



A study on the compliance with patient expectation of selected drugs data in official websites of pharmaceutical companies: Opinions of medical and pharmacology students at Tehran University of Medical Sciences, Iran

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ABSTRACT

Background: Information technology has been developed so rapidly and pharmaceutical companies design websites with the goal of providing better service to customers and sell more products. The evaluation of information contained on the selected pharmaceutical company's web sites is adapted in the current study to understand the needs and expectations of consumers.

Methods: According to the research plan, a questionnaire used in a similar study by Walter Wymer was applied in this study. The reliability of the survey was confirmed by examining 12 primary samples through Cronbach's alpha. Based on the statistical community of medical and pharmacy students that reside in the Tehran Medical Sciences University, Iran, the samples randomly were chosen. A total of 5 branded prescription drugs were selected either because they were evaluated as being poor consumer choices for safety reasons or better alteration exists. The study participants visited each of five websites for the selected drugs, and then they answered a series of questions for each website, to evaluate each website's information content. Data were analyzed using SPSS software.

Results: The results showed that only 2 of 5 websites was fully presenting benefit and risk information, predominantly the later one, and the limitations to the uses of drug. Pricing information, alternative medicines, treatments, and behavioral approaches for dealing with an illness or health condition were not part of the information provided by drug companies.

Conclusion: Only two of the five selected web sites had relatively good condition. Hence, Iranian consumers need to be aware and careful to use the pharmaceutical company websites as a source of information for finding prescription drugs information.

Keywords: Drug advertising; Prescription drug websites; Pharmaceutical marketing; Consumer's rights

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1. Introduction

Histories of medicine and pharmacy as two branches of science are intertwined to the extent that ancient pharmacists used to examine patients, diagnose the problems, and prescribe their biomedical extracts of natural plants, and dispense them to those they find in need. Ancient Iranians were among the pioneers who knew the drugs. Avesta, a collection of Zoroastrian texts gathered during the 4th or 6th centuries, had two copies: one of them apparently was burned when the army of Alexander the Great invaded Iran and the other was the one which was found, and eventually received by Galen (the Greek ancient medical scientist) [1]. The pharmaceutical industry has played a special role in people's lives and national dimensions from different aspects such as economic, social, and political. For this reason, its development in different aspects can be considered. This industry affects people in the field of health, security, and

freedom where all segments of society are interacting in some way with its products [2].

The important product of the pharmaceutical industry is medicine. However, the concerns of the industry are not unique and are rather multi-dimensional. On one hand, it is associated with diagnoses, treatment, prevention, assuagement, relief, and natural change and disease of body organs. On the other hand, it is associated with production system, distribution and consumption patterns of a society in which it has an effective role in economic support of a community, especially in health economics. In particular, it is even more impressive in countries like Iran in which drug consumption is well above the average [3-5]. It is noteworthy that the medicines despite their vital role for patients, they have side effects, horrible side effects that knows false the excessive use of drugs. Particularly, when its use has not been recommended by doctors. Hence, due to the economic role of

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the medicine and also side effects of excessive or irrational use, today it may lead to the intense tendency in limiting toward drugs consumption worldwide. Even in developed countries, various programs are proposed and planned to control drug consumptions [6].

Economically, the pharmaceutical industry in many countries is one of the major industries that draw huge investments to grow. Statistically, the sales of pharmaceutical products exceeds \$ 160 billion worldwide [7].

Basically, marketing has certain concept and it is a process in which firm consciously makes a contribution to the market. Marketing itself ensures introducing and advertising to consumers and the role of information technology is indispensable as a tool or platform for the introduction of a product. One common definition of marketing is to find out the needs of customer and fulfilling them. Peter Drucker emphasized on the importance of marketing and innovation for an enterprise as he said "Business has only two functions — Marketing and innovation," and believed in creating customers through marketing [8].

The growth of the internet, the development of e-commerce businesses in the world have led to importance of websites and the undeniable role in establishing electronic communication between organizations and institutions with their customers; because in this environment, website, is a bridge between organizations and their customers [9].

Companies began direct-to-consumer advertising in 1985 when Food and Drug Administration (FDA) canceled restriction on direct-to-consumer advertising of pharmaceutical products [10].

In 1997 also, when FDA disseminated a new guidelines for the development of direct-to-consumer advertising, the direct advertising of prescription medicines to consumers increased [11].

In the past 2 years, the pharmaceutical companies' tendency to use new methods of marketing has been showing an increment. Pharmaceutical companies have emphasized on online advertising process and changed online advertisement of their resources. They have stayed away from radio, television and other conventional ways of advertisement, however the usage of search engines raises day by day [12].

Now millions of people search for health information and medication through the internet. Studies have shown that consumers prefer the website instead of other sources of information for their health [13].

More than half of consumers use the internet for achieving information to help their decision making in health care [14].

In our country, internet usage has grown substantially in recent years. According to Statistical Center of Iran, the results of the survey of internet users in 2010 showed that internet penetration was 14.7%. When compared to penetration in 2008 an increase of about 3.6% could be demonstrated. This ease of access to the internet seems to have facilitated the on-line search for health information, including pharmaceutical data.

These advertisements are morally and legally controversial. The main argument of the proponents of the direct advertising to consumers is that, these kinds of advertisements provide valuable information for consumers to help making better decisions in their health care [15].

However, the main argument of critics is that the information provided by the direct advertising is to influence the sale of brand drugs and do not provide required information of health for consumers [16].

Everyone is a consumer. Preserve and promote the respect to consumer means respect to humanity [17]. Perhaps the most important aspect of consumer protection is its health protection. Since the pharmaceutical and health products play an important role in the life of every individual and is directly associated with the physical and mental health of people, lack of information and awareness of consumers of these products can lead to misuse of medicines or use of counterfeit ones [18].

According to article 7 of the Law on Protection of Consumers' Rights (Chapter II Duties of suppliers of goods and services for consumer rights); false advertising and false statements that deceive or confuse the consumer through the mass media, mass media and leaflets, is forbidden [19].

With regard to the issues listed in this paper, we will address the issue whether the information provided on the pharmaceutical websites are in comply with the needs and expectations of patients who require taking medication.

2. Methods

This research is a descriptive cross-sectional study in 2012-2013. The populations are medical and pharmacy students. The total statistical population was 120 patients which for determining the sample size the formula was used and an approximate number of 50 was obtained that were selected through random sampling. In this study, a questionnaire was utilized to collect data taken from a similar study entitled reviews consumer perceptions of external websites performed by Walter Weimar. This questionnaire has been translated with great care and approved by highly specialist professors. To determine the reliability of the questionnaire, the Cronbach's alpha method was used and a calculation of 0.87 was achieved. To analyze the data, chi-square and t-tests were used and data processing questionnaire was conducted using statistical software SPSS (version 20, IBM Corporation, Armonk, NY, USA). This questionnaire examines the situation of 5 pharmaceutical producers' websites including; Luqman, Behestan, Ruzdaro, Sobhan and Samisaz. In the questionnaire, for each selected pharmaceutical companies' websites first the 2 demographic questions were asked to obtain the age range of respondents and their title of the course. Then, the next 9 questions in this questionnaire were designed based on the Likert scale, in which there is five comparing questions as strongly disagree, disagree, neutral, agree, and strongly agree. Finally, to achieve the primary goal of the website from respondents' view point a question was asked.

3. Findings

The percentage of respondents based on the field of their study was around 72% for medical field, and 28% for pharmaceutical field. For the age range also, 2% were for the age of 21, 10% were 22 years of age, 42% of 23-year-old, 24-year-old 24%, 18% were 25-year-old, and finally 2% were 26% and 2% were 27-year-old in which the total average age was 22.4 years of age.

Table 1. The distribution of respondents on primary purpose of the pharmaceutical companies' websites

Primary purpose of the website	Company				
	Behestan	Loghman	Rouzdarou	Samisaz	Sobhan
Advertising	36.0	4.0	74.0	82.0	88.0
Education	6.0	8.0	4.0	2.0	4.0
Education and advertising	58.0	88.0	22.0	16.0	16.0
Total	100.0	100.0	100.0	100.0	100.0

This questionnaire is included questions with a 5 scales of strongly disagree, disagree, neutral, agree, and strongly agree, so the code 1 means completely disagree and 5 completely agree. To check the information on drug prices, the price of alternative medicine, alternative therapies and most effective treatments for specific diseases, a t-test was conducted by means of with the 2.5 as median point.

The distribution of respondents on the primary purpose of website creation of pharmaceutical companies is listed in table 1.

As can be seen in the primary purpose of the website of Behestan Pharmaceutical Company, 36% of the sample sizes have believed that websites are for advisement, 6% rated that websites are for education purpose, whereas 58% mentioned that websites are both for education and advertisement purposes. The story for Luqman Company's website was slightly different. The distribution of respondents shows 4% believe that websites are for advertisement purpose, 8% of respondents mentioned the website are educational and 88% have reported websites are both educational and advertisement. For Rozdaru Pharmaceutical companies, the distribution of respondents on the primary goals of website presented that 74% have given the advertising purpose of websites, 4% believe that the websites are educational; while the opinion of 22% was that the websites are both educational and advertising. The Samisaz Company's website has received completely different feedback from respondents in which around 82% rated that the aim of having website was for advertisement, 2% have thought that website is for educational purpose and the rest which is about 16% of the distribution shows opinions that education and advertisement are the main aim of creating website for this company. However, the distribution of respondents have confirmed that the goals of the website for Sobhan Company shows similar trend Samisaz Company in which 80% believed website has adverting purpose, 4% have claimed that website is more educational and 16% feedback certify that the website is for both education and advertisement purpose.

Furthermore, in the primary objective assessment, the chi-square test was used. This is a test to compare whether there is a difference between observed responses of participants against expected values or not. The results showed that all 5 pharmaceutical companies, showed significantly different outcomes from the expectations. This can be interpreted as the participant's belief that these companies not only advertise their pharmaceutical products, they also release information of products to customers.

Distribution of the percentages of responses to each of 9 remaining questions is listed in tables 2-10. These questions are about alternative therapies, the most effective treatments, the prices of medicines and alternative medicine, the risks and dangers of drug and drug effectiveness and appropriateness of the information provided on the websites, whether or not the

information are incorrect or misleading. As can be seen in table 2, the accuracy of the information provided on the website of the pharmaceutical companies, the largest number of respondents in this area have not had any particular opinion about Samisaz and Sobhan companies, they also have had objection with the claim made in this section for Luqman and Behestan companies, however they have been agree with the claim for Ruzdaro company.

Table 2. Distribution of opinions about the authenticity of information provided on websites of pharmaceutical companies (not misleading)

Company	n (%)	Cumulative percentage
Samisaz		
Disagree	4 (8.0)	8.0
Neutral	24 (48.0)	56.0
Agree	12 (24.0)	80.0
Completely agree	10 (20.0)	100.0
Total	50 (100.0)	
Loghman		
Completely disagree	15 (30.0)	30.0
Disagree	20 (40.0)	70.0
Neutral	13 (26.0)	96.0
Agree	1 (2.0)	98.0
Completely agree	1 (2.0)	100.0
Total	50 (100.0)	
Rouzdarou		
Completely disagree	5 (10.0)	10.0
Disagree	4 (8.0)	18.0
Neutral	13 (26.0)	44.0
Agree	19 (38.0)	82.0
Completely agree	9 (18.0)	100.0
Total	50 (100.0)	
Behestan		
Completely disagree	12 (24.0)	24.0
Disagree	22 (44.0)	68.0
Neutral	12 (24.0)	92.0
Agree	3 (6.0)	98.0
Completely agree	1 (2.0)	100.0
Total	50 (100.0)	
Sobhan		
Completely disagree	6 (12.0)	12.0
Disagree	5 (10.0)	22.0
Neutral	15 (30.0)	52.0
Agree	13 (26.0)	78.0
Completely agree	11 (22.0)	100.0
Total	50 (100.0)	

In table 3, the correlation between efficacy and risks of the drug in the information provided on the websites was made by the feedback of respondents who were disagree with the website of Ruzdaro and Samisaz Companies, whereas they were comparatively agree with the websites of Luqman and

Behestan Pakhsh companies, and they have been completely disagree with the Sobhan Company's website.

Table 3. Distribution of comments about the balance between efficacy and risks of medicines in the provision of drug information

Company	n (%)	Cumulative percentage
Samisaz		
Disagree	13 (26.0)	26.0
Neutral	15 (30.0)	56.0
Agree	9 (18.0)	74.0
Completely agree	13 (26.0)	100.0
Total	50 (100.0)	
Loghman		
Completely disagree	2 (4.0)	4.0
Disagree	2 (4.0)	8.0
Neutral	2 (4.0)	12.0
Agree	34 (68.0)	80.0
Completely agree	10 (20.0)	100.0
Total	50 (100.0)	
Rouzdardou		
Completely disagree	17 (34.0)	34.0
Disagree	19 (38.0)	72.0
Neutral	9 (18.0)	90.0
Agree	3 (6.0)	96.0
Completely agree	2 (4.0)	100.0
Total	50 (100.0)	
Behestan		
Completely disagree	2 (4.0)	4.0
Disagree	7 (14.0)	18.0
Neutral	8 (16.0)	34.0
Agree	27 (54.0)	88.0
Completely agree	6 (12.0)	100.0
Total	50 (100.0)	
Sobhan		
Completely disagree	23 (46.0)	46.0
Disagree	15 (30.0)	76.0
Neutral	5 (10.0)	86.0
Agree	6 (12.0)	98.0
Completely agree	1 (2.0)	100.0
Total	50 (100.0)	

In table 4, about the transfer of information, the dangers of drug websites, most of the respondents opposed the claim of Samisaz Company's website, while they were completely disagree with the claim against Ruzdaro and Sobhan companies' websites and also they were agree with the claim against the Luqman and Behestan Companies websites.

Based on the results reported in table 5, most of the respondents were disagree with the information provided in the field of drug treatment of specific diseases on websites of Samisaz, Ruzdaro and Sobhan Companies, however there were agree with the Luqman and Behestan Companies' websites.

In the case of the restrictions on the use of medication (often ineffective) on websites, table 6 has tabulated the feedback of participants. Feedbacks have shown a disagreement with the claim for the website of Samisaz Company, while the agreement was reported for Luqman and Behestan Companies, and also the participants were completely disagree with the claim against the Sobhan Company's website.

Table 4. Distribution of the comments on transfer of information about the dangers of drug on websites

Company	n (%)	Cumulative percentage
Samisaz		
Disagree	15 (30.0)	30.0
Neutral	20 (40.0)	70.0
Agree	8 (16.0)	86.0
Completely agree	7 (14.0)	100.0
Total	50 (100.0)	
Loghman		
Completely disagree	1 (2.0)	2.0
Disagree	4 (8.0)	10.0
Neutral	5 (10.0)	20.0
Agree	28 (56.0)	76.0
Completely agree	12 (24.0)	100.0
Total	50 (100.0)	
Rouzdardou		
Completely disagree	24 (48.0)	48.0
Disagree	16 (32.0)	80.0
Neutral	8 (16.0)	96.0
Agree	2 (4.0)	100.0
Completely agree	50 (100.0)	
Behestan		
Completely disagree	2 (4.0)	4.0
Disagree	6 (12.0)	16.0
Neutral	5 (10.0)	26.0
Agree	28 (56.0)	82.0
Completely agree	9 (18.0)	100.0
Total	50 (100.0)	
Sobhan		
Completely disagree	29 (58.0)	58.0
Disagree	13 (26.0)	84.0
Neutral	4 (8.0)	92.0
Agree	3 (6.0)	98.0
Completely agree	1 (2.0)	100.0
Total	50 (100.0)	

The participants showed their huge disagreement on all 5 companies' websites in which the availability of information on alternative therapies for diseases was in question (Table 7).

The majority of participants presented their disagreement against the claim (the existence of effective information on the website) for Samisaz Company's website, and also they were all in complete disagreement with that claim to be true for all other companies' websites (Table 8).

The price of drugs on the websites was under question here and participants have believed that this has been presented in no one of the website of these companies (Table 9).

A complete disagreement was given by participants on the claim for the existence of information about alternative medicine on the websites of these companies (Table 10).

About the website of each 5 companies, according to the values for P value (level of significance) < 0.05 calculated by software, for all questions there are very high significance level in the results obtained about alternative therapies, the most effective treatment, drug prices and prices of alternative. Based on the results, values are also less than the median point and this means that participants believe that websites do not have enough information about alternative therapies, the most effective treatments, alternative medicine drug prices and price.

Table 5. Distribution of comments on the provision of information in the field of drug treatment of specific diseases on websites

Company	n (%)	Cumulative percentage
Samisaz		
Disagree	19 (38.0)	38.0
Neutral	19 (38.0)	76.0
Agree	5 (10.0)	86.0
Completely agree	7 (14.0)	100.0
Total	50 (100.0)	
Loghman		
Completely disagree	4 (8.0)	8.0
Disagree	13 (26.0)	34.0
Neutral	12 (24.0)	58.0
Agree	17 (34.0)	92.0
Completely agree	4 (8.0)	100.0
Total	50 (100.0)	
Rouzdaro		
Completely disagree	27 (54.0)	54.0
Disagree	16 (32.0)	86.0
Neutral	4 (8.0)	94.0
Agree	2 (4.0)	98.0
Completely agree	1 (2.0)	100.0
Total	50 (100.0)	
Behestan		
Completely disagree	3 (6.0)	6.0
Disagree	16 (32.0)	38.0
Neutral	6 (12.0)	50.0
Agree	21 (42.0)	92.0
Completely agree	4 (8.0)	100.0
Total	50 (100.0)	
Sobhan		
Completely disagree	26 (52.0)	52.0
Disagree	17 (34.0)	86.0
Neutral	4 (8.0)	94.0
Agree	1 (2.0)	96.0
Completely agree	2 (4.0)	100.0
Total	50 (100.0)	

Moreover, based on the significant level calculated for Samisaz, Sobhan, and Ruzdaro Companies, it can be concluded that all 5 questions about the information on restrictions of medicines' consumption, information on; what disease or physical condition can be treated using these drugs, the risks and dangers of drug effectiveness and appropriateness of medication that are significantly different from results of the test, the mean values of the information about the restrictions on the use of medicines, information on what disease or physical condition can be treated by this drug, the risks and dangers of drug effectiveness and appropriateness of medication, but for accuracy of the information provided in the websites and to know whether information are wrong or misleading, the value of average stands higher which indicates that more respondents believe that the information on this web sites are highly likely to be correct.

Also for websites of Luqman and Behestan Companies, due to the significant level of lower than 0.05, it is concluded that based on the median values of information about limitations of drug usage, information on what disease or physical condition can be treated by this medicine, the risks and threats of drug effectiveness and appropriateness of

medication in good condition, however for the information provided in the website that whether it might be wrong, misleading or not, a value less than median level represents that more respondents believe that the information on this website are more likely to be misleading.

Table 6. Distribution of the use of medicines' restrictions (ineffective items)

Company	n (%)	Cumulative percentage
Samisaz		
Disagree	11 (22.0)	22.0
Neutral	33 (66.0)	88.0
Agree	3 (6.0)	94.0
Completely agree	3 (6.0)	100.0
Total	50 (100.0)	
Loghman		
Completely disagree	2 (4.0)	4.0
Disagree	10 (20.0)	24.0
Neutral	3 (6.0)	30.0
Agree	29 (58.0)	88.0
Completely agree	6 (12.0)	100.0
Total	50 (100.0)	
Rouzdaro		
Disagree	27 (54.0)	54.0
Neutral	19 (38.0)	92.0
Agree	3 (6.0)	98.0
Completely agree	1 (2.0)	100.0
Total	50 (100.0)	
Behestan		
Completely disagree	4 (8.0)	8.0
Disagree	12 (24.0)	32.0
Neutral	6 (12.0)	44.0
Agree	21 (42.0)	86.0
Completely agree	7 (14.0)	100.0
Total	50 (100.0)	
Sobhan		
Completely disagree	26 (52.0)	52.0
Disagree	19 (38.0)	90.0
Neutral	2 (4.0)	94.0
Agree	2 (4.0)	98.0
Completely agree	1 (2.0)	100.0
Total	50 (100.0)	

4. Discussion

About alternative therapies and most effective treatments, participants believe that none of the five websites of Luqman, Behestan, Ruzdaro, Sobhan and Samisaz have the information required. Although consumer may infer which product is the best option for the disease from extensive advertisement, providing these information may lead to a misunderstanding. The consumer has the right to be aware of this information to be able to select the best option for the treatment.

Walter Weimar in a similar study in 2010 found that information about alternative and effective treatments are not usually a part of the information provided by pharmaceutical companies [13].

For the information about drug and alternative medicine prices, the participants believe that none of the 5 websites contains information. This shows that companies are reluctant to provide information about the price, it maybe because they do not tend to draw consumers' attention on prices or from

their prospect providing information on drug prices is complex. Since the competition of the pharmaceutical companies is on brand medicines with similar performance, providing information can lead consumers to choose the cheapest and most effective treatment based on their financial and physical situation which is both beneficial from personal and social view point.

Table 7. Distribution of comments about the information on alternative treatments for disease

Company	n (%)	Cumulative percentage
Samisaz		
Completely disagree	21 (42.0)	42.9
Disagree	19 (38.0)	81.6
Neutral	9 (18.0)	100.0
Total	49 (98.0)	
No answer	1 (2.0)	
Total	50 (100.0)	
Loghman		
Completely disagree	22 (44.0)	44.0
Disagree	19 (38.0)	82.0
Neutral	5 (10.0)	92.0
Agree	4 (8.0)	100.0
Total	50 (100.0)	
Rouzdarou		
Completely disagree	30 (60.0)	60.0
Disagree	18 (36.0)	96.0
Neutral	2 (4.0)	100.0
Agree	50 (100.0)	
Behestan		
Completely disagree	26 (52.0)	52.0
Disagree	20 (40.0)	92.0
Neutral	1 (2.0)	94.0
Completely agree	3 (6.0)	100.0
Total	50 (100.0)	
Sobhan		
Completely disagree	29 (58.0)	58.0
Disagree	17 (34.0)	92.0
Neutral	4 (8.0)	100.0
Total	50 (100.0)	

Walter Weimar in another study found that information about medicines prices and prices of alternative medicines has not been provided on the web sites [13].

Voloshin and colleagues in 2001 with a research on advertising of medicines found that information has not been provided in the advertisements either [20].

Based on the results of the test, Behestan, Luqman, Ruzdaro, Samisaz and Sobhan not only advertise their own brand, also provide consumers with information about their pharmaceutical products. Results in tables show that from the participants' prospect the primary goals of Luqman and Behestan Companies from their websites were educational and advertisement, however this is completely for advertisement when Samisaz, Sobhan and Ruzdaro are being investigated.

To know medicines consumption's restriction, information on how disease or physical condition can be treated by this drug, the risks and dangers of effectiveness and appropriateness of the medication on website, it can be explored that companies such as Luqman and Behestan have a good situation but the information are slightly misleading on

their websites. However, the Sobhan, Ruzdaro and Samisaz companies have not had good situation about with the presentation of this information but the information provided in their websites are not misleading.

Table 8. Distribution of comments about the most effective information on the websites

Company	n (%)	Cumulative percentage
Samisaz		
Completely disagree	21 (42.0)	42.0
Disagree	24 (48.0)	90.0
Neutral	4 (8.0)	98.0
Agree	1 (2.0)	100.0
Total	50 (100.0)	
Loghman		
Completely disagree	21 (42.0)	42.0
Disagree	21 (42.0)	84.0
Neutral	7 (14.0)	98.0
Agree	1 (2.0)	100.0
Total	50 (100.0)	
Rouzdarou		
Completely disagree	25 (50.0)	50.0
Disagree	21 (42.0)	92.0
Neutral	4 (8.0)	100.0
Total	50 (100.0)	
Behestan		
Completely disagree	24 (48.0)	48.0
Disagree	17 (34.0)	82.0
Neutral	5 (10.0)	92.0
Agree	1 (2.0)	94.0
Completely agree	3 (6.0)	100.0
Total	50 (100.0)	
Sobhan		
Completely disagree	33 (66.0)	66.0
Disagree	16 (32.0)	98.0
Neutral	1 (2.0)	100.0
Total	50 (100.0)	

In this regard, Walter Weimar found in a similar study that the information of pharmaceutical companies seem to be complete. In addition they found that the information about benefits and risks of products was not incorrect or misleading at all [13].

Macias and Lewis found that websites of prescribed medicines have not had wrong information in which they have adhered properly in providing information about benefits and risks of medicines. The most important information about the side effects of drugs and drug use restrictions have been pointed out [15].

Huntington and colleagues found in 2007 that 45% of participants in the study believed that information provided on the health website are bewildering [21].

5. Conclusion

From 5 pharmaceutical companies of which their website was tested, the website of Luqman company was the best, however the Behestan Company's website was the worst. The primary objective of these companies from having website is to advertise and educate and in terms of providing information about the restrictions on the use of medicines, information on what disease or physical condition can be

Table 9. Distribution of comments about the price of drugs on websites

Company	n (%)	Cumulative percentage
Samisaz		
Completely disagree	23 (46.0)	46.0
Disagree	22 (44.0)	90.0
Neutral	4 (8.0)	98.0
Agree	1 (2.0)	100.0
Total	50 (100.0)	
Loghman		
Completely disagree	20 (40.0)	40.0
Disagree	20 (40.0)	80.0
Neutral	7 (14.0)	94.0
Agree	3 (6.0)	100.0
Total	50 (100.0)	
Rouzdrou		
Completely disagree	27 (54.0)	54.0
Disagree	22 (44.0)	98.0
Neutral	1 (2.0)	100.0
Total	50 (100.0)	
Behestan		
Completely disagree	30 (60.0)	60.0
Disagree	18 (36.0)	96.0
Neutral	1 (2.0)	98.0
Agree	1 (2.0)	100.0
Total	50 (100.0)	
Sobhan		
Completely disagree	33 (66.0)	66.0
Disagree	16 (32.0)	98.0
Neutral	1 (2.0)	100.0
Total	50 (100.0)	

treated by drugs, the main threats and benefits and the risks of medicines they have a good condition; however, their information on the websites are slightly misleading. Other companies' primary aim was advertisement from having websites and the information they provide was not misleading; however, the websites impart less satisfactory information. Price information are not provided by pharmaceutical companies. Alternative medicines, treatments and procedures (methods) treatment of a disease or health condition were not provided by pharmaceutical companies. From 5 selected websites only 2 had a relatively good situation, which shows that the Iranians need to take care of their usage from websites of pharmaceutical companies for their health matters. One of the key elements of pharmaceutical companies is their consumers, which their satisfaction directly affects the growth and survival of these companies, therefore it is essential for pharmaceutical companies to keep their customers satisfied by providing the efficient and sufficient information on their websites.

6. Recommendations for Practice

- Identify and introduce the websites of top pharmaceutical companies and use practical solutions for companies which are weaker in this area and encourage managers and heads of these companies to improve the efficiency of the website.
 - Providing cooperation of the website's clients (including health professionals such as doctors, consumers, etc.) to improve the quality of information provided on websites by offering criticism.

Table 10. Distribution of comments about the existence of alternative medicine websites

Company	n (%)	Cumulative percentage
Samisaz		
Completely disagree	25 (50.0)	50.0
Disagree	22 (44.0)	94.0
Neutral	2 (4.0)	98.0
Agree	1 (2.0)	100.0
Total	50 (100.0)	
Loghman		
Completely disagree	23 (46.0)	46.0
Disagree	20 (40.0)	86.0
Neutral	5 (10.0)	96.0
Agree	2 (4.0)	100.0
Total	50 (100.0)	
Rouzdrou		
Completely disagree	30 (60.0)	60.0
Disagree	17 (34.0)	94.0
Neutral	3 (6.0)	100.0
Total	50 (100.0)	
Behestan		
Completely disagree	31 (62.0)	62.0
Disagree	17 (34.0)	96.0
Neutral	1 (2.0)	98.0
Agree	1 (2.0)	100.0
Total	50 (100.0)	
Sobhan		
Completely disagree	31 (62.0)	62.0
Disagree	17 (34.0)	96.0
Neutral	2 (4.0)	100.0
Total	50 (100.0)	

- Website design for pharmaceutical companies with regard to the right of consumer principles and international standards in the field of web design of medical and health website.

- Implementation of a survey from website users to know their views about the website.
 - Regular assessment of the websites' content to know whether they supply enough the needs of consumers and abiding the legal and to compliance with legal requirements.

7. Recommendations for Future Research

- Evaluate the strengths and weaknesses of the pharmaceutical website within the country from the standpoint of providing the information required by consumers and complying with legal requirements.
 - Comparison of pharmaceutical websites of companies in Iran and developed countries from the view point of the application of their websites and consumer satisfaction.
 - Evaluation of the methods in gathering health information in Iran by people.
 - Analyzing the laws and regulations existed in the country to control the marketing activities of pharmaceutical companies.
 - Assessing the Iranian legal system from the point of view of protecting the rights of consumers of pharmaceutical and medical goods.
- The study of pharmaceutical companies' websites role in marketing of drugs and other services.

8. Conflict of Interests

Authors have no conflict of interests.

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