Philippine e-Journal for Applied Research and Development 10(2020), 50-60 ISSN 2449-3694 (Online)
http://pejard.slu.edu.ph/vol.10/2020.12.31.pdf

Physicians' Knowledge, Perceptions, Attitudes and Practices regarding Generic Medicines in Baguio City, Philippines

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Received, 9 September 2020; Accepted, 22 December 2020; Published, 31 December 2020

Abstract

Physicians play a critical role in the uptake of generic medicines in the Philippines, being in control of drug prescriptions while also enjoying high trust from patient-consumers. However, their negative perceptions on generic medicines have arisen as an issue that could influence their prescribing practices for generic drugs. To gain further insights into the problem, a cross-sectional survey was conducted among practicing physicians in Baguio City, assessing their state of knowledge, perceptions, attitudes and practices relative to generic medicines and the Generics Act of 1988. Results revealed knowledge gaps on the therapeutic capability of generic medicines, and the generic law's provision on generic dispensing; persistent low regard for generic drugs and their quality assurance standards; continuing opposition to the specific provision on generic dispensing; and, finally, low or even non-compliance to generic prescribing. Aside from recommendations on continuing information and education of physicians together with a stricter and consistent monitoring of their prescription practices, the study calls for investigation into the influence of drug companies on the persistence of negative perceptions among physicians.

Keywords: medicines in the Philippines, challenges to generics, generic drugs, generic prescribing, generic dispensing, RA 6675

Introduction

Generic medicines are manufactured and marketed as equivalent alternatives to innovator drugs upon the expiration of the latter's patent (WHO, 2016; Generics and Biosimilars Initiative, 2012). As generic drugs are way cheaper than the innovator products, these have been promoted worldwide as a way to control healthcare expenditures and improve access to medicines (Toverud et al., 2015; Nguyen et al., 2013).

In the Philippines, the government has adopted the Generics Act in 1988 in order to reduce the prices of medicines and ensure the adequate supply, distribution, and use of generic medicines (Republic Act 6675). Two of the enabling mechanisms enforced by the law to facilitate the use of generic medicines were generic prescribing at the level of physicians and generic dispensing at the level of pharmacists and drug outlets. However, over the years, several barriers have been identified pertaining to the implementation of the generics law, leading to the lesser than expected uptake of generic medicines by the general population (Wong et al., 2013; Pabico, 2006a; Hartigan-Go, 2001).

Among the issues noted was the adverse position of physicians whose national federation,

the Philippine Medical Association, has allied itself from the start with big pharmaceutical companies in challenging the enactment of the Generics Act (Tan, 2013; Co, 1998; Yadao-Guno, 1991). This was iterated in a study done a few years after the law's implementation, which showed that as much as 70% of the physician-respondents were opposed to it (Dantes, 1991).

The physicians' negative stance towards generic drugs is a cause for concern, as this could well explain their low or even non-compliance to generic prescribing (Wong et al., 2013). Moreover, as the physicians are solely responsible for prescribing medicines in the country as set by the Philippine Medical Act (Republic Act 2382), this can negatively impact the buying behavior of consumers in relation to generic medicines (Ku, 2017). This is evident as 96% of Filipino consumer-respondents claimed that they would be convinced of the effectiveness of generic drugs if so informed by their doctors (Wong et al., 2016).

Given their full control on the prescription of medicines, coupled with the consumers' big trust vested in their prescriptions, the doctors play a pivotal role in the acceptance and successful implementation of the generics law in the country. It is of consequence, thus, to consider seriously this key stakeholder's noted adverse position in order to shed light on where this is coming from and how this can possibly be mitigated. Unfortunately, there is a dearth of studies on physicians in relation to the generics law and generic medicines in general. To date, just a couple of works have looked into these, and only on a limited number of items. In a preliminary study done in 1991, Dantes noted that more than two-thirds of the sampled physicians did not agree with the generics law, and likewise thought that the state's regulatory body was not capable of ensuring the quality of generic medicines. A related study done about a decade later (Wong et al., 2013) also revealed that the majority of physicians considered generic drugs to be of poor quality due to perceived reasons like impure additives, increased side effects, shady manufacturers, slow action of the drugs, and regulation problems. Nonetheless, most of the participants claimed to have practiced generic prescribing in consideration of the patients' welfare and also for fear of punishment as this was mandated by law. This study's findings should be taken with caution though as only a small number of participants (n=30) were involved. Moreover, these were elicited as themes from key informant interview data rather than a systematic survey.

The present study will formally assess the knowledge, perceptions, attitudes, and practices of Filipino physicians relative to generic medicines and the Generics Act, emphasizing on the law's key provisions on generic prescribing and generic dispensing. This evaluation is timely, as it is now about 30 years since the enactment of the generics law, and within which period the Department of Health has also implemented additional measures to promote generic medicines. For instance, one key intervention was the requirement of bioequivalence evidence in the registration and approval of pharmaceuticals, including generic drugs (FDA, 2016). Thus, this study hopes to provide updated indicators on the status of physicians' knowledge, perceptions, attitudes, and practices, and at the same identify specific areas that could be targeted for future interventions among physicians.

Methods

Study design and survey tool

A cross-sectional survey was conducted among practicing physicians in Baguio City, Philippines. The research tool, which was prepared based on the review of literature, was formatted as a paper-based questionnaire that comprised four sections. The first part is concerned with the participants' demographic characteristics, specifically age and years in practice. The second part contains five statements that were designed to elicit correct or incorrect responses to examine knowledge regarding generic medicines and the generics law. The third part is composed of two statements that measure the extent of practice on generic prescribing based on a scale of 1 to 10 (1 being "not practiced" and 10 being "always practiced"). The final part includes statements framed in a four-point Likert-scale format (4 = "strongly agree" to 1 = "strongly disagree") that assessed perception on generic medicines and attitude towards generic substitution.

The research tool was evaluated for its face and content validity by physicians who are also academicians. Upon its validation, the tool was pilot tested among thirty-five practicing physicians in San Fernando City, La Union. The data were subjected to KR-20 and Cronbach's alpha coefficients of reliability. The computed reliability coefficients (0.77, 0.70, and 0.71 for parts II, III, and IV, respectively) implied that the research tool is reliable.

Respondents

The sampling frame included practicing physicians in Baguio City with an estimated number of 1,030, and from which a sample size of 150 respondents was computed using Cochran's formula. In the absence of a complete listing and directory of physicians in the city from where to draw random samples, convenience sampling was used, with the survey questionnaires being served to all physicians in all hospitals in the city.

The respondents were informed that participation in the survey is voluntary, and confidentiality would be upheld. Informed consent was sought from each respondent prior to giving the questionnaire. Answered questionnaires that were found to be invalid were rejected and replaced by answers from new respondents.

The respondents represented a broad range of age and years in practice. The biggest number fall under ages 46-55 (33%) and have been in practice for 1-8 years (34%) [Table 1].

Table 1. Demographics of the study population (n=150).

Age	f (%)
26 – 35	18 (12)
36 – 45	40 (26.7)
46 – 55	50 (33.3)
56 – 65	22 (14.7)
66 – 75	5 (3.3)
Years in practice	
1 – 8	51 (34)
9 – 16	44 (29.3)
17 – 24	30 (20)
25 – 32	11 (7.3)
33 – 40	5 (3.3)

Statistical treatment of data

Descriptive statistics such as frequency, percentage, and mean were used to determine the respondents' level of knowledge and perception on generic medicines, the extent of practice on generic prescribing, and attitude towards generic substitution. Pearson correlation analysis was done to determine the relationship between the respondents' level of knowledge on generic medicines, perception of generic medicines, attitude towards generic substitution, and their age and years in practice as physicians.

Results

Knowledge regarding generic medicines and the Generics Act

Mixed results are seen in the physicians' knowledge on generic medicines and the Generics Act [Table 2]. They have high levels of knowledge on three indicators, namely, the conduct of bioequivalence studies for generic medicines prior to being marketed (100% correct), the objective of the Generics Act, which is to ensure an adequate supply of medicines at the lowest possible cost (95.3% correct), and that the Generics Act does not allow physicians to write only the brand name of the medicine in their prescription (88% correct). However, more than half (52.7%) did not get the right answer on generic medicines being therapeutically equivalent to branded medicines, while a sizable percentage (40%) also got the wrong answer on pharmacists being allowed to substitute a generic alternative for the brand written on the prescription.

Perceptions on generic medicines

Overall, the physicians have a negative perception of generic medicines, and consistently across all indicators [Figure 1]. A little more than half (50.6%) claimed that generic medicines do not have the same quality as branded medicines. A slightly higher number (56.7%) also think that the current standards for quality testing and regulation of generic medicines are not sufficient to attest to their safety and efficiency. An even higher number (64 %) do not agree that generic

Table 2. Knowledge on generic medicines and the Generics Act.

Items on Knowledge	Correct Responses	Incorrect Responses
	f (%)	*f*(%)
1. Generic medicines are therapeutically equivalent to branded medicines.	69 (46%)	79(52.7%)
2. Bioequivalence study is necessary for a generic medicines' approval for market.	150 (100%)	0(0%)
3. The Generics Act ensures the adequate supply of medicines at the lowest possible cost.	143 (95.3%)	7(4.7%)
4. The Generics Act allows physicians to write only the brand name of the medicine in the prescription.	132 (88%)	18(12%)
5. The pharmacist is not allowed to substitute a generic alternative for the brand written on the prescription.	90 (60%)	60(40%)

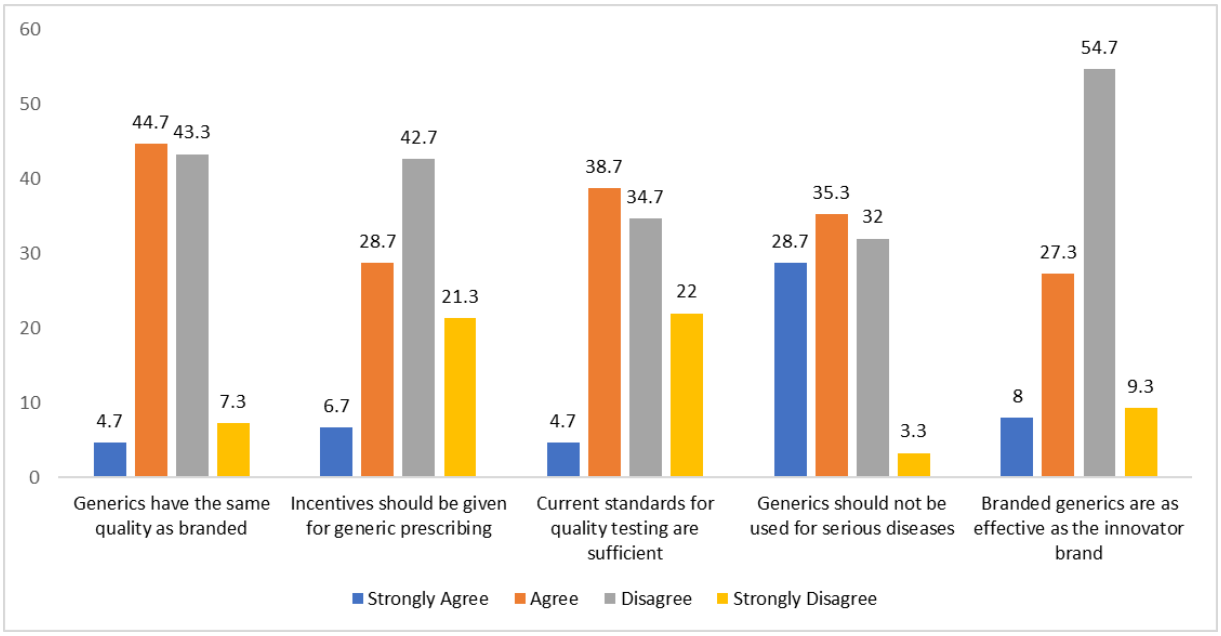

Figure 1. Perceptions on generic medicines.

medicines should be used for serious diseases. The same percentage (64 %) likewise expressed disagreement with the statements that branded generics are as effective as the innovator brand and that incentives should be given by the government to doctors for prescribing generic medicines.

Attitude towards generic substitution

The results are mixed regarding the physicians' attitude towards generic substitution [Figure 2]. Nearly two-thirds (62.6%) agree that the outcome of therapy will not change when switching medication from branded to generics. However, a good 44% do not agree that

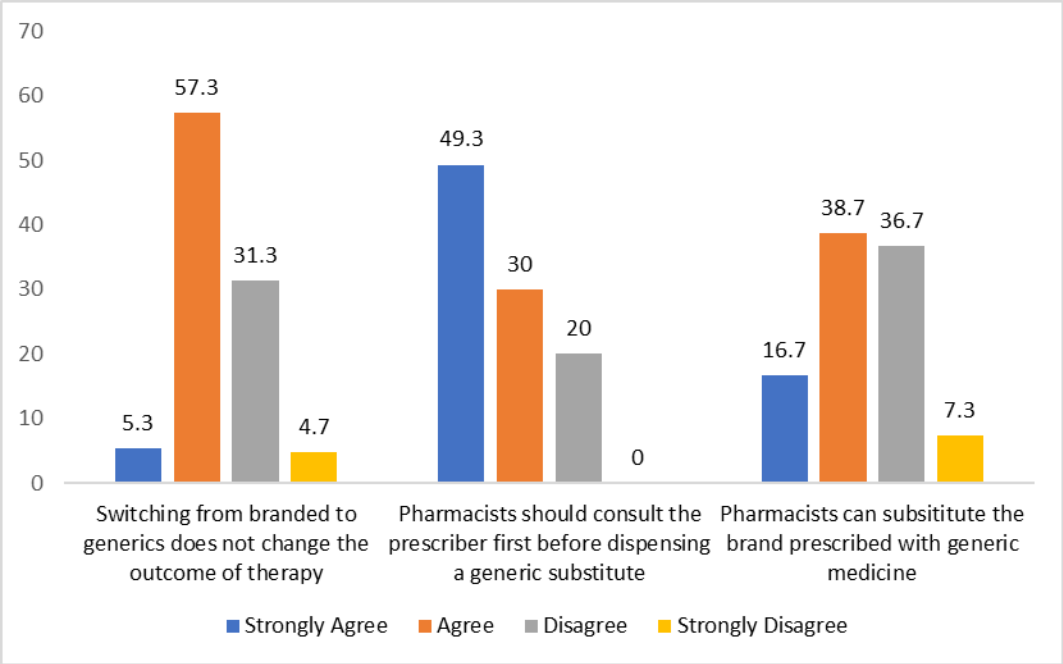

Figure 2. Attitude towards Generic Substitution

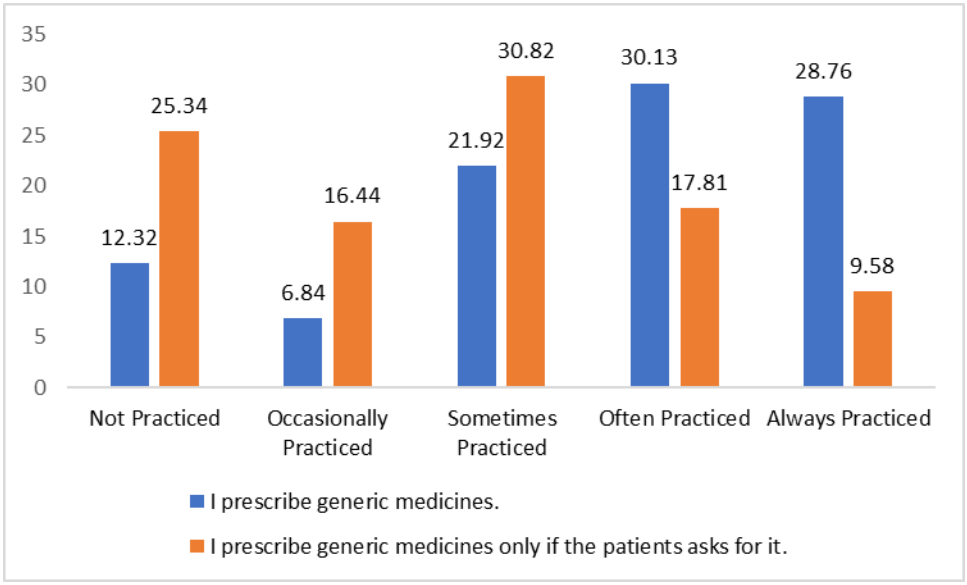

Figure 3. Extent of practice on generic prescribing

Table 3. Correlation of participants' demographic profiles and their level of knowledge, perceptions and attitudes towards generic medicine (n=150).

Parameters		Pearson Correlation	*p*-value	Description
Level of knowledge	a. Age	-0.026	0.768	No significant correlation
	b. Years in practice	-0.140	0.098	No significant correlation
	c. Extent of practice on generic prescribing	0.22	0.008	Significant Positive Correlation
Perception	a. Age	0.169	0.051	No significant correlation
	b. Years in practice	0.279	0.001	Significant positive correlation
	c. Attitude towards generic substitution	0.48	<0.001	Significant Positive Correlation
Attitude	a. Age	0.017	0.843	No significant correlation
	b. Years in practice	0.126	0.136	No significant correlation

pharmacists substitute the brand they prescribed with generic medicines. Moreover, more than three-fourths (79.3%) want pharmacists to consult the prescriber first before dispensing generic alternatives.

Extent of practice on generic prescribing

In terms of their practice of prescribing generic medicines, the biggest number (30.67%) claimed that they often did this. Only 28.67% answered 'always practiced,' while at the opposite end, 12% claimed 'not practiced.' When asked if they prescribed generic medicines only if the patient asks for it, the biggest number (30.82%) answered 'sometimes practiced' while a little more than one-fourth (25.34%) said they did not practice this at all [Figure 3].

Significant correlations

Among the parameters correlated [Table 3], three emerged as significant: the physicians' level of knowledge on generic medicines and their extent of practice on generic prescribing (p=0.008), perception on generic medicines and years in practice (p=0.001), and perception on generics medicines and attitude towards generic substitution (p=<0.001).

All three correlations are positive. This indicates that the higher the physicians' level of knowledge is, the higher is their extent of practice; the longer they have been in practice, the better are their perceptions on generic medicines; and, finally, the more positive is their perception on generic medicines, the better is their attitude towards substitution.

Discussion

This study presents several issues arising from the assessment of Filipino physicians' knowledge, perceptions, attitudes and practices regarding the Generics Act and generic medicines some 30 years after the enactment of the law. Knowledge-wise, a couple of gaps have surfaced pertaining to a key provision of the law as well as to the therapeutic capability of generic medicines. First, nearly half of the physicians are not aware that pharmacists are allowed to substitute a generic alternative for the brand written on a prescription. This is actually provided for by the law under its procedures on generic dispensing as a strategy to boost uptake of generic medicines in tandem with generic prescribing on the part

of the doctors. As to why this basic provision is not yet a common knowledge among Filipino physicians even up until this time remains a question.

The second gap rests on the physicians' lack of awareness on the therapeutic equivalence of generic medicines with branded medicines. This strikes at the heart of the Generics Act because the basic assumption why generic medicines are being promoted is that these are supposed to be therapeutically equivalent to innovator medicines (Latwal & Chandra, 2020; WHO, 2016; Generics Act, 1998; U.S.F.D.A, n.d.). The physicians' lack of knowledge on this fundamental character of generic medicines may shed light partly on their overall negative perception of generic medicines. As the results show, majority of the physicians do not agree that generic medicines have the same quality as the branded medicines. For another, a majority also opine that the current standards for quality testing of generic drugs are not sufficient. These could then be the reasons why they likewise expressed that generic medicines should not be used for serious diseases.

The physicians' low regard for generic medicines is echoed in their disagreement with the suggestion that the government provide incentives for doctors to prescribe generic medicines, a strategy that has been recommended in other countries (Sharrad et al., 2009; Hassali et al., 2006). From their vantage point, it makes sense that the state should not incentivize the promotion of an inferior product. Similarly, the physicians' poor esteem of generic drugs shows up again in the disagreement of about half of them with the practice of generic dispensing or substitution by pharmacists. Not only that, more than three-fourths even want that pharmacists should consult the prescribing physicians first before dispensing generic alternatives, a practice that has not been envisioned by the Generics Act at all. This last point shows that physicians are not really sold out to the law's provision on generic dispensing, which recalls their opposition to the law as noted by Dantes back in 1991.

Given their negative appraisal of generic medicines and the quality assurance mechanisms for these, it does not surprise why only 28.67% of the physicians claimed that they always practiced generic prescribing or that they did so only when requested by the patient (30.82%). These figures indicate very low compliance, as the law mandates generic prescribing at all times and without exceptions. Worse, twelve percent (12%) even admitted that they did not practice generic prescribing at all, which is in clear violation of the law.

The physicians' negative perceptions of generic medicines and their lack of trust in their quality testing and regulation are not new, as these have already been raised in earlier studies (Wong et al., 2013; Dantes, 1991). That this study iterates the same results suggests that nothing much has changed over the past three decades, notwithstanding the interventions done all along by the Department of Health. This is worrying and thus worth interrogating further. Where is this negative regard coming from? To the authors' knowledge, there are no documented and peer-reviewed evidences showing that generic medicines in the country are indeed of low quality, or that the current standards for quality testing and registration of generic medicines are questionable, or that generic medicines are less effective in treating serious diseases. If so, this point comes rather surprising, as by training, physicians are supposed to abide by evidence-based practice.

In the Philippines, generic medicines – just like their branded counterparts – pass through the scrutiny and approval of the Food and Drug Authority (FDA) before these are rolled out to the market (FDA, 2013). Early on, the Bureau of Foods and Drugs (since replaced by the FDA in 2009) has attested to the conformity of approved generic medicines with the agency's standards, and that there is not much difference observed between these and the branded medicines (Pabico, 2006b). In 2016, the FDA fully required bioequivalence evidence for the registration and approval of pharmaceuticals (FDA, 2016), which would have addressed the lingering concern on the quality of generic drugs on the market. And the doctors are fully aware of this latest requirement, as revealed in this study.

Thus, it appears that this persistent negative perception of generic medicines as well as on their quality control processes does not rest squarely on scientific evidence. Further support for this

contention is noted in the physicians' responses to two other items in this study. First, nearly two-thirds of them agree that the outcome of therapy will not change when switching medications from branded to generics. Second, the same percentage thought that branded generics are less effective than the innovator brands. In truth the branded generics may also be produced by the same companies manufacturing the innovator drugs themselves (Latwal & Chandra, 2020; Berger, 2017). But simply because they are generics, then they are regarded as less effective.

These two inconsistencies appear to lend credence to the claim that the physicians' negative perceptions on the quality of generic medicines and their standard of quality testing are not emanating from hard evidences but elsewhere. Specifically, blame has been laid on the undue influence of multinational drug corporations, who from the start, have aggressively been peddling the idea that generic drugs are of low quality (Tan, 2013; Co, 1998; Yadao-Guno, 1991), while at the same time continuously doling out various perks to physicians for the latter to keep on endorsing branded medicines (Pabico, 2006b; Hartigan-Go, 2001). Outside the country, there is evidence that doctors are indeed influenced by the promotional activities and perks provided by pharmaceutical companies without them realizing or admitting it themselves (Sah et al., 2013; Boumil et al., 2012; Fischer et al., 2009; Chren & Landefeld, 1994). If so, the matter should also be investigated locally, especially given its repercussions on the implementation of the generics law in the country. Elsewhere, measures have been instituted to limit the improper influence of pharmaceutical companies on physicians (Nissanholtz-Gannot & Yankellevich, 2017; Alkhaled et al., 2014; Grande, 2010; Kowalczyk, 2007), and the Philippines should do no less once the same pattern is established here.

In light of the persistence of bias against generic medicines among Filipino physicians, the Department of Health (DOH) should adopt more aggressive measures to defend and promote generic medicines. First, there is a need for the continuing information and education of physicians to address the gaps in their knowledge about the generics law and the quality control mechanisms for generic drugs in the country. As the study's results show, the higher the physicians' level of knowledge is, the higher is their extent of practice in prescribing generics. But, as the findings also suggest that the physicians' perceptions on generic medicines get better as they advance in their years of practice, this continuing education and information might be better off being directed to the new physicians. In fact, a more proactive move can be taken here, that is, by ensuring that proper information on generic drugs is included in the doctors' medical training even before they get into actual practice. This strategy has also been recommended in other countries where similar issues on the physicians' knowledge and perception of generic drugs have been observed (Zaverbhai et al., 2017; Jamshed et al., 2011; Chua et al., 2010).

Another tack for consideration is a stricter monitoring of the physicians' prescribing practice, given the noted low or even non-compliance with the basic provision of the law on generic prescribing. As early as 1996, an investigative article (Pabico, 1996b) has already pointed out this problem, attributing it to the weak monitoring of physicians' practice, alongside the perception that no one is ever caught and penalized for violations. The DOH officials interviewed in the same article have themselves admitted that the rate of compliance depends much on the level of the Department's monitoring of the implementation of the law. This is confirmed in Wong et al. (2013) which found out that fear of getting caught and punished was one major reason why doctors followed generic prescribing. Hence, strict and consistent monitoring that results in actual apprehensions and penalties for violators is critical in ensuring the successful implementation of this key provision.

In closing, some caution should be taken when interpreting the results of the study. First, the respondents were limited to physicians in the city of Baguio, and specifically among those serving in hospitals; thus the findings may not be generalizable to all physicians in the Philippines. Nonetheless, the findings point out specific directions that can be picked up and confirmed in the event that a nationally representative study is pursued. Second, the data gathering was conducted in 2017. While there are no indications that changes may have

occurred in the respondents' answers, as there had been no similar studies conducted since then, it is still important to read the results within this context.

Conclusion

Aside from pointing out current gaps in the physicians' knowledge of generic medicines and the Generic Act, this study underscores the persistence of negative perceptions of generic drugs and their quality assurance standards, and the opposition to the provision on generic dispensing. That not much change has taken place along these lines despite the length of time involved, as well as the initiatives of the Department of Health to promote generics medicine, remains a big question. One plausible direction pointed out is the role of drug companies in abetting the Filipino physicians' negative perceptions. Thus, in addition to recommendations on how to address the physicians' knowledge gaps and their noted low or even non-compliance to the provision on generic prescribing, the study also calls attention to the need to look further into the influence of drug companies on Filipino physicians' negative perceptions and how this can possibly be mitigated.

Acknowledgments

The authors thank the physicians who took part in the study, either in the validation and pilot testing of the instrument or the actual data gathering. Appreciation is likewise extended to Mary Grace S. Martin for her contribution during the conceptualization of the study.

Funding

The study was funded by Saint Louis University under its Research Faculty Mentoring Grant.

Conflict of interest: None.

Ethics approval

The study protocol was approved by the Saint Louis University Research Ethics Committee (SLU-REC/Approval/ Nov 29, 2016).

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