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Short Review

Cyber-pharmacies and emerging concerns on marketing drugs Online

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Abstract

The booming e-commerce and a regulation-less environment online have led to the rise of a new generation of websites that market drugs and other products over the Internet. Some of these drugs are often herbal products or of dubious quality, often marketed with a mix of professional design and unverified/fraudulent claims. Several concerns have arisen from different corners and evidence of malpractice has emerged. But there is a lack of sufficient evidence confirming the concerns.

Keywords: Internet, Drug, Commerce, Ethics, Quality of Health Care,

Introduction:

Internet has evolved into a self-organizing media, capable of multiple interactions within. A large number of consumer products including drugs are being advertised and sold over the Internet.(1) Though the marketing of drugs over the Internet is an inevitable outcome of the booming e-economy, it poses unique ethical, legal and quality challenges—the prime cause being the anarchic structure of the Internet. These challenges are important from the consumer, physician and regulator perspectives. This paper aims at reviewing the developments in this domain in an attempt to create awareness on the problem, and to attract more studies and evidence aiding the policy makers in formulating adequate steps to regulate these developments.

Cyber pharmacies- a plausible classification

Mills (2) classifies Cyber pharmacies into three. The first group delivers medicines after first obtaining a valid prescription, while the second group is prescribing based sites i.e., they have a physician in their panel who initiates the prescription, getting a commission of sales. The third class is online drug shops, which are least concerned with prescriptions/other issues. A variety of prescription and non-prescription drugs can be obtained from these sites.

Research on Cyber pharmacies

Eysenbach (3) studied cyber-pharmacies posing as a patient in whom the drug was contraindicated and applied for prescriptions. He found that though majority of websites did not provide the drug, some cyber pharmacies indeed delivered Sildenafil citrate (Viagra) though it was clearly contraindicated. Peterson (4) surveyed 33 Cyber pharmacy websites in the United States and found that most pharmacies provided all of the drugs in the survey. Patients were required to provide their own prescription at 88% of the sites, and 75% of sites used mail or fax to verify prescription integrity. More than 50% of sites had privacy policies posted and 64% used cookies. Bonakdar (5) studied websites offering cancer cure and concluded that a number of websites offered cancer cure through herbal medication with little regard for current regulations. Scaria (6) studied websites offering sale of Viagra and analysed the information provided to potential consumers regarding contraindications and found that though most of the websites provided

information on contraindications, they were often incomplete.

Bessel et al (7) surveyed Internet websites selling medicines online, and found that a variety of malpractices like selling prescription-only medicines without one were rampant.

Legal/Regulatory Issues

E-commerce is virtually a regulation free environment.

Legal issues have been raised by Harrington (8), Stanberry(9) and Weisemann (10). The legal issues from a pharmacist's perspective are that he/she may be charged for unlicensed practice and may have problems in taking legal action for reimbursement. From the consumer perspective, he/she is likely to have problems with quality assurance and consumer reprisal, due to the fact that liability issues are closely related to licensing and legal reach, which often is not possible in cross-border practice. Such legal issues have been recently addressed.(11)

There are also legal issues arising from the differences in law within countries or regions. For example, in Europe, companies are prevented from advertising drugs to customers(12), and are permitted in the United States.

From a regulatory standpoint, several issues have been raised. It is also interesting to note that several approaches are underway to address these issues-like regulation(13) and trust-marking.(14)

Ethical Issues

Ethical conduct ensuring privacy and confidentiality of the patient is one of the cornerstones of medical

practice. Selling drugs over the Internet obviously necessitates the collection and use of confidential medical information. In an anarchic world over the Internet, nobody can be sure of what happens to this information.(15) Moreover, the security of electronic transactions is difficult to assess. Electronic environments inevitably carry significant non-zero probabilities of large information losses once a security breach has occurred.(16) Cases of Cyber-pharmacies not keeping privacy and confidentiality promises have also been reported.(17) Other issues like Trust have also been raised. Studies reveal that trust in drug information from traditional media sources such as television and newspapers transfers to the domain of the Internet(18), leading to utilization of the Internet for information search after exposure to prescription drug advertising.

Quality concerns

Concerns over the quality of drugs sold over the Internet have been raised.(19) It is often difficult to objectively analyse the quality of online services. In a study analysing the websites selling medicines over the Internet(7), some websites appeared to supply prescription-only medicines with no prescription. They concluded that only a minority of e-pharmacies displayed quality accreditation seals. They also observed information published on e-pharmacy web sites that potentially undermines the safe and appropriate use of medicines.

Moreover, concerns on the professional standard have also been raised.(8)

There have also been cases (17) where cyber pharmacies indulged in malpractice, claiming infrastructure that they never had.



Figure 1

Screenshot from a website that sells a herbal product claiming "Medically Proven Results", but does not furnish any agreeable evidence to prove their claims.

Conclusions

The rise of cyber pharmacies is perhaps an inevitable outcome of the booming e-commerce and the regulation free environment on the Internet.(20) Concerns have been raised regarding the ethical conduct, quality of service and protective regulations available, which constitute the essential minimum to ensure public from health adversities. The risks involved are intimately related to the type of pharmacy involved. There are a number of sites selling products of dubious quality, advertised with a mix of unverified claims and professional design. This includes many labeled as herbal products. Herbal medications could not possibly be sold profitably on the Internet without deception, which includes lack of full disclosure of relevant facts, promotion or sale of products that lack a rational use, and/or failure to provide advice indicating who should not use the products.(21) Only a few researches have been conducted to analyse the actual menace of cyber pharmacies, and the results vary considerably. There is also a need of hard evidence, as research (22) and submissions to research databases like E-HARD (<http://www.cybermedicine.net/firms.com/ehard.html>) and DAERI (<http://www.medocertain.org/daeri/>) indicate, based on which future policies can be formulated to protect the health of the people. An intervention at the international level, taking into consideration the issues of the people involved, is the need of the hour.

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Competing interests: The author maintains the e-Health Adversities Research Database (e-HARD)