

A STUDY OF OVER THE COUNTER-PHARMACEUTICAL SALES ON THE INTERNET IN CHINA

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Abstract

Purpose of Study: The Pharmaceutical industry in China has been increasing its market: Aging society, urbanization, upgrading of structure of consumption, reform for pharmaceutical market by the government. However, it is still under development regarding e-commerce in china. The objectives of this research is to consider the future trends of Over the Counter (OTC) pharmaceutical sales on the internet in China.

Methodology: Questionnaire survey regarding pharmaceutical sales on the internet. Investigated 260 respondents live in China. The questions mainly asked about the purchase of medicines during respondents' lifetimes and how respondents made decisions about the purchases of general medicine on the Internet.

Main Findings: We found that regarding the age of 26-35 have the strong potential of purchasing on the internet. At the same time found that the retail shop has becoming convenient, based on walking distance to drugstore.

Implications of study: This study can apply for decision making regarding the purchase of OTC pharmaceutical sales on the internet in China. Also, this study can be refereed when concerning about the system of online pharmaceutical sales.

Originality of study: The originality of study is that we designed the questionnaire survey based on abundant lows which connected to pharmaceutical sales on the internet. And we conducted the survey to the consumers so that we can understand the consciousness of the consumers.

Keywords: *Pharmaceutical Sales, Over the Counter, e-commerce, China, Consumer behaviour*

INTRODUCTION

Table 1 shows the history of law and guidelines governing drugstores in China. (CFDA, 1999) (CFDA, 2000) (Huang, Y., Hu, J. 2007) (Du, J. J. 2006) (Zhang, F. F., 2014) (Zhang, G. Y., (2014) (Cui, Z. F., 2014) (China, 2015) (Ding, Y. (2015) The first online drugstores appeared in 1999, mostly in the United States. From December 1, 2005 in China, Jing wei da yao fang drugstores obtained Internet drug trading service qualification certificates to become the first domestic online drugstore, and later, dozens of drugstores obtained these certificates.

Before July 2009, the development of online drugstores was relatively slow. In the second half of 2009, the China Food and Drug Administration increased the number of its approvals for online drugstores. As a result, some of low-capital shops selling products at big price discounts appeared. After August 2009, the number of online drugstores began to surge. Furthermore, most of the online shop platform already has useful services: product displays, telephone consultations, online drug orders, and online payments. However, other online drugstores offer only basic services. In 2014, the Internet food and drug business supervision and management approach (draft) was promulgated by the Chinese government. Enterprises that have the appropriate qualifications for Internet-based online sales of prescription drugs can conduct third-party logistics and distribution for drug or medical equipment distribution. In 2015, the State Council issued a guideline for "the development of e-commerce to accelerate the development of new economic ideas" proposed to vigorously promote the development of e-commerce. (Zhong, Z. 2015)

LITERATURE REVIEW

In China, business-to-consumer (B2C), which denotes the transaction between an enterprise and a consumer business for medicines through the Internet mail-order platform was banned from August 1, 2016. The aim was apparently to strengthen medical safety management. This forced the closure of the following sites: E-Commerce (EC) T-mall Pharmaceutical Center, a mail-order site specializing in medicines and operated by Alibaba Group in China (Hangzhou City, Zhejiang Province, and Zhejiang Province); Jing Dong (Beijing Chaoyang District, JD.com); and Babaifang, a subsidiary of No.1 shop Guangzhou Babaifang Belief Technology (Guangzhou City). These mail-order sites cannot sell medicines directly to consumers, but they can engage in agency operations for drugstores and business-to-business (B2B) business. Originally, B2C of medicines via the online mail order platform was approved for handling by the government, and each company already exceeded the examination period. According to the National Food and Drug Administration's Directorate General Administration, the government decided to stop these businesses because it had become difficult to manage the safety of prescription medicines being circulated via online mail order.

On December 30, 2016, the General Office of the State Council promulgated A Number of Opinions on the Policy of Further Reform and Improving the Production and Circulation of Pharmaceuticals. Among them, the primary aim of the Internet and Drug Circulation guideline was to meet the needs of safety and convenience of the population. Circulation

should reduce transaction costs, improve circulation efficiency, promote information disclosure, and break the monopoly in pharmaceuticals, among other advantages and roles. The guideline aims to develop circulation, support drug distribution enterprises and Internet companies to strengthen cooperation, promote online and offline integration development, and cultivate new formats. Standard retail drugstore Internet retail services, promotion of “buy online and pick-up in-store,” “buy online and deliver to home,” and other new distribution methods. The guideline encourages qualified areas to rely on existing information systems, pharmacists to conduct online prescription reviews, rational drug guidance, and other pharmaceutical services. Food and drug supervision businesses and other departments should be established to improve the Internet drug trading management system and strengthen daily supervision. ([Guan, J. L. 2016](#))

At the same time, the 2016 China Pharmaceutical Electric Business Development Blue Book pointed out the following favourable industry factors and trends: in 2016, there was a trend for medical and electrical supervision but the policy is gradually liberalizing; the elderly population has continued to drive growth of the pharmaceutical industry, ushering in new opportunities; participants have increased attention, investment, and financing; there has been rapid development of mobile phones; drug companies will disinvest from the hospital industry on a large scale and switch to medical and electrical business. In addition, features such as the support of Medicare reimbursement by online drugstores, classification, and the hot Internet hospitals of 2016 will have a significant impact on pharmaceutical B2C business. At the end of 2016, the Development and Reform Commission issued a draft on Internet market access, proposing that pharmaceutical production and business enterprises should not use e-mail and Internet transactions to sell prescription drugs directly to the public. The next year, in 2017, the government increased the supervision of online sales of drugs. ([Liu. 2017](#))

On January 21, 2017, the State Council issued the Decision on Cancelling the Administrative Licensing of 39 Central Place Designated by the Third Tranche, which clearly states that Internet drug trade service enterprises are cancelled, except for third-party platforms; A medical electronic business has a license B card, C card have not approved (except for A card). ([China. 2017](#)) In addition, enterprises with access to Internet drug-trading services qualifications should comply with drug quality management practices and other relevant guidelines. The requirements for engaging in Internet drug-trading services include strengthening storage management and other relevant systems, as well as implementation of management responsibility, drug quality, and safety. For enterprises that have not yet obtained qualifications for Internet drug trade services, such as “pharmaceutical production enterprises, pharmaceutical wholesale enterprises can carry out Internet drug trade through their own websites and other enterprises, but cannot provide consumers with Internet drug-trading services”; chain drugstores “can provide Internet drug trading services to individual consumers.” According to the rules and requirements for prescription drugs, called the notice, prescription drugs cannot be sold online. In addition, the notice stressed that “the site trading cannot be displayed on the relevant pages, and sales of prescription drugs and countries have specialized management requirements for non-prescription drugs.” Thereafter, the official position regarding Internet drug-trading services was to promote more pharmaceutical companies, with expectations that network businesses in pharmaceutical B2B and B2C businesses would have long-term qualifications. On the one hand, based on past business experience applications, material submissions, assessment, and other requirements, it would take at least 6 months to achieve the C card, or cancel the approval, enterprises would have to achieve a faster turnaround time, and consumers will have more choice for the online purchase of drugs. It is expected that the future of pharmaceutical B2B enterprises and online drugstores will usher in the emergence of exceptional growth, and pharmaceutical companies and online drugstores can broaden the scope of services. However, it is expected that in the original medical business, profitability will be a problem.

OBJECTIVES

E-commerce for pharmaceuticals is still under development in China. On the other hand, based on the behavior of customers, e-commerce for daily commodities has already had practical results, which could indicate that the manner of selling goods using personal computers has matured, while mobile commerce has become more popular. The objective of this research is to consider the future trends of over-the-counter (OTC) pharmaceutical sales via the Internet in China.

METHODOLOGY

From the customer’s point of view, we conducted a questionnaire survey about online purchases of general medical drugs. There were 24 questionnaires and 260 Chinese respondents aged 25 years or older. The questions mainly asked about the purchase of medicines during respondents’ lifetimes and how respondents made decisions about the purchases of general medicine on the Internet. The survey was conducted on Wenjuanxing (an online questionnaire survey service in China). Pearson’s Chi-square test (SPSS version 23; SPSS Inc., Chicago, IL) was used for cross-tabulation analysis (the consumer’s psychology, consumer habits, and other aspects of the comparison). The significance threshold was set at 0.05. Through these results, we considered the development of medical and electronic businesses and the current situation to inform the future development direction of pharmaceuticals businesses.

Table 1 History of law and guidelines governing drugstores in China

Month / Year	Law and guidelines	Description
Dec-99	<i>Interim Provisions on the Administration of Logistics of Prescription Drugs and Over-the-Counter Drugstores</i>	Prohibited prescription anthers and non-prescription anther sales on the Internet
Jun-00	<i>Supervision and administration of pharmaceutical Electronic Commerce</i>	Pharmaceutical e-commerce was carried out in Guangdong Province, Fujian Province, Beijing city, and Shanghai City
May-04	<i>Measures Regarding the Administration of Drug Information Service over the Internet</i>	For the purposes of these Measures, the term "drug information service over the Internet" means the provision of drug information, including medical appliance information , over the Internet for Internet users.
Sep-05	<i>Interim Provisions on the Approval of Pharmaceutical Dealership over the Internet</i>	Allow enterprises to declare online drug trading services in accordance with the general e-commerce model, the drug-trading license is divided into B2B, B2C, and third-party electronic trading platform ; online drugstores belong to the B2C mode.
Oct-13	<i>Circular on Strengthening the Administration of Internet Drug Sales</i>	Retail drugstores may not carry out online drug sales. It strengthens the management of online drug sales and investigates and deals with the increase of illegal drug sales via the Internet.
May-14	<i>Administration of Internet Food and Drug Business Operations (Draft for Comments) (hereafter, the "Measures")</i>	Clear access to the relevant qualifications of the Internet platform, Internet sales of prescription drugs can be distributed by the third-party logistics platform for the delivery of drugs or medical devices.
Sep-14	<i>Circular on the Implementation of the Key Tasks of Medical Reform in 2014 and the Improvement of the Level and Efficiency of Drug Circulation Services</i>	Promotes the practice of medicine, retail drugstores with good faith records, and various forms of reform, in medical institutions, outpatient pharmaceutical services, and other professional services. Encourages the development of retail drugstores and chain operations.
Jan-15	<i>Some Opinions on Promoting and Regulating the Practice of Doctors</i>	Encourage physicians in remote, lack of resources to promote providing medical resources and scientific allocation.
Mar-15	<i>Notice of the General Office of the State Council on Issuing the Outline for the Planning of the National Medical and Health Service System (2015–2020)</i>	Health China cloud service plan that actively uses the mobile Internet, networking, cloud computing, wearable devices, and other new technology. By 2020, it aims to achieve full demographic information, electronic health records, and electronic medical records of the three databases that provide basic coverage of the population as well as to provide dynamic information updates.
May-15	<i>Opinions on Speeding up the Development of E-commerce and New Economic Power</i>	E-commerce is an important core content of the <i>Hulianwang</i> + action plan. In the future, China' s e-commerce innovation and development should be the "integration of tradition "

RESULT

In the survey of consumers, those aged 26–35 years comprised the biggest single proportion of 38.85%. Of this group, 43.3% used their computers at home for online shopping and their mobile devices and tablets outside the home, while

26.92% of consumers were more than 45 years old, of which 66.7% of consumers used their desktop computers for online shopping (Fig. 1),(Table 2).

The survey results show that 71.92% of consumers answered it took them 10 minutes to walk to a drugstore. We understand that retail terminal shops have become convenient (Fig. 2).

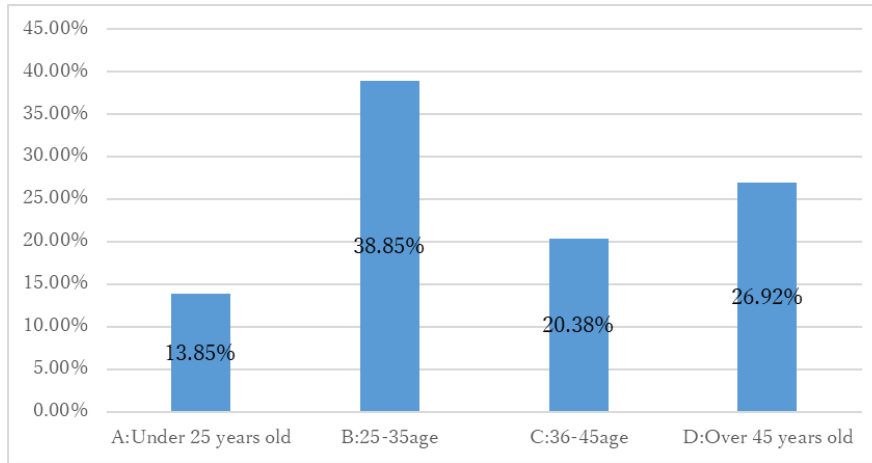


Fig. 1: Summary of respondents (age)

Table 2 Cross-tabulation of age and behaviour of online shopping

Method of online shopping	age			
	25 years old or less (%)	26-35years old (%)	36-45 years old (%)	More than 45 years old (%)
Desktop computer only	4.2	16.7	12.5	66.7
Mobile phone only	16.2	40.1	20.4	23.2
Tablet only	0	0	66.7	33.3
Desktop computer at home, phone or tablet outside the home	11.9	43.3	20.9	23.9
Tablet at home, phone outside the home	16.7	45.8	20.8	16.7

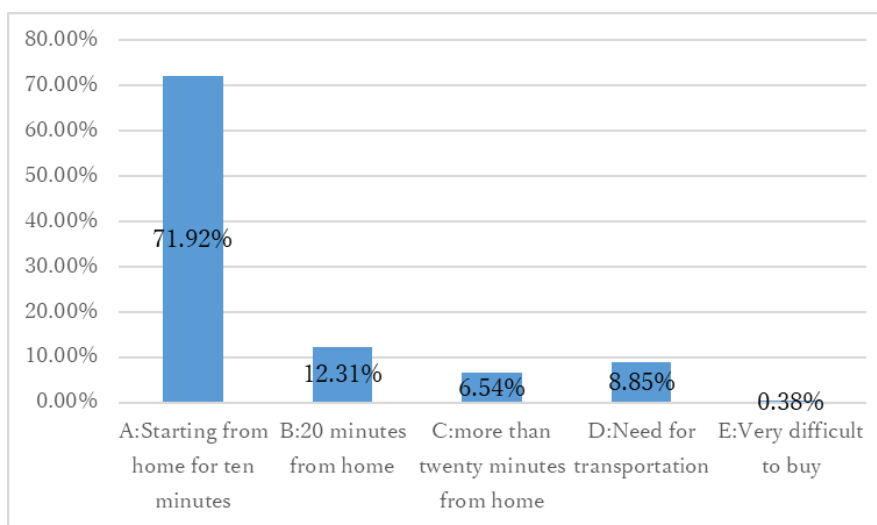


Fig. 2: Walking distance to drugstore

At the same time in these people have the experience of buying drugs is 27.31%, browse the relevant page is 40%, then in which the attitude of online shopping drug analysis, once purchased online drugs and support the drug network sales is 54.2%, visited the relevant site but did not support the number of drug online shopping accounted for 35%.

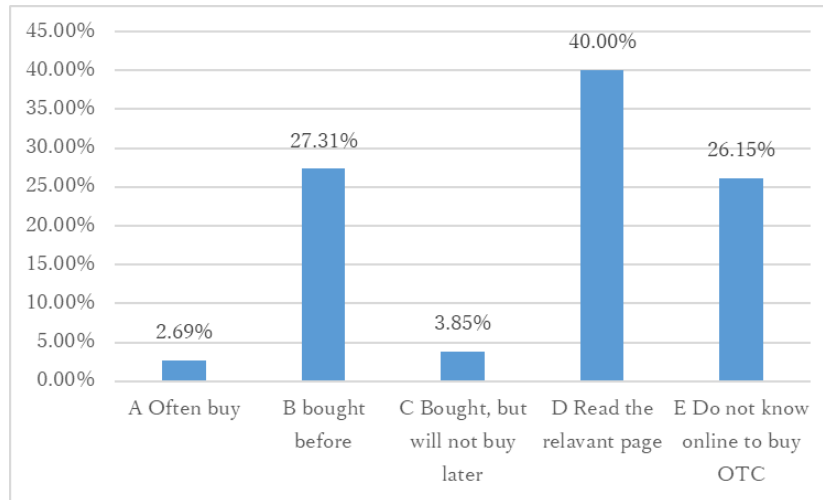


Fig. 3: History of OTC pharmaceutical purchases online

Table 3 Cross-tabulation of agreement to purchase OTC and the experience of purchasing OTC

You know how to buy OTC drugs on the Internet	Have you ever tried to buy OTC drugs online?				
	Often buy (%)	Bought before (%)	Bought but will not buy again (%)	Read the relevant page (%)	Do not know how to buy OTC drugs online (%)
Agree	6.8	54.2	1.7	27.1	10.2
50% agree	1.1	25.8	3.4	42.7	27
20% agree	1.7	6.8	6.8	49.2	35.6
Disagree	2.5	30	5	35	27.5
Did not consider this problem	0	0	0	53.8	46.2

For most people who choose not to buy drugs online, one of the reasons is unclear qualifications about the relevant knowledge of the site. In the country in which the site operates, there should be certification that the business is a legitimate online drugstore. Through the GSP certification, there are a number of entities linked to drugstores that are engaged in Internet drug information services and trading services, and these should provide prominently marked “Internet drug information service qualification” certificates or “Internet drug trading service qualification” certificates. The drug trade certificate is linked to the official website of the Drug Administration. Even with such strict rules, in the author's survey, 62.5% of consumers could not ascertain the legitimacy of the site, and did not want to know the relevant knowledge. This is a very fatal blow for the online pharmaceuticals market, as consumer trust in online pharmaceutical shopping is not high, and no matter what steps China takes to strengthen the industry's management system, difficulties will remain in securing legitimacy for independent identification in the eyes of consumers (Table 4) (Fig. 3).

From the perspective of delivery needs, online drug shopping is very convenient for consumers, and up to 100% of customers are most concerned about the delivery of personnel services, and rather than being concerned with buying drugs within 20 minutes of the consumer's network, safety of delivery is more prevalent. These two points for the delivery of network drugs are very difficult to achieve. On the one hand, although the state requires that the delivery of drugs must meet the GSP for the preservation of drugs, avoid confusion, and have a contingency plan, the consumer obviously remains very worried about safety during transportation. From the perspective of data, it is difficult to grasp service by the delivery staff, as the standard of delivery does not involve the delivery of personnel services standards. From an industry perspective, logistics service quality of service attitudes have to be improved. As the medical electronics business grows, the next big issue for discussion will be user experience of this business.

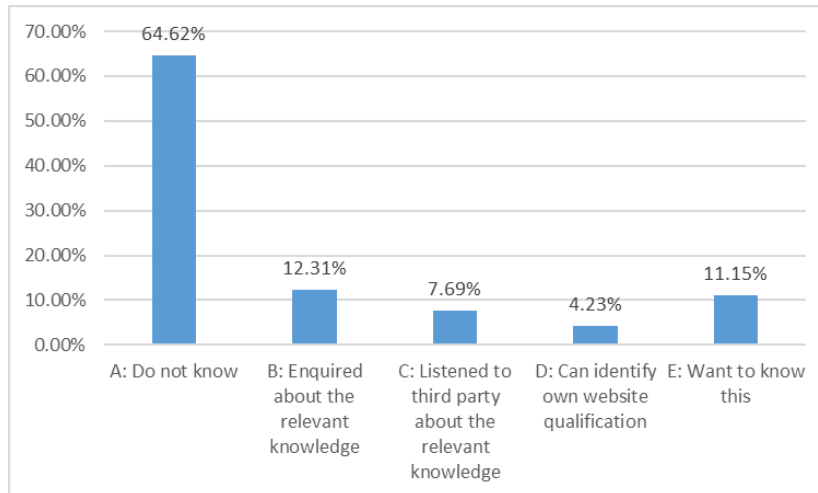


Fig. 4: Knowledge acquisition when buying drugs via the Internet

Table 4 Cross-tabulation of agreement to purchase OTC and consciousness of relevant knowledge

You know how to buy OTC drugs on the internet	You are online to buy OTC drugs, and you are required to review the qualifications of the relevant knowledge of the product				
	Do not know (%)	Enquired about the relevant knowledge (%)	Listened to third party about the relevant knowledge (%)	Can identify own website qualification (%)	Want to know this (%)
Agree	44.1	23.7	10.2	10.2	11.9
50% Agree	71.9	13.5	3.4	1.1	10.1
20% Agree with	74.6	8.5	8.5	1.7	6.8
disagree	62.5	2.5	12.5	7.5	15
Did not consider this problem	69.2	0	7.7	0	23.1

Table 5: Cross-tabulation of the walking distance and requirements for delivery

Walking time from the drugstore or hospital where you recently bought medicine	What are the requirements for delivery of OTC drugs to your network?				
	Concerned about delivery time (%)	Concerned about transportation safety (%)	Concerned about delivery price (%)	Concerned about service of transportation staff (%)	Of these more concerned about these (%)
10 minutes or less from home	25.1	29.4	4.3	3.7	37.4
10–20 minutes from home	15.6	34.4	6.3	9.4	34.4
More than 20 minutes from home	11.8	58.8	5.9	0	23.5
Need for transportation	17.4	30.4	8.7	0	43.5
Very difficult to buy	0	0	0	100	0

DISCUSSION / ANALYSIS

With the rapid popularization of the mobile Internet, young people are choosing their mobile devices for online shopping over their personal computers at home, according to the summary information of our respondents. We understand this to mean that the retail shop has becoming convenient, based on walking distance to drugstore. From this set of data, we found that most people had browsed the websites but did not purchase, in other words, encountered problems while browsing the site (purchase of OTC pharmaceuticals).

From the current mode of operation of the medical electronics business, we found the following commercial forms. B2B changed the method of manufacturing transactions, while B2C, and consumer-to-consumer (C2C) business changed retail sales and people’s consumption lifestyle, respectively. The B2B/B2C/C2C business model is the biggest limitation to “user experience, and from the survey, it is found that with user experience and the growing demand for products and services, a single online model highlights the bottleneck. Online-to-offline (O2O) is clearly effective to solve this problem, and the O2O model has become the new model for e-commerce, offering new directions. Offline services cannot be a boxed delivery, and speed itself cannot surpass the social experience of joy. However, through the O2O model, the range of goods or services on display, and the provision of online payment broadens consumer choice, and enables online

comparison for the best service. The vitality of the Internet makes the online B2B/B2C/C2C model successful, but what occurs under the line cannot be controlled, and these extensive transactions cannot improve the efficiency of e-commerce transactions. The biggest advantage of the O2O model is the traceability of each transaction, or the traceability of the promotion effect. On the one hand, through the online platform, businesses can import more users, and improve their efforts to collect user consumption data to help businesses market accurately. On the other hand, the line of business resources can be fully tapped, so that users can enjoy more convenient and more appropriate products or services.

CONCLUSION

In our view, first, the open O2O model is more conducive for the development of OTC drugs, it can be replaced from the conventional system. But it is important to continue to absorb the success factors, such as through strengthening the website and consumer preferences for purchase methods, innovation, and differentiation services.

Second, in compliance with national laws and regulations, the medical electronics industry should provide education for consumers. Businesses should take the initiative, and through education, can turn existing consumers into long-term supporters.

Third, there is a specific need for symptomatic drug medication, and the need for timely treatment and other characteristics creates opportunities for innovation to meet the needs of users of products and models, so that businesses should gradually optimize the user experience and improve service quality.

Fourth, a regional distribution mechanism should be established to create a brand of team services and strengthen consumer awareness of identity.

Fifth, the Internet of Things (IOT) will influence the medical electronics business, from remote medical analysis in the cloud to logistics using the IOT, Low-Power Wide-Area Network technology in warehouse management, and drug delivery supervision. Consumers can choose their own distribution for each case. In addition, regional data collection and analysis of the extensive applications of drugs will enable intelligent control of subversive changes in future medical Internet integration, laying the foundation for prescription drugs over the Internet market, online health insurance payments, and other attempts to promote this role.

Sixth with regard to intelligent services, in 2017, major public hospitals in Shanghai took the lead in introducing semi-automatic drug machines for the future, which could develop into fully automated automatic drug dispensers, although there is still a long way to go in real medicine separation. In hospitals, drugstore outlets could provide automatic drug machines, with online digital codes replacing the traditional practice.

In this way, consumers could take their own medicine, reducing both their waiting time and potentially improving the quality of service.

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