

RESEARCH ARTICLE

Effects of the distribution of product samples to patients and physicians by pharmaceutical companies

Frances Lois U. Ngo*, Monet M. Loquias, Mac Ardy J. Gloria

*Corresponding author's email address: fungo@up.edu.ph

College of Pharmacy, University of the Philippines Manila, Manila, Philippines

ABSTRACT

Background: Distribution of product samples is a typical and traditional marketing and promotion strategy used by pharmaceutical companies. However, issues have been raised about their influence on physicians' prescribing behavior and patients' health outcomes.

Objectives: This study aimed to determine the effects of the distribution of product samples on physicians' prescribing behavior and adherence to patients' treatment regimens. It also sought to provide policy recommendations on product sample distribution and the administrative order on pharmaceutical promotion.

Methodology: The study involved a descriptive design. The study sites were Manila City, Cebu City, and Davao City. Data were collected using focus group discussions, key informant interviews, and surveys among patients and physicians. Content analysis was performed to analyze qualitative data, while descriptive statistics and measures of association were conducted to analyze quantitative data.

Results: A total of four FGDs were conducted with one FGD for each stakeholder group, and 846 patients and 286 physicians answered the study questionnaire. About half (48.0%) of the patients received product samples; 75.8% had low medication adherence. Product sample distribution was not significantly associated with patients' adherence ($p=0.150$). The majority of the physicians (69.2%) received product samples. There was no significant association between product sample distribution and physicians' prescribing behavior ($p=0.111$). It was found, however, that the distribution of product samples was significantly associated with the other physicians' prescribing behavior ($p=0.009$). The issues identified included the influence of medical representatives on physicians' prescribing behavior, incapacity of the poor and marginalized population to complete their treatment regimen due to lack of supply of product samples, and mentality of patients that product samples have better quality.

Conclusion: This study emphasized that the regulation of product sample distribution was justifiable since this might negatively influence professional behavior affecting rational prescribing and the use of medicines. Furthermore, the distribution of product samples did not directly translate to increased patients' medication adherence. Should the distribution of samples be continuously practiced, the provision of product samples should be strictly followed, and the distribution should be regulated and monitored to prevent the occurrence of violative practices.

Keywords: *product samples, medication adherence, prescribing behavior, pharmaceutical promotion, Mexico City Principles*

Introduction

Pharmaceutical companies have been using a multi-faceted approach to pharmaceutical promotion and marketing, including distributing product samples to physicians [1]. With a competitive pharmaceutical market in the country, there may exist an inherent conflict between the industry's need to

augment sales through promotion and ensure public health through medicine development, production, and distribution. This potential conflict predisposes the industry toward unethical promotion practices that can result in undue influences on the prescribing and dispensing decisions of

healthcare professionals, to the detriment of individual patients and the entire health system [2].

In providing the best quality healthcare to patients, it is essential that professionalism and high ethical standards are sustained among pharmaceutical companies, healthcare professionals, and the regulatory body. To achieve this, “The Mexico City Principles (MCP) for Voluntary Codes of Business Ethics in the Biopharmaceutical Sector,” often referred to as the “Mexico City Principles,” was officially endorsed by the Asia-Pacific Economic Cooperation (APEC) in 2011. An Expert Working Group initially drafted the MCP in Mexico City composed of 36 experts representing 14 APEC member economies including small and large industries, government, academe, and civil society. Numerous policies and regulations were developed to regulate pharmaceutical promotion in the country including: (1) the DOH Administrative Order (AO) 2015-053, or the Implementing Guidelines on the Promotion and Marketing of Prescription Pharmaceutical Products and Medical Devices; (2) the Food and Drug Administration (FDA) Circular 2013-024, which called for the adoption and implementation of the MCP across all drug establishments regulated by the FDA, the FDA as an organization and its officials, the healthcare professionals, as well as other stakeholders such as the media and advertising firm; and, (3) the Pharmaceutical and Healthcare Association of the Philippines (PHAP) Code of Practice (2015), which fully adopted the MCP.

Under the MCP, when used appropriately, product samples could be an essential tool for healthcare professionals in providing benefits to patients for optimal health outcomes. This denotes that product samples should not be resold or otherwise misused. Moreover, pharmaceutical companies distributing product samples should have adequate control and accountability systems for monitoring samples.

Nevertheless, numerous published articles have documented the perceived effects of pharmaceutical promotion on physicians' prescribing behavior and patients' medication adherence [3-7]. Most physicians believe and rely on pharmaceutical advertising as a reference for drug information, thus influencing their decision-making process in prescribing [8]. Although minimizing the healthcare cost of patients was considered by the physicians as the main reinforcing factor for dispensing drug samples [9], some studies showed that these samples were not effective in lowering patients' costs, such that when low-income patients are given drug samples and a prescription to fill for the remaining treatment duration, they may still not be able to afford the

cost, which would then lead to patient non-adherence [6]. In the Philippines, however, there is a lack of literature documenting the effects of product samples on patients.

This study aimed to discuss the effects of the distribution of product samples to physicians in terms of their prescribing behavior, and to patients in terms of their treatment adherence. It also sought to provide policy recommendations on the distribution of product samples and the AO on pharmaceutical promotion.

Methodology

The study involved a descriptive, cross-sectional design using both qualitative and quantitative modes of data collection. Qualitative methods of data collection involved focus group discussions (FGDs) and key informant interviews (KIIs). Two sets of surveys conducted among physicians and patients served as the quantitative mode of data collection. The study was conducted from 02 July 2017 to 31 May 2018 in three key cities of the Philippines – Manila City, Cebu City, and Davao City.

The study used six data collection tools – four interview schedules for focus group discussion among patients, physicians, medical representatives, and pharmacists; the same interview schedule for the key informant interview with pharmacists; and two structured survey questionnaires for physicians and patients.

Focus Group Discussions

A total of four FGDs were conducted using an interview schedule with open-ended questions. An FGD was conducted for each stakeholder - representatives of the pharmaceutical industry, professional organization of physicians, pharmacist/pharmacy owners, and patient groups.

Key Informant Interviews

Participants in the KIIs included city health officers of each study site. The interview schedule consisted of open-ended questions regarding product samples which were used to identify the perception of using product samples in the local government units.

There was a total of 22 participants in the FGDs and KIIs. Qualitative data from both data collection methods were transcribed verbatim and manually processed using content analysis. These were subsequently used to improve the survey questionnaire used in the study.

Survey Questionnaire

The sample size was computed to be a total of 846 using the formula below for both patients and physicians, while the participants per study site were allocated based on the population size of the city: 375 for Manila City, 187 for Cebu City, and 284 for Davao City.

$$n = (Z^2 \times P[1 - P])/e^2$$

Where Z is the value from standard normal distribution corresponding to desired confidence level ($Z=1.96$ for 95% confidence interval [CI]); P is the expected true proportion; and e is the desired precision (half-desired CI width). The following assumptions were also made: anticipated % frequency is 50%, confidence limit (absolute precision) of 5% (maximum tolerable error), design effect of 2.0 (due to cluster sampling), and 10% inflation due to attrition loss.

There were two groups of respondents – patients and physicians. The inclusion criteria for patients were the following: (a) at least 18 years old; (b) with no cognitive impairment; and (c) primary decision maker in the household; while for physicians: (a) licensed medical doctor and (b) practicing in either government or private hospitals or clinics.

The survey questionnaires included closed and open-ended questions regarding the participant's demographic information, knowledge about product samples, and perceived advantages and disadvantages. The survey questionnaires for both patients and physician respondents

were pre-tested prior to administration. For the patient survey questionnaire, knowledge questions comprised 8 items ($\alpha=0.8282$), adherence questions consisted of 14 items ($\alpha=0.7604$), and a modified Morisky Medication Adherence Scale was used with 7 items ($\alpha=0.8019$). For the physician survey questionnaire, the magnitude of acceptance in practice questions comprised 14 items ($\alpha=0.8519$), perception of advantage and disadvantage questions consisted of 13 items ($\alpha=0.9143$).

Patients were recruited using two-stage simple random sampling. Each city was stratified based on districts, and each district was separated into barangay levels. From the sampled barangays, households were systematically selected. The head of the household who met the inclusion criteria was interviewed using the survey questionnaire. Overall, the survey included 25 barangays from Manila City, 10 barangays from Cebu City, and 10 barangays from Davao City.

Recruitment of physicians was done through a random selection of DOH-registered clinics and hospitals. The head of selected institutions (or departments) was informed of the study. Informed consent was given to physicians before data collection by any research team members. Due to low response rates from an initial survey of physicians, data collection during medical conferences was performed upon approval of the funding agency. The dates of medical conferences or continuing medical education seminars were obtained from the Philippine Medical Association website.

Table 1. Methodology Matrix of the Study

General Objective	Variables to be Measured	Source of Data	Collection Method/ Instrument	Analysis
1. Determine the effects of the distribution of product samples to physicians in terms of their prescribing behavior	Prescribing behavior	Physicians	Survey Questionnaire	<ul style="list-style-type: none"> Thematic analysis Chi-square test (cross-tabulation) Regression analysis
2. Determine the effects of the distribution of product samples on patients in terms of their treatment adherence	Treatment Adherence	Patients	Survey Questionnaire	<ul style="list-style-type: none"> Thematic analysis Chi-square test (cross-tabulation) Regression analysis
3. Describe the knowledge of patients about product samples	Knowledge	Patients	Survey Questionnaire	<ul style="list-style-type: none"> Frequency statistics
4. Identify the characteristics of patients who use product samples	Socio-demographic for patients	Patients	Survey Questionnaire	<ul style="list-style-type: none"> Frequency and descriptive statistics
5. Determine the magnitude of the distribution of product samples to physicians	Magnitude of distribution	Physicians	Survey Questionnaire	<ul style="list-style-type: none"> Frequency statistics
6. Identify the characteristics of physicians who distribute drug samples	Socio-demographic variables for physicians	Physicians	Survey Questionnaire	<ul style="list-style-type: none"> Frequency and descriptive statistics
7. Identify the advantages and disadvantages of product samples to patients and physicians	Advantages Disadvantages	Physicians Patients	Focus Group Discussions; Survey Questionnaire	<ul style="list-style-type: none"> Thematic analysis Frequency statistics

Permission from organizers was sought. Six conferences were approved to be sites for data collection, and convenient sampling was used for the physician respondents present in the medical conferences. Upon approval, the research team distributed the questionnaires and informed consent forms to all physicians registered for the conference. Both ICF and questionnaires were collected at the end of the conference or during their designated breaks.

Quantitative data collected were encoded in Microsoft Excel 2016®. Frequency, descriptive statistics, and measures of association were generated using Stata 12. Chi-square test and measures of association were used to determine the effects of the distribution of product samples to physicians in terms of their prescribing behavior and to patients in terms of their treatment adherence.

Ethics Approval

The research protocol and amendment were reviewed and approved by the University of the Philippines Manila Review Ethics Board on 09 June 2017 (UPMREB Code 2017-285-01) for ethical clearance before its implementation. All participants were given an informed consent form before data collection to protect their privacy and confidentiality. Moreover, a copy of the research protocol was submitted to local government units for approval and endorsement to respective *barangays*.

Results

Focus Group Discussions

Four focus group discussions were conducted among patients, physicians, pharmacists, and medical representatives. Four patients from various patient organizations comprised the patient group, practicing physicians with varying specialties from both public and private settings were included in the physician group, four pharmacists and owners of independent drugstores were part of the pharmacist group, and six medical representatives offering generic and branded medicines from different private pharmaceutical companies participated in the medical representatives focus group discussion.

It was noted that patient participants were aware of product samples and reported that they had previously received, bought, or used samples, including food supplements and topical preparations, such as anti-inflammatory creams. The participants also stated that the free product samples were helpful for patients in completing their treatment regimens. However, they also stated that a number of physicians sold product samples at lower prices to their patients. Moreover,

they also believed that product samples could influence a physician's prescribing behavior. In addition, they thought direct marketing to patients by pharmaceuticals should be audited and banned.

A second FGD included practicing physicians from public and private settings with varying specialties, such as general practice, internal medicine, and community practice. The physicians shared that medical representatives who provided samples usually came from international companies. These varying product samples included antihypertensives, anti-arrhythmic, anti-ischemic, antidiabetic, nephrologics, keto analogues, pain medications, and antibiotics. They were often distributed to their patients on a first-come-first-served basis or based on socioeconomic status. However, they argued that these might only provide minimal benefit to their patients as they were given one product sample at a time and not the complete regimen. In addition, they also stated that product samples might even promote dependence on the part of patients for free product samples. They also reported the same patient observations – there were physicians who pooled product samples and sold them in their clinics. The physicians' group believed that there was no negative effect of product samples on prescribing behavior and that product samples could establish trust between physician and patient. Furthermore, product samples may even aid them in familiarizing drug efficacy and side effects.

Four pharmacists and owners of independent pharmacies comprised the participants for the third round of FGD. The participants revealed familiarity with product samples, which most commonly included ascorbic acid and paracetamol. The pharmacists reported that product samples were not distributed since it was prohibited and did not provide benefit to patients. However, they also revealed that there were patients who looked for and were willing to buy “S” pharmaceutical products in drug stores, referring to samples, since they perceived these product samples to be more effective than those conventionally sold. The pharmacists' group believed that the distribution of product samples only benefited pharmaceutical companies as patients may patronize the brand, and its benefits for patients were uncertain because of compliance. Moreover, selling product samples is prohibited in any establishment or drug store.

The last FGD was conducted among six medical representatives from private pharmaceutical companies offering generic and branded medicines. The participants reported that companies usually chose the physicians to whom product samples would be given and may also distribute samples according to their preference. The most common

product samples included supplements, cough syrups, pain medications, and multivitamins. This FGD group regarded the distribution of product samples as a means to build a patient-physician relationship, promote familiarity with the brand, and initiate treatment regimens for patients. The participants also believe that product samples helped increase sales for their respective pharmaceutical companies. As already regarded by the previous FGDs, the medical representatives also agreed that some pharmacies sold product samples for discounted prices since there was no monitoring system among them regarding product movement.

The important issues raised by different groups are presented below (Table 2).

Practice in Selected City Health Offices

The KIs were conducted with city health officers of Cebu City and Davao City to assess their knowledge and perception of the distribution of product samples.

The acceptance of product samples in city health offices was attributed to the limitation of procurement of medicines to the list in the Philippine National Formulary. Medicines not part of the formulary were being dispensed using the product samples, while product samples were also dispensed when drugs became out of stock.

Although samples had been provided for hypertension, diabetes, vitamins, and antimicrobial therapy, it was noted that patients would not save much from product samples because physicians could only provide a few doses and not the whole regimen. The issues identified were the possibility of the physicians' prescribing behavior being influenced by the visits of medical representatives and their distribution of product samples, the incapacity of the poor and marginalized populations to continue their treatment regimen once their supply of product samples had been depleted, and the mentality of patients that product samples have better quality as compared with drugs sold in the pharmacies.

Table 2. *Summary of Results of Focus Group Discussions*

Discussion Group	Key Findings
Patients	<p>[1] Have you ever received product samples? When? Yes, the physician either provides product samples for free or sells them to the patient when the indication warrants the product sample.</p> <p>[2] How do you think product samples affect physicians? Negatively affects physician practice (e.g. selling of product samples to patients) and influences the prescribing behavior of physicians.</p> <p>[3] Have you tried asking for product samples from your physician? When and why? Patients who are aware of the presence of product samples ask for them from the physician; while some doctors sell product samples through their clinics which they call 'black markets'. Patients usually ask for product samples to save money in buying medicines.</p>
Physicians	<p>[1] How do product samples affect physicians? No effect at all. Physicians acknowledge that product samples are beneficial to patients when they cannot afford to buy medicines.</p> <p>[2] How do product samples affect patients? Minimal impact on patients because they are usually provided with only one product sample for the entire duration of treatment. After taking product samples, some patients buy the cheaper alternative.</p> <p>[3] Should the distribution of product samples be continued? Product samples must be discontinued because some physicians pool the samples and sell them in their clinics.</p>
Pharmacists	<p>[1] How do product samples help pharmacists? Some community pharmacies sell "S" which increased their product sales. Generally, there is no benefit since pharmacies do not distribute product samples.</p> <p>[2] Do you think product samples should be distributed to patients? How? It would depend on the reason and intention for distributing product samples, e.g. brand retention and product familiarity, introduction of product to health care providers, and bribery.</p>
Medical Representatives	<p>[1] How do you choose which drugs to give as product samples to doctors? The company management chooses the doctors to give product samples to but when the assigned physicians have already been catered, medical representatives can also give samples to their preferred doctors.</p> <p>[2] How do physicians react to product samples? Physicians actively seek product samples from medical representatives, while the goal of the latter is brand awareness.</p> <p>[3] How do you think product samples help physicians? It helps in building physician-patient relationship. Doctors become updated on the current brands present in the market and can be provided as a 'taste test' for new drugs in the market.</p> <p>[4] How do you think product samples help patients? Product samples help to start the treatment regimen of those who do not have money to buy medicines. Patients tend to want to take product samples more than those bought in drugstores because of the notion of 'increased potency' of samples.</p> <p>[5] How does distributing product samples help the pharmaceutical industry? The industry can identify and profile physicians through product samples. The samples also provide repeat orders and boost the business with as much as 20% increase in sales.</p>

Nevertheless, CHOs still believed that product samples could help patients achieve better health outcomes. However, they added that samples should be given in larger amounts to provide the whole treatment regimen for patients. They also suggested distributing product samples for branded medicines since generic drugs were already being sold at a lower price, which could be given as an alternative to branded product samples.

Effects of Product Samples on Patients

A total of 846 patients responded to the survey. About half of the patient respondents (47.6%) reported that they have already received product samples given by physicians, with majority of patient respondents who have received product samples coming from Manila (18.3%) (Table 3).

It was also noted that the top three samples received by the patients were vitamins (27.9%), antihypertensives (15.4%), and food supplements (11.2%) (Table 4). Patient respondents have claimed that they received only a few doses (36.5%) or one piece (33.1%) from physicians.

When product samples run out, most patients bought the same brand from the pharmacy (60.2%) or purchased the generic alternative (55.7%). A notable finding was that 20.5% of independent drugstores actually sold product samples to patients.

Medication adherence of patient respondents receiving product samples was measured and it was found that only a minority of 3.9% of patients were highly adherent to their medication therapy. In comparison, 75.8% were classified under low adherence. Furthermore, there was no significant association ($p = 0.150$) between the distribution of samples and patients' adherence to their medications.

Effects of Product Samples on Physicians

There were 286 physician respondents to the survey, and the response rate for the survey questionnaire was 95%. The majority were females (65.7%), practicing fellows

(30.4%), with a private clinic (71.8%) in urban areas (75.1%). These physicians have reported that product samples are useful in improving adherence (75.8%), saving money (80.6%), and easing financial burden (81.0%). These physician respondents were recorded to have found it acceptable to receive product samples from medical representatives of pharmaceutical companies as a form of promotion (76.0%). Table 5 further shows the level of awareness of physicians with product samples.

In addition, 70.2% thought product samples influenced their prescribing behavior, while 75.5% suggested that product samples influence other physicians' prescribing behavior (Table 6). There was no significant association between the distribution of product samples and physicians' prescribing behavior ($p=0.111$), but there was a significant association between its distribution and other physicians' prescribing behavior ($p=0.009$). The primary reason why physicians provided product samples to patients was to help them save money (77.0%). Meanwhile, allowing patients to start their treatment immediately was the benefit perceived by 84.4% of the respondents.

Discussion

Data collected from the FGDs, KIIs, and survey questionnaires indicated that patients may benefit from the distribution of product samples. Stakeholders agreed that product samples may be helpful in patient compliance and adherence. However, they also reported that product samples are unethically sold at lower prices in different establishments and clinics. Moreover, the study participants had contrasting perceptions of how product samples influence physician prescribing behavior.

The promulgation of the Administrative Order (AO) 2015-053, or the Implementing Guidelines on the Promotion and Marketing of Prescription Pharmaceutical Products and Medical Devices, marked the government's initiative to regulate pharmaceutical promotion in the country. It contains a provision to regulate the distribution of product samples.

Table 3. Awareness on Product Samples among Patients

Question	Choices	Manila	Cebu	Davao	Total
Are you aware of the distribution of product samples?	I have received it	155 (18.3%)	104 (12.3%)	144 (17.0%)	403 (47.6%)
	I am aware of it	134 (15.8%)	50 (5.9%)	98 (11.6%)	282 (33.3%)
	It is the first time I heard about it	83 (9.8%)	30 (3.5%)	40 (4.7%)	153 (18.1%)
	I am not sure	3 (0.3%)	3 (0.3%)	2 (0.2%)	8 (0.9%)

Table 4. Reception and Behavior of Patients with regard to Product Samples

	Variable	Manila	Cebu	Davao	Total
Types of product samples received	Antihypertensives	51 (6.0%)	26 (3.1%)	53 (6.3%)	130 (15.4%)
	Antidiabetics	21 (2.5%)	13 (1.5%)	23 (2.7%)	57 (6.7%)
	Nephrologic drugs	1 (0.1%)	0 (0.0%)	2 (0.2%)	3 (0.3%)
	Antibiotics	33 (3.9%)	27 (3.2%)	11 (1.3%)	71 (8.4%)
	Erythropoietin	0 (0.0%)	0 (0.0%)	1 (0.1%)	1 (0.1%)
	Pain medications	42 (5.0%)	25 (2.9%)	45 (5.3%)	112 (13.2%)
	Nutritional support	15 (1.8%)	8 (0.9%)	10 (1.2%)	33 (3.9%)
	Vitamins	81 (9.6%)	63 (7.4%)	92 (10.9%)	236 (27.9%)
	Food supplements	43 (5.1%)	13 (1.5%)	39 (4.6%)	95 (11.2%)
Ways of obtaining product samples	Asking from physicians	57 (6.7%)	25 (2.9%)	44 (5.3%)	126 (14.9%)
	Freely given by physicians	103 (12.2%)	110 (13.0%)	107 (12.6%)	320 (37.8%)
	Buying from the pharmacy	17 (2.0%)	12 (1.4%)	47 (5.6%)	76 (9.0%)
Purchasing product samples in the pharmacy	Independent drugstore	69 (8.2%)	27 (3.2%)	77 (9.1%)	173 (20.5%)
	Chain drugstore	58 (6.9%)	8 (0.9%)	93 (11.0%)	159 (18.9%)
Frequency and amount of product samples received by patients	Complete treatment regimen	85 (10.0%)	15 (1.8%)	72 (8.5%)	172 (20.3%)
	Few doses	107 (12.6%)	93 (11.0%)	109 (12.9%)	309 (36.5%)
	One piece	85 (10.0%)	85 (10.0%)	110 (13.0%)	280 (33.1%)
Practice of patients when product samples run out	Return to the physician to ask	116 (13.7%)	21 (2.5%)	80 (9.5%)	217 (25.6%)
	Consult with another physician to prescribe a cheaper drug	136 (16.1%)	32 (3.8%)	93 (11.0%)	261 (30.8%)
	Buy the same brand from the pharmacy	209 (24.7%)	107 (12.6%)	193 (22.8%)	509 (60.2%)
	Purchase generic version	182 (21.5%)	89 (10.5%)	191 (22.6%)	471 (55.7%)
	Stop taking drug	136 (16.1%)	75 (8.9%)	78 (9.2%)	289 (34.2%)

Table 5. Awareness of Product Samples among Physicians (n=273)

Question	Answers	Manila	Cebu	Davao	Total
Are you aware of the distribution of product samples?	I have received it	84 (30.8%)	63 (23.1%)	42 (15.4%)	189 (69.2%)
	I am aware of it	36 (13.2%)	26 (9.5%)	21 (7.7%)	83 (30.4%)
	It is the first time I heard about it	0 (0.0%)	1 (0.4%)	0 (0.0%)	1 (0.4%)
	I am aware of it	119 (43.6%)	89 (32.6%)	63 (23.1%)	271 (99.2%)
	It is the first time I heard about it	1 (0.4%)	1 (0.4%)	0 (0.0%)	2 (0.7%)

Product samples are considered one of the most common methods by which companies market their pharmaceutical products [7,10,11]. The pharmaceutical industry has heavily invested in providing free sample medication to prescribers since these were found to induce the prescription, supply, purchase, and use of their medicinal drugs.

However, numerous studies have shown that such samples have a negative impact on both the evidence-based practice and the cost of medical care, such that healthcare providers carrying product samples had prescribing choices that were more expensive and less guidelines-based [12,13]. Moreover, few studies have found that these samples often

Table 6. *Perception of physicians towards product samples*

Variable		Manila	Cebu	Davao	Total
Perception of physicians on effects of product samples	Influence own prescribing behavior	87 (31.9%)	70 (25.6%)	44 (16.1%)	201 (70.2%)
	Influence other's prescribing behavior	98 (35.9%)	71 (26.0%)	47 (17.2%)	216 (75.5%)
	Inform patients of the presence of generic counterparts	108 (39.6%)	83 (30.4%)	57 (20.9%)	248 (86.7%)
	Provide service to patients	95 (34.8%)	72 (26.4%)	39 (14.3%)	206 (74.3%)
	Develop brand awareness	99 (36.3%)	63 (23.1%)	40 (14.6%)	202 (72.9%)
	Increase preference of the brand	70 (25.6%)	52 (19.0%)	36 (13.2%)	158 (57.0%)
	Establish physician-patient relationship	67 (24.5%)	61 (22.3%)	34 (12.4%)	162 (58.4%)
Reasons product samples are given to patients	Determine the effectiveness of drug	60 (22.0%)	34 (12.4%)	18 (6.6%)	112 (40.2%)
	Help save money	93 (34.1%)	80 (29.3%)	42 (15.4%)	215 (77.0%)
	Encourage patients to go back to consultations	47 (17.2%)	37 (13.5%)	22 (8.1%)	106 (38.3%)
Benefits of product samples to patients	Allow to try the effectiveness before filling a prescription	68 (24.9%)	59 (21.6%)	29 (10.6%)	156 (56.7%)
	Make expensive medicines more accessible	76 (27.8%)	68 (24.9%)	33 (12.1%)	177 (63.9%)
	Assist uninsured patients with financial needs	83 (30.4%)	74 (27.1%)	36 (13.2%)	193 (69.7%)
	Allow to start treatment immediately	106 (38.8%)	83 (30.4%)	46 (16.8%)	235 (84.8%)
	Help adhere to prescribed medication	80 (29.3%)	65 (23.8%)	31 (11.3%)	176 (64.2%)
	Help save money	93 (34.1%)	78 (28.6%)	43 (15.7%)	214 (79.8%)

reach the wrong people and are frequently misused. Thus, they were shown to be ineffective in improving drug access for the poor and vulnerable populations [6].

Although many physician respondents were confident to report that product samples have not influenced their prescribing behavior, only half of them always informed their patients that generic counterparts of the product samples could be bought. This finding coincided with the conclusion of some studies that physicians do not realize the extent to which their medical judgment was influenced by their acceptance of product samples [14].

Furthermore, medical representatives have confirmed that providing products psychologically impacts the physician's prescribing behavior through brand retention of the drug. This also implies that physicians' perceptions of product samples vary and do not necessarily match their behavior. The lack of information among patients about generic equivalents would mean that patients, who were unaware of the generic equivalent of such sample, would still ask for the same brand of drug from the physician or buy it from the drugstore. Although patients might have financial gain by accepting product samples, this short-term benefit would be quickly offset by the higher prices of medicines

patients have to pay after the samples are provided. This becomes more complex when the samples dispensed were intended for treating chronic illnesses, which was evident in the study wherein most patients had hypertension.

There was a significant association between the distribution of product samples and other physicians' prescribing behavior ($p=0.009$). This key result was similar to the study by Chimonas *et al.* (2009). Physicians, on the other hand, were in a cognitively conflicted situation since they were unlikely to be influenced by the biasing effects of product samples, and their colleagues were more likely to be influenced than they would be if they had opinions that were inconsistent with one another. To resolve such dissonance, they used a variety of denials and rationalizations: they avoided thinking about the conflict of interest; they disagreed that industry relationships affected physician behavior; they denied responsibility for the problem, and they enumerated techniques for remaining impartial.

It was found from the study that almost half of the physician respondents never recorded the patients' information to whom the product samples were given, and about one-fourth never followed them up. This meant that the efficacy, safety, and quality of the product samples given

to the patients could not be monitored and assessed. This may lead to a lack of trust in doctors and pharmaceutical companies, a decline of faith in the efficacy of therapy, and an increased engagement in self-diagnosis and self-medication. Likewise, if the distribution was inadequately documented in patients' records, in the event of a product recall, physician clinics or offices might not have been instructed to discontinue distributing the product samples [15,16].

Product samples have been found to be resold in some physician's clinics and independent and chain pharmacies, which are termed "S" and are marketed at a much lower price than the original retail price of the drug. This would create an environment of mistrust in physicians.

Conclusion

The regulation of product samples is important considering that this form of pharmaceutical promotion might negatively influence professional behavior and eventually rational prescribing and use of medicines. Nevertheless, product samples had been given primarily to alleviate the burden of uninsured and poor patients and ultimately help them save money. This implied that product samples were meant to provide additional service to patients and further improve their financially challenged patients. When product samples are available, patients can start the treatment regimen immediately.

However, the distribution of product samples did not directly translate to increased patients' medication adherence. Physicians' prescribing behavior has also been associated with having product samples, further intensified by half of the physicians not recommending the drug's generic counterpart. Should the distribution of samples be followed and continuously practiced, the provision of product samples in AO 2015-053 should be strictly followed and supplemented with regulation and monitoring to prevent the occurrence of violative practices in its distribution.

Furthermore, a need to address the following issues was made evident through the study: (1) physicians pooling product samples together and selling them in clinics; (2) medical representatives selling product samples directly to patients or negotiating with drugstores to sell such samples to patients; (3) distribution of near expiry product samples; (4) physicians providing only one product sample for the entire treatment duration of their patients; (5) tampering of the packaging of product samples before distributing to the patients; and, (6) misconceptions stating that product samples were better than the conventional medicines sold in the market.

It is recommended that relevant government agencies, such as the DOH and FDA, create a surveillance system to ensure that no violative practices are committed by any individual. These practices include (1) selling through doctor's clinics and pharmacies; (2) removing the labels of product samples; and (3) distribution of antibiotic samples. The surveillance system will monitor the flow of providing product samples to patients. To achieve this, relevant government agencies should actively determine the distribution and utilization of product samples through audits and registries. Likewise, they should encourage stakeholders and end-users to report any kind of practice that is pertinent to the illegal distribution of product samples.

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