrolled digital environment. Emerging markets may represent the next logical step for digital DTCA proliferation, given their untapped market potential and explosive growth, but they are especially at risk given the ambiguous regulatory treatment of digital DTCA.

Meeks, K. (2010): Study results indicated that Information Rx needs to be promoted more and perhaps marketed to a different target audience. Also, the Information Rx link should be easier to find on the medicine related web site, and there should be better clarification that the Information Rx materials are free. There definitely seems to be an interest in the Information Rx project from physicians, nurses, and other staff, but promotion and education are key to DTCA's success.

Myers, D. S. (2012): Delayed guidance has not stopped many of the world's largest pharmaceutical companies from establishing a presence on Facebook. These pharmaceutical companies have been cautious in the use of social media concentrating on science or social responsibility while keeping away from user-generated content and specific product information. These companies do not currently have Facebook pages relating to any specific drug therapies. This is likely to change if the FDA guidance provides companies the assurance that such an activity is not a violation.

Pantelic, D. (2009): Internet as liberal and hard to control medium brings entirely new sets of solutions and/or problems to pharmaceuticals marketers. The nature of the product, legal regulations and ethical principles create an environment in which the marketers need above average creativity and care of the target audience, message content and choice of appropriate communication channels for the message to produce the desired effect.

Vigilante, Mayhorn and Wogalter (2007): Results indicated that participants frequently encounter DTC ads and some report information seeking as a result. Participants reported infrequently making online (Internet) purchases of prescription drugs possibly due to safety and legal concerns. DTC ads influence interactions between doctors and their patients. People appeared to be engaging in information seeking after they encountered DTC advertisements. Another trend occurring with the proliferation of DTC ads is the explosion in the use of the Internet. Internet provides opportunity to purchase drugs online that might bypass physician's restrictions.

Zaneis, M (2010): Online advertising is a vast, complex, and evolving business ecosystem. Online messages can be presented effectively within strict space limitations because of interactive technologies that allow consumers to access more information instantly. In the wake of recent FDA enforcement notices, medical products companies may be reluctant to engage in online advertising given the lack of clarity, thereby depriving consumers of relevant and critical health information that can improve and even save lives.

Research Objectives
1. To identify the relationship between social networking sites used for collecting information on prescription medicine and awareness for prescription drug.
   1.1 To identify the relationship between facebook and awareness for prescription drugs.
   1.2 To identify the relationship between twitter and awareness for prescription drugs.
   1.3 To identify the relationship between linkedin and awareness for prescription drugs.

1.4 To identify the relationship between youtube and awareness for prescription drugs.
2. To identify the relationship between "satisfaction" with social media DTCA and "demographic factors" (gender, occupation, qualification, age group).

Research Methodology
Pre- Test
The questionnaire was pre – tested with 384 consumers from population as sample to check ambiguities. Data gained through pre-test was analyzed using same statistical methods as in the final analysis especially reliability and validity of the scale.

Research Design
1. Exploratory Research: Done to obtain the important variables to identify the factors awareness for social media DTCA and satisfaction with social media DTCA. This helped to prove the objective and hypothesis of the study.
   Interview with consumers: To understand the attitude of consumers towards the drug being advertised through social media informal interviews were conducted.
   Secondary Data Analysis: Secondary data is information that is not topical or research specific and has been collected and compiled by some other researcher or investigative body. It is recorded and published in a structured format. In this study the source of information was research papers, dissertations and thesis.
2. Conclusive research design: For this research a sample of 600 was used. Descriptive and inferential statistics were used to test various hypotheses.
3. Descriptive Research: Descriptive research was used to establish the relationship between social media used to collect information on prescription medicine and awareness for prescription drug and relationship between "satisfaction" with social media advertisement of prescription drugs and "demographics factors"**.**
4. Cross Sectional Studies: In this research, questionnaires were used to collect the data from two cites of India i.e. Pune, Auragabad.

Pilot Study
After making a new questionnaire after pre-test, a pilot study was conducted. Data were analyzed using SPSS version 16 and reliability test done by using Cronbach's Alpha came to 79% which showed the reliability of the scale adopted.
Data Analysis and Conclusion
H_{01}: There is no association between Facebook and awareness for prescription drugs.
H_{11}: There is association between Facebook and awareness for prescription drugs.

Chi-Square Tests

	Value	*Df*	*Asymp. Sig. (2-sided)*
Pearson Chi-Square	7.756	8	.458
Likelihood Ratio	9.273	8	.320
Linear-by-Linear Association	.415	1	.519
N of Valid Cases	384		

Above table indicates at 5 % level of significance p > (0.05), so null hypothesis is accepted. It is concluded that there is no association between networking site i.e. facebook and awareness for prescription drug.

H$_{02}$: There is no association between twitter and awareness for prescription drug.
H$_{22}$: There is association between twitter and awareness for prescription drug.

Chi-Square Tests

	Value	*Df*	*Asymp. Sig. (2-sided)*
Pearson Chi-Square	4.517(a)	8	.808
Likelihood Ratio	4.530	8	.806
Linear-by-Linear Association	1.803	1	.179
N of Valid Cases	384		

Above table indicates that at 5 % level of significance p > (0.05), so null hypothesis is accepted. This means that social networking site i.e. Twitter used for collecting information and awareness for prescription drug are independent of each other.

H$_{03}$: There is no association between LinkedIn and awareness for prescription drug.
H$_{33}$: There is association between LinkedIn and awareness for prescription drug.

Chi-Square Tests

	Value	*Df*	*Asymp. Sig. (2-sided)*
Pearson Chi-Square	8.878(a)	8	.353
Likelihood Ratio	9.212	8	.325
Linear-by-Linear Association	1.938	1	.164
N of Valid Cases	384		

Above table indicates that at 5 % level of significance p > (0.05), so null hypothesis is accepted. This means that social networking site i.e. LinkedIn and awareness for prescription drug are not related with each other, they are independent of each other.

H$_{04}$: There is no association between youtube and awareness for prescription drug.
H$_{44}$: There is association between youtube and awareness for prescription drug.

Chi-Square Tests

	Value	*Df*	*Asymp. Sig. (2-sided)*
Pearson Chi-Square	12.433(a)	8	.133
Likelihood Ratio	10.724	8	.218
Linear-by-Linear Association	6.342	1	.012
N of Valid Cases	384		

Above table indicates that at 5 % level of significance p > (0.05), so null hypothesis is accepted. This means that social networking site i.e. Youtube used to collect information and the awareness for prescription drug are independent of each other.

H$_{05}$: Satisfaction with social media DTCA is independent of gender.
H$_{55}$: Satisfaction with social media DTCA is dependent on gender

Chi-Square Tests

	Value	*df*	*Asymp. Sig. (2-sided)*
Pearson Chi-Square	9.226(a)	3	.026
Likelihood Ratio	9.006	3	.029
Linear-by-Linear Association	5.428	1	.020
N of Valid Cases	384		

Above table indicates that at 5 % level of significance p < (0.05), so null hypothesis is rejected. It is concluded that Satisfaction with prescription drug advertisement through social media is dependent on demographic factor such as gender.

H$_{06}$: Satisfaction with social media DTCA is independent of occupation.
H$_{66}$: Satisfaction with social media DTCA is dependent on occupation.

Chi-Square Tests

	Value	*df*	*Asymp. Sig. (2-sided)*
Pearson Chi-Square	10.065(a)	6	.122
Likelihood Ratio	9.376	6	.154
Linear-by-Linear Association	5.039	1	.025
N of Valid Cases	384		

Above table indicates that at 5 % level of significance p > (0.05), so null hypothesis accepted. It is concluded that Satisfaction with prescription drugs advertisement through social media is independent of demographic factor such as occupation.

H$_{07}$: Satisfaction with social media DTCA is independent of qualification.
H$_{77}$: Satisfaction with social media DTCA is dependent on qualification.

Chi-Square Tests

	Value	*df*	*Asymp. Sig. (2-sided)*
Pearson Chi-Square	6.079(a)	6	.414
Likelihood Ratio	7.476	6	.279
Linear-by-Linear Association	2.450	1	.118
N of Valid Cases	384		

Above table indicates that at 5 % level of significance p > (0.05), so null hypothesis accepted. It is concluded that Satisfaction of prescription drugs advertisement through social media is independent of demographic factor such as qualification.

H$_{08}$: Satisfaction with social media DTCA is independent of income.
H$_{88}$: Satisfaction with social media DTCA is dependent on income.

Chi-Square Tests

	Value	*df*	*Asymp. Sig. (2-sided)*
Pearson Chi-Square	10.523(a)	12	.570
Likelihood Ratio	11.634	12	.476
Linear-by-Linear Association	.791	1	.374
N of Valid Cases	384		

From the above table, it is observed at 5 % level of significance p >   (0.05), so the null hypothesis accepted and alternative is rejected, so, we conclude that Satisfaction of prescription drugs advertisement through social media is independent of demographic factor such as monthly income.

H_{09}: Satisfaction with social media DTCA is independent of age.
H_{99}: Satisfaction with social media DTCA is dependent on age.

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.917(a)	6	.927
Likelihood Ratio	1.905	6	.928
Linear-by-Linear Association	.000	1	.992
N of Valid Cases	384		

From the above table, it is observed at 5 % level of significance p >   (0.05), so null hypothesis is accepted. It is concluded that Satisfaction of prescription drugs advertisement through social media is independent of demographic factor such as age.

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