

Pharmaceutical Wholesalers Service in Macao: An Investigation from the Perspective of Stakeholders

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Abstract

As an important role in the pharmaceutical products circulation, pharmaceutical wholesalers are experiencing dramatic change in Macao. This paper studies the role and management of pharmaceutical wholesalers from the stakeholders' views. Using questionnaire survey and interviews with pharmacists and physicians from community and hospitals, this paper analyzes the practices of pharmaceutical wholesalers and provides suggestions for the internal and external management of pharmaceutical wholesalers, aiming to improve the service of pharmaceutical wholesalers in Macao.

Keywords: Pharmaceutical wholesalers, Macao, Stakeholder, Physician, Pharmacist

1. Introduction

As an important role in the pharmaceutical industry in Macao, pharmaceutical wholesalers are experiencing dramatic change. Traditionally, wholesalers' roles are mainly responsible for the transportation and logistics of drugs. However, many new functions of wholesalers, such as drug promotion and just-in-time service, have been endowed to wholesalers in recent years. Tierney (2004) showed the delivery pressure of wholesalers required by just-in-time service of pharmacies and hospitals with high levels of accuracy in Europe. De Magalhaes & De Sousa (2006) also revealed that the wholesaler need to take the responsibility of stocking activity as pharmacies tended to have orders several times in a day. Macao, which is a limited place, is in the similar situation. Therefore, it is very important for drug wholesalers to position themselves properly in the pharmaceutical industry chain and provide services accordingly, in order to meet the expectations from public. It demands pharmaceutical wholesalers to understand the opinions and requirements from related stakeholders such as hospitals and pharmacies which usually have close relationship with wholesalers.

Besides of pharmaceutical wholesalers collaborating with pharmaceutical firm, the time that wholesalers spend to contact their direct customers like hospitals and pharmacies is increasing. Niaz, Muhamad, & Abdul (2009) concluded that customers' satisfaction links with quality of service. It has turned into a core marketing instrument which increased the satisfied members of the supply chain by putting aside the traditional arms-length relationship and by developing closer relationship arrangements. The relationships between wholesalers and stakeholders can be summarized into three aspects. *First, transaction.* Schofield (2006) mentioned that transaction is the basic relationship between wholesalers and stakeholders. Hospitals and pharmacies provide needs, and wholesalers satisfy the needs. Collaboration is established during this process. *Second, cooperation.* Wholesalers and the stakeholders realize the respective demands through their coordination. Doucette (1997) pointed out that pharmacies always want to dispense medicine for customers with less time, but their inventory may not store every single drug that the customers needed. If pharmacies deal with wholesalers that daily delivery and no minimum purchasing quantity, both sides can minimize inventory on site that can avoid the loss caused by drug slow-moving and over expired day. Meanwhile, the both sides still keep a constant market share and profit. This is a win-win situation. *Third, coordinators between pharmaceutical firms and the stakeholders.* Kimanyi (2005) characterized pharmaceutical wholesalers as the intermediaries who are the bridge between manufacturers and customers such as pharmacies and hospitals. Wholesalers connect the pharmaceutical firms and stakeholders by communication, regarding the information of products such as the allocation, quality and feedbacks of customers. Furthermore, wholesalers are responsible for the communicating with both sides about the after-sale service.

2. Method

2.1 Background of pharmaceutical wholesalers in Macao

Due to the regional limitation, the pharmaceutical manufacture of Macao is relatively vulnerable. According to the statistic data that provided by Government of Macao Special Administrative Region Health Bureau (SS), there are 19 pharmaceutical manufactures in Macao until 2009, including 15 traditional Chinese medicine (TCM) manufacturers, 2 pharmaceutical manufacturers and 2 pharmaceutical manufacturers with TCM. Only 7 manufacturers have Good Manufacturing Practice licenses, occupying 36.8% of total manufacturers in Macao. Besides, drugs and medical products provided to SS in 2009 were totally 1,100; only 6 of them were provided by Ashford Laboratories (Macao) which occupied less than 1% of total amount. The result reveals that manufacturers in Macao are limited and most of drugs are needed to be imported.

The main drug consumers in Macao are hospital, private pharmacy and wholesaler. There are 3 hospitals in Macao which are Hospital Centre S. Janeiro, Kiang Wu Hospital and The University Hospital. Moreover, SS set up 6 health centers and health stations to supply primary health care service. The population of Macao in 2009 was 542,000 and the health centers serviced 523,782 outpatients. The average of daily outpatient was about 1,746 (counted as 300 working day). The attendance of the year was 162,569. In 2008, the outpatients were approximately 8,000 in 5 days of a week. The above information shows that the demand is large for health care and drugs whereas supply for drugs is very limited, which makes the role of wholesalers become significant. Moreover, drug shortage caused by failure of wholesalers' responsibilities might have severe consequences.

For private pharmacy until 2009, Farmacia Popular, Farmacia Lap Kei, Farmacia Pharmicare and Farmacia Tsan Heng occupied 52.34% market share of SS outpatient department prescriptions. It clearly shows that the market share of pharmacies is highly concentrated. For wholesaler, on the basis of Despacho do Chefe do Executivo n.º 353/2010(Chui Sai On, 2010), SS signed the contract with 6 wholesalers regarding the supplying drugs and other medical products for Macao in 2010. The total sales amount of medical products was MOP 283,174,373.20. These 6 wholesalers are the top holders of market in Macao which are Four Star Companhia Limitad, Firma Chun Cheon, The Glory Medicina Limitad, Hong Tai Hon, Agência Lei Va Hong Limitad, Cheng San Limitad. Retrospective investigation of 2001 to 2010 of SS amount share, these 6 wholesalers control the most of contracts from SS and they share 77.79% in the market in 2001. It raised to 98.37% in 2010 (Chui Sai On, 2010; Ho Hau-wah, 2007, 2001). In 2010, over 70% market share was occupied by Four Star Companhia Limitad and Firma Chun Cheon. The market of wholesalers in Macao is trended to be concentrated and monopolized.

2.2 Sampling

Through questionnaires and interviews with the demanders who are pharmacists and physicians, the research set up closed-ended questions to observe the role of wholesalers in market, internal and external management. These 41 interviewees are categorized into four groups accordingly (As shown in Table 1).

3. Results

3.1 Role of wholesalers

According to Table 2, column (1), (4) and (5) were considered as more important for demanders in customer services. Column (1) and (3) were considered as normal important level. After the interviews with the demanders, different groups of demanders had different comments of wholesalers' service.

The job of order, stocking and transportation by pharmaceutical wholesaler is generally agreed by all interviewees. Simplified customer's restocking by providing an efficient order and supply service is a main function of wholesalers. Due to the limitation of inventory in clinic, hospital and community pharmacies, the service of order and stocking of wholesalers provide them a very convenient assistance.

For drug promotion, only physicians from hospital considered the promotion of drug is significant. It is because physicians need to know the main information of drugs for prescription in depth. The promotion of drug by wholesalers is one of the main sources of drug information for physicians. On the other hand, pharmacists and physicians from clinic focus on the other roles of wholesalers considering related to the different job duty of pharmacists and physicians.

The price of most drugs is made by the pharmaceutical manufacturers. Hence, wholesalers and demanders lacked of the bargaining power. To the physicians from hospital, the effectiveness is of more consideration than the price. Besides, drug registration, import and export have relatively higher priority to the stakeholders. Registered licenses are needed for drugs in Macao market including import and export. Therefore, wholesalers have played an irreplaceable role since they are the only one can register licenses. Generally, demanders will not request the wholesalers for the import and export license when they take order. All drugs on Macao market are legal under Departamento dos Assuntos Farmacêuticos (DAF, a department administered drug staff at Macao) in a general situation. Consequently, demanders may ignore the detail process of registration, import and export, while but the physicians from hospital care about the details of this role due to the needs of new drugs.

For the physicians from clinic and the pharmacists from hospital, the importance of after-sale service is average while it is relatively prior overall of all roles. However community pharmacists consider this role is the most significant. Because community pharmacies required better after-sale service as they have difficulty to adjust the stocks of drugs. The constant stock of drugs in community pharmacies can cause drugs expired. Unlike the hospital and clinic can adjust the consumption of drugs through physicians' prescription. Therefore, the after-sale service provided by the wholesalers has a significant impact to community pharmacies.

According to the result of analysis, the definition of wholesalers' role should be varied when they are dealing with different demanders. For the pharmacists from hospital, wholesalers need to strengthen the column (1) and (4) to ensure the supply of drugs. For community pharmacists, the after-sale service needs to be arranged properly. For hospital physicians, the promotion of drug and drug information should be more professional. For clinic physicians, wholesalers should focus on the 'order, stocking and transportation'.

3.2 External management

In terms of criteria of selecting wholesaler in the process of procurement, the importance of criteria of demanders in the process of procurement is in order as 'Product quality', 'Lead time and reputation', 'Supplying ability', 'Product cost', 'Technology ability', 'Service', 'Coordination ability' and 'Salesman's personal ability'. At demanders' side, 'Product quality' and 'Lead time and reputation' outweigh the other criteria (As summarized in Table 3).

On-time delivery is a critical element of customer services. The failure of delivery may cause the stock shortages which bring the result in sales lost to alternative products and the risk of lost costumers. 'Product quality' is the most important criterion overall. Demanders considered that unqualified drug would delay the recovery of illness or worse. But still some demanders considered that 'Product cost' is more critical for them, they tend to buy the products with lower price or bargain with wholesalers. Some physicians from clinic can prescribe more expensive drugs with better quality in order to earn more profit by using less quality drugs for patient at the first medication. This example shows that demanders chose 'Product cost' as the most important criterion is led by profit.

Generally profit is the primary purpose of operating community pharmacies and they care 'Product cost' more than other aspects. But if customers request for some special or expensive drugs, pharmacies also will satisfy the demands avoiding the loss of customers. For hospital, plenty of procurement is related to hospital's profit and patients' right. Hospital need to balance product quality and product cost. Meanwhile, supplying ability is same important because stockout will bring the inconvenience to patients and physicians, or bring risk to patient. As Gary (2005) stated, price

is not the sole criterion in supplier's procurement which deals with the costs in all the related supply chain activities.

3.3 Internal management

Table 4 shows the result of investigation about the management of wholesalers. 'Stockout' was the main problem that needs to be improved. Likewise, 'After-sale service', 'Technical information of products' and 'order fulfillment' also need attention.

According to the investigation, 'Stockout' needs to be improved unanimously. The reasons are patients will not have a reasonable treatment that caused by stockout and the stockout of emergency medicine will place patients' life in risk.

Demanders consider 'Personnel changes' has less impact comparing to stockout since 'Personnel changes' will not influence patients' consumer behavior. And wholesalers have a department which is special for fulfilling the order to eliminate the 'Personnel Changes' effect on the sales of medicine.

'Training of staff' is at an average level of importance. Wholesalers will clearly communicate to the stakeholders that how they can help on their business processes to achieve the success. It can establish the trust, loyalty and benefits between the stakeholders and wholesalers.

Some of community pharmacists demand better management of markup. The markup of price should clearly show to demanders, which help them consider whether they can accept or not. Comprehensive collaboration and communication between wholesales and demanders can improve the service of wholesalers.

4. Discussion

4.1 Role definition of pharmaceutical wholesaler

Doucette (1997) stated that the quality of service affects the cooperation and relationship between stakeholders and wholesalers. It is believed that searching the role of wholesaler in trading is the way to maintain the high quality of service. The role of 'Order, stocking and transportation' is the most important service offering by pharmaceutical wholesalers, which is consistent with the argument of Macarthur (2007). Wholesalers should have clear information about the amount of products in stock in order to predict demanders' replenishment in inventory. As the result said, the role's definition of wholesalers is different based on the different characteristics of demanders.

4.2 External management of pharmaceutical wholesaler

The detail content of 'Product quality' included 'efficiency and reliability of delivery service', 'Drug effectiveness', and 'Drug safety' which are the most important requirements on the procurement process. In fact, wholesalers cannot control product's quality; but when wholesalers take over the products, it will affect the process of transportation and storage. Hence, wholesalers should strengthen the management of transportation and storage which benefit to the development of wholesalers. It brings the chances of collaboration with other pharmaceutical manufacturers and enhances the demanders' trust in wholesalers, which could help to ensure drug delivery as required as most crucial (Herald, 2002).

Reputation is the prior important criterion in 'Lead time and reputation'; because reputation reflects the quality of products and services. Lead time means the accuracy and the commitments of taking order. Comprehensive collaboration and communication are needed for wholesalers and demanders that can help the wholesalers to adjust and achieve the accuracy of lead time. It can improve the customer service for demanders to lower the safety stock and reduce out-of-stock loss. Sales forecasts and goods inventory can be improved through the joint responsibility of inbound and outbound inventory, and the lead-time can be improved correspondingly. Moreover, wholesalers also need to pay attention on the stock and have good internal communication for achieving to achieve the commitments.

The result of 'Salesman's personal ability' shows that this criterion is at an average important level. Indeed, there are many similar products on market which have no specificity such as generic drugs; the ability of salesman can have a certain effect to the demanders.

4.3 Internal management of pharmaceutical wholesaler

'Order, stocking and transportation' is regarding the most important service leads 'Stockout' is the most critical problem to wholesalers. It shows that no matter how excellent the promotion of products is, the problem of stockout still cannot be solved and the quality of service cannot be improved. In addition, the cost of keeping inventory is significantly to keep up high customer services.

Meanwhile improvement for after-sale service, Technical information of products and order fulfillment are needed to be improved. Marcelo (2009) points out, customers depends on physician's prescription when they do not have

discretion over their purchasing decisions. Wholesalers provide information to the physicians in order to create the demands of drugs. Thus, they should get the technical information of their products comprehensively to improve the quality of service and business. Otherwise, Kaufmann (2005) indicates that 'Training of staffs' is very important and it should go through market data and technical information. All of these in fact highlight the importance of communication as suggested by Thani, Ravi, & John (2009).

5. Limitations

The method of research of this paper does not consider the scale of wholesalers and scope of business. Wholesalers may be different in the range of service. The feedback and suggestions may not cover or suit for all wholesalers in Macao.

For the subsequent of research, the wholesalers in Macao can be stratified by firm's size. Business product or target audience observe and analyze their quality of service and business model combining with the distribution and business model of wholesalers. It needs to find the more suitable management and development of Macao's wholesalers to improve the existing problems of service.

6. Conclusion

Different demanders require the varied services. The definition of wholesalers' role and the market behavior of wholesalers are consistent. At the quality of service of wholesalers, product supplied is a main problem. Wholesalers need more attention on improving the external management. "Order, stocking and transportation" is regarded as the most important service and the "Stockout" problem is hard to be solved by excellent promotion of products. It is believed that wholesalers may improve service through the awareness of stakeholders' needs.

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Table 1. Four groups of interviewees

Profession	Hospital pharmacist	Community pharmacist	Physician from hospital	Physician from Clinic	Total
People	10	10	11	10	41

Table 2. Questionnaire of the roles of wholesalers

Roles	Completely not important (1 score)	Not important (2 score)	Average (3 score)	Impor tant (4 score)	Very important (5 score)	Total score
Order, stocking & transportation	0	0	6	17	18	41
Drug Promotion	1	5	11	14	10	41
Pricing & communication with manufacturers	3	2	11	19	5	40
Drug registration, import & export	0	1	10	13	16	40
After-sale service	1	1	6	16	17	41

Table 3. Frequency table of criteria of demanders in the process of procurement (n=41)

criteria in procurement	1	2	3	4	5	6	7	8	Average
Product quality	35	4	1	1	0	0	0	0	1.22
Lead time and reputation	1	16	8	7	6	1	2	0	3.29
Technology ability	0	6	5	7	10	2	5	6	4.88
Product cost	4	4	8	9	1	5	0	10	4.56
Service	0	2	1	7	9	12	4	6	5.56
Coordination ability	0	1	4	3	6	11	11	5	5.83
Supplying ability	1	7	10	5	5	6	6	1	4.29
Salesman's personal ability	0	1	4	3	4	3	13	13	6.32

Table 4. Frequency table of wholesalers' management from demanders

Abilities	Need no improvement	Need slight improvement	Average	Need improvement	Completely need improvement	Total score
Personnel Changes	3	4	22	8	4	41
Trainings of staff (e.g. manner)	3	5	13	14	6	41
Technical information of products	1	5	6	21	8	41
Stockout	0	3	3	14	21	41
Order fulfillment	2	3	12	10	13	40*
Delivery service	1	4	15	14	6	40*
After-sale service	1	4	10	14	11	40*
Payment management	4	8	15	11	2	40*

*: The interviewees were hospital physicians who did not understand the definite options of (5) to (8). Therefore, option (5) to (8) have missing value.