Generic medicine perception among physicians and pharmacists: a myth that harms the poor
A qualitative study in Addis Ababa, Ethiopia

Getachew Hailu, BPharm*, Ebrahim D Osman, MSc**, Derbew F Berhe, PhD***, Tariku Shimels, MSc****, Arebu I Bilal, MSc***** Zelalem Tilahun, MSc*****

Pharmacy Department, Tigray Regional State Health Bureau, Ethiopia*, Department of Pharmacy, Jigjiga Health Sciences College, Jigjiga, Ethiopia**, Department of Pharmacy, College of Health Sciences, Mekelle University, Mekelle, Ethiopia***, Medical Logistics and Pharmaceutical Service Coordination Department, Federal Police Commission Health Service Directorate, Addis Ababa, Ethiopia****, Social and Administrative Pharmacy Working Group, Department of Pharmaceutics and Social Pharmacy, School of Pharmacy, College of Health sciences, Addis Ababa University, Ethiopia*****

Abstract

Background: The generic substitutions practice is increasingly encouraged by health authorities globally. However, the perceptions of physicians and pharmacists have profound effects in prescribing and dispensing of generic medicines to patients which in turn may have significant impact in the out of pocket payment for the patient in particular and for the government in general. The objective of this study is to assess physicians’ and pharmacists’ perception towards generic medication use in Addis Ababa, Ethiopia.

Methods: A phenomenological qualitative study was conducted by using semi-structured interviews with physicians and pharmacists in

Corresponding author
Zelalem Tilahun
Email: zelatilahun@gmail.com / zelalem.tilahun@aau.edu.et

*E-mail: zelatilahun@gmail.com
Addis Ababa. Interviews were transcribed and qualitative analyses were performed using open coding and quantitative data were analyzed by using SPSS version 20.

Results: A total of 20 pharmacists and 15 physicians have participated in this study. Most of the pharmacists reported that patients preferably purchase expensive brand medicines than generic ones if they afford the price. Physicians reported that patients do not usually respond to some generic drugs especially for pain treatment. They also stated that pressure from patients and medical representatives is high to prescribe brand medicines.

Conclusion: Overall, physicians especially those working in private healthcare facilities tend to have less preference for generic medicines.

Keywords: Addis Ababa, generic medicine, perception, pharmacist, physician, qualitative study.

Introduction

Generic drugs are identical or similar within an acceptable bioequivalent range to the brand product with respect to pharmacodynamics properties. The fact that innovator drugs are no longer protected by patents, and generic drug manufacturers do not have to spend extra money for drug discovery, pre-clinical and clinical trials, makes generic drugs to be cheaper in price than that of the innovator drugs. Generic drugs provide an opportunity for savings in drug expenditure without reducing the quality. For this reason, generic drugs have been increasingly popular as a method to reduce pressure on drug budgets, and they now make up an increasing percentage of dispensed drugs. Governments often use generic medicine policies to improve both accessibility and affordability. Successful uptake of this policy is dependent on society having confidence in the efficacy, safety and quality of generic medicines. Commercial features of medicines like price and brand names affect peoples’ perceptions of efficacy and safety. Additionally, there is a prevailing notion that generic medicines are inferior in quality. These perceptions are further reinforced by recent studies that found increasing numbers of poor quality medicines in the developing world. In addition, there is evidence which shows that many physicians and pharmacists have negative views against generic medicines and resist prescribing them, believing that generic medicines are inferior to their branded counterparts. Not only health care providers but also sizable proportions of patients report negative views about generics, complaining them to be less effective, of lower quality and unsuitable for treatment of major illnesses, as compared to their branded equivalents.

Attitudes towards generic medicines have been documented internationally as well as in many country-specific studies including: Australia; Italy; South Africa; Malaysia; Saudi Arabia; Jamaica; France; USA; Turkey and Qatar. However, very few peer-reviewed studies have assessed the attitudes of healthcare professionals towards generic medicines in Ethiopia showing a significance tendency towards branded medicine preferences. Nonetheless, addressing brand-generic perception issues among health professionals and patients remains to be the pivotal aspect in optimizing cost of therapy and therapeutic outcomes. The present study is deemed to uncover a remarkable extent of the problem in a different setting to previous studies and a qualitative design approach. Therefore, this study aims to assess the perception of physicians and pharmacists towards generic medication use in Addis Ababa.

Methodology

A phenomenological study design supported with quantitative data was employed. The study involved key informant interviews by using a semi-structured questionnaire. A convenience sample of physicians and pharmacists working both in private and governmental health institutions were included until saturation of themes reached. A saturation point is the point where there won’t be any further new evidence or additional information. We followed the principle of “information power” to guide adequate sample size for the in-depth interview. Saturation point in our study was noticed.
when the data tend to be redundant of data already collected, the researcher begins to hear the same comments again and again, codes or themes of the research become redundant and when the interview starts to exemplify the existing theoretical ideas instead of verifying or developing new theory. The study was conducted in Addis Ababa, the diplomatic capital of African Union and capital city of Ethiopia. According to Central Statistical Agency’s population projection, the population of the city is 3.2 million of which 52.6% are females. Addis Ababa has a total of 308 pharmacies, 249 drug stores, 1 rural drug vendor, 759 clinics, 140 importers and 93 wholesalers of human medicine. Six of the 11 pharmaceutical industries in Ethiopia are also found in Addis Ababa. The study was conducted from 12th April to 14th June 2016. Determining an adequate sample size in qualitative research is a matter of judgment and experience in evaluating the quality of the information. However, 15 physicians and 20 pharmacists from different governmental hospitals, private hospitals and community Pharmacies were selected purposively to meet the set objectives.

In-depth interview data collection method was used. A pre-tested open ended topic guide was prepared in English and translated into Amharic language. Data was collected by engaging with participants, posing question in natural manner, listening to the participant’s response attentively, and asking follow-up questions and probes based on the responses provided. After obtaining consent from participants, in-depth interviews were tape-recorded. Notes were also being taken during the interviews. The interview was conducted face-to-face at the participants’ work place, even though the participants were given the choice of being interviewed elsewhere. Each session of in-depth interview was lasted about 30-40 minutes. For the quantitative data, a structured questioner was used. Data collection and analysis was proceeding simultaneously. All notes and the recorded audios were transcribed and used to complete the hand written notes. The write-ups were produced and time was taken to prepare a contact summary, which involves reviewing the main concepts, themes, issues and questions seen during the contact. This guided planning for the next contact, and gave a chance for modification in approach and to decide on continuing the data collection until a point of saturation. Following the transcription, a line by line coding of the data was done. Data were analyzed by thematic analysis technique descriptively. Data were broken down into discrete parts, closely examined and compared for similarities and differences (i.e. themes and sub themes were developed from the data).

Results

A total of 15 physicians and 20 pharmacists have been participated in this study. Majorities (71%) of the study participants were male, and half were in the age group of 25–29. Three fourth of the physicians prescribed 10-20 prescriptions, while most of the pharmacists dispensed 60–90 prescriptions per day, and two third of the respondents have an experience of one to five years (Table 1).

**Table 1: Socio-demographic characteristics of physicians and pharmacist in Addis Ababa, 2016 (n=35).**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
<td>28.6</td>
</tr>
<tr>
<td>Male</td>
<td>25</td>
<td>71.4</td>
</tr>
<tr>
<td>Age Distribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-29</td>
<td>18</td>
<td>51.4</td>
</tr>
<tr>
<td>30-35</td>
<td>11</td>
<td>31.4</td>
</tr>
<tr>
<td>&gt;35</td>
<td>6</td>
<td>17.2</td>
</tr>
<tr>
<td>Profession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacist</td>
<td>20</td>
<td>57.0</td>
</tr>
<tr>
<td>Physician</td>
<td>15</td>
<td>43.0</td>
</tr>
<tr>
<td>No of prescription prescribed/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-20</td>
<td>11</td>
<td>73.3</td>
</tr>
<tr>
<td>&gt;20</td>
<td>4</td>
<td>26.7</td>
</tr>
<tr>
<td>No of prescription dispensed/day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-60</td>
<td>5</td>
<td>25.0</td>
</tr>
<tr>
<td>61-90</td>
<td>7</td>
<td>35.0</td>
</tr>
<tr>
<td>91-120</td>
<td>5</td>
<td>25.0</td>
</tr>
<tr>
<td>&gt;120</td>
<td>3</td>
<td>15.0</td>
</tr>
<tr>
<td>Years of practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5</td>
<td>23</td>
<td>66.0</td>
</tr>
<tr>
<td>&gt;5</td>
<td>12</td>
<td>34.0</td>
</tr>
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</table>
Most physicians (53%) and pharmacists (75%) believe that generic medicines were generally of the same quality as the originator medicine. However, 40% of physicians have the opinion that generic medicines do not work as effectively as the originator medicines. In contrast to this, all of the pharmacists strongly disagree to the statement that “generic medicines do not work as effectively as the originator”. Only one third of the physicians agree that the generic manufacturing process is of the same standard as that of the originator. However, three fourth of the pharmacist agree that generic medicines are manufactured to the same quality as originator medicines. Nearly two out of three of physicians, and one out of four pharmacists expressed that generic medications are not manufactured to the same quality as the originator. In terms of safety, 53% of the physicians and 70% of the pharmacists agreed to the opinion that generics are as safe as the originator medication. Nevertheless, 66.7% of the physicians and 40% of the pharmacists would prefer to take an originator medicine rather than a generic medicine, even if it is more expensive. Only 46.67% of the physicians reported that they recommend generic alternatives first when advising their family members while this percent is higher (80%) for pharmacists (Table 2).

Table 2: Structured questions of attitude and comparison of physicians’ and pharmacists’ responses in Addis Ababa, 2016 (n=35).

<table>
<thead>
<tr>
<th>Statements of attitude</th>
<th>Physicians (n=15)</th>
<th>Pharmacists (n=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(S)A</td>
<td>N</td>
</tr>
<tr>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Generic medicines are generally of the same quality as originator medicines</td>
<td>8 (53.33)</td>
<td>2 (13.33)</td>
</tr>
<tr>
<td>Generic medicines do not work as effectively as originator medicines</td>
<td>6 (40)</td>
<td>2 (13.33)</td>
</tr>
<tr>
<td>Generic medicines are as safe as originator medicines</td>
<td>8 (53.33)</td>
<td>4 (26.67)</td>
</tr>
<tr>
<td>Generic medicines are manufactured to the same quality as originator medicines</td>
<td>5 (33.33)</td>
<td>3 (20)</td>
</tr>
<tr>
<td>Generic medicines are cheaper because they are of inferior quality to originator medicines</td>
<td>3 (20)</td>
<td>3 (20)</td>
</tr>
<tr>
<td>If I were ill, I would prefer to take an originator medicine rather than a generic medicine, even if it is more expensive</td>
<td>10 (66.67)</td>
<td>0</td>
</tr>
<tr>
<td>When advising my family members, I recommend generic first</td>
<td>7 (46.67)</td>
<td>4 (26.67)</td>
</tr>
</tbody>
</table>

(S)A: (Strongly) Agree, N: Neutral, (S)D:(Strongly) Disagree

In this study, one main theme and five sub-themes were developed from the content analysis. The main theme was physician and pharmacist perceptions of generic medicines, and the five subthemes were: general understanding about generic medicines, cost implications of generic and brand medicines, patients’ complaint about safety and efficacy of generic medicines they take, and strategies to improve generic prescribing. Most of the physicians (n=10) and pharmacists (n=15) believe that generic medicines are as effective as brand medicines and the respondents further explained that the only variation between brand and generic medicines is the differences in the excipients used by different manufacturers.

“They are pretty identical, and they have the same action. However, there are patients who complain that generic medicines do not work for them as brand ones which I think is more psychological than actual” (Male pharmacist, age 27)
Similarly, another respondent stated:
“I think sometimes generic medicines are not as polished and coated, but, I’m sure that the standards are correct and sometimes their coatings do not look good as you would expect” (Male pharmacist, age 25)

However, there were responses by pharmacists as well as physicians who believed that generic medicines are less effective than that of brand medicines, and this idea was evidenced by the respondents as follows:
“I believe that the brands are better than the generics. The added additive makes the brand more quality and expensive” (Female pharmacist, age 30)

One respondent also adds:
“I think there is a difference on the efficacy of brand and generic drugs, and this might be due to the use of cheaper ingredients by generic manufacturers” (Male physician, age 35)

Most of the physicians and pharmacists (n=9 and n=17 respectively) believe that there is variation in price between brand and the generic medicines. They also have pointed out that this variation is not because generic drugs are less effective than their brand counterparts. They believe that brand medicines are costly due to the additives added into the product which increase additional cost. However, 15% of the participants responded that generic medicines are cheaper because they are of inferior quality to the originator medicine. One of the respondents said:
“I believe that generic drugs are cheaper because they lack additional additives unlike that of the brand ones, and this makes generic medicines to be less effective and cheaper” (Female pharmacist, age 29)

This idea was strengthened by a statement of another respondent:
“The added additive makes the brand medicine more quality and expensive” (Male pharmacist, age 33)

However, some physicians (n=3) believe that brand medicines are expensive due to the huge expense for research and development by the originator company. One physician has expressed this idea as follows:
“Due to the expense for research and development, original drugs are costly” (Male physician, age 28)

While other physicians believe that the cost differences are due to the use of cheaper ingredients by generic products, this idea was witnessed by one of them just as follows:
“Generics are cheap due to the use of substandard ingredients” (Male physician, age 26)

Most of the pharmacists (n=19) reported that patients are confused about which medicines to take specially when they are told about the price differences between brand and generic medicines. They mentioned that the difference in price, as considered by many patients, is due to the change in efficacy and preferably purchase expensive brand medicines than generic ones if they have enough money. However, those patients who do not have enough amount of money purchase the cheaper generic alternatives as the pharmacists say.
“Since patients need a quality brand, I give them with good counseling” (Female pharmacist, age 29)

“Some of my clients reported side effects with locally manufactured medicines than brand products. Some of my customers also reported that they have no response for a generic paracetamol. When I switched them to a brand product however, they responded well. There are many instances where this kind of situation occurs with generic medicines. Through experience in dispensing of medicines, I have numerous cases which make me unsure of the safety and efficacy of generic products” (Female pharmacist, age 29)

In addition, most physicians reported that patients do not usually respond to some generic drugs, especially, for pain treatment. One physician said:
“I prefer to prescribe a particular brand of diclofenac or pain treatment than any other alternatives because patients do not respond
case of antibiotics, I prefer to prescribe generic medicines depending on patients’ characteristics like; their economic ability to buy the medicines prescribed” (Male physician, age 28)

Another physician responded:
“If I am working in private clinics I used to prescribe a brand medicine” (Male physician, age 30)

Similarly, another physician responded:
“If the pain is severe, I prescribe brand medicines which are produced either locally or in other countries” (Male physician, age 28)

The above idea has been supported by a pharmacist who described that the choice of the medications depends up on the severity of the disease.
“I prefer generic medicines for mild and moderate cases where as for severe cases I will resort to brand medicines” (Male pharmacist, age 36).

All the respondents reported that there were no patient complaints on the safety and efficacy of the brand medicines they took. They also reported that patients usually compare one brand medicine with another brand not with generic ones. Respondents recounted that some patients complain about the efficacy and adverse drug effects of generic medicines. This was evidenced by one of the respondents who reported as;
“I have realized when patients complain about the efficacy and side effects of generic drugs, and at those times, I changed the drugs in to brand ones” (Female physician, age 29)

Some physicians (n=5) do not trust the efficacy of generic drugs and they believe that generic drugs might be substandard. One of the physicians reports as follows:
“While I was at medical school, I have been taught that brand and generic medicines have equal efficacy. But in practice, this is not always true, and even the patients know this” (Male physician, age 28)

Some physicians (n=6) also believe that the pressure from patients and medical representatives is high and a solution has to be in place to lessen the problem. A physician presented this in his words:
“Awareness creation for patients and decreasing unnecessary pressure from medical representatives are part of the solutions” (Female physician, age 27)

Others reported that the issue of brand and generic medicines should be resolved by doing large scale studies on different brands as well as generic drugs.
“Large scale studies should be conducted to resolve the issue of brand and generics. Otherwise, the practice does not always support the theory” (Male physician, age 28)

Most of the pharmacists recommended that teaching the consumers on how generics are different from the originator is an important step to narrow the perception gap.

Discussion
In the context of developing successful strategies for the use of generic medicines, this study provides insight into the potential problems that may need to be overcome in achieving acceptance of generic medicines by healthcare professionals and patients. In this study, physicians tend to have a more negative perception towards generic medicines as compared to pharmacists. A similar finding has been reported in Ireland as well as in Ethiopia. Thus, appropriate understanding of generic medicines by both physicians and pharmacists can result in major cost-savings as they can be instrumental in controlling pharmaceutical expenditure when given the freedom to engage in generic and therapeutic substitutions.

With regard to the perception of generic medicines safety, most of the pharmacists believe that generic medicines are as safe as originator medicines. However, only half of the physicians agreed to the idea. This will affect the prescribing practice as evidenced in the qualitative part of the study where physicians believe that generic drugs have higher side effects than brand medicines. The findings are in accordance with a previous study by Hassali, et al. in which pharmacists viewed generic medicines to be safe and
effective in the treatment of most pathological conditions.\(^{(28)}\)

The safety of generic medicines was cited as a major hindrance which made most physicians and some pharmacists to withhold from prescribing and dispensing generic medicines except in some special situations such as; poor socioeconomic conditions of the patient. Quite a number of physicians in the present study believe that generics were not manufactured to the same quality as the originator medicines which indicates there is a lack of confidence related to the manufacturing processes, constituents and quality of generic medications in general. This influenced the prescribing characteristic of the physicians which was expressed by their views regarding the unsuitability of equivalence of generic substitution for some narrow therapeutic index drugs such as; antiepileptic and anti-pain medications. Nevertheless, most of the pharmacists were of the opinion that generics were manufactured to the same quality as the originator medicines. A higher result has been reported elsewhere where all pharmacists believe that generic medicines are manufactured with the same quality as originator medicines.\(^{(26)}\) However, only one third of physicians in our study believe that generic medicines are manufactured with the same quality as originator medicines.\(^{(26)}\) The perception of physician will affect the drug prescribing practice since physicians do have a pivotal role in drug prescribing. However, the entire pharmacist participants believe that generic medicines work as equivalent as originator medicines. A similar result has been reported elsewhere.\(^{(26)}\) The difference in perception might be due to differences in the curriculum of pharmacy and medicine.

In this study, it was noted that the choice of generic and brand medicines depends up on different factors like; the severity of the diseases where physicians chose brand medicines for severe pain, and the patient characteristics where physicians prescribe brand medicines if the patients is able to pay. Adequate information on bioequivalence as well as safety and toxicity profiles of generic medicines may generate more confidence among pharmacists and physicians. This study lacks the voice of the patients as well as those physicians and pharmacists who work in the different sectors like; regulatory agency, manufacturing and academics institution as the perception of these individuals might be different from those interviewed.

In conclusion, this study showed that physicians tend to have, comparatively, a more negative opinion towards generic medicines as compared to that of pharmacists. Given the pivotal role that the physician plays in drug prescribing, a question is raised as to the impact of this relatively negative opinion on patients. Patient influence, working in a private health institution, the severity of pain, and economic status of the patient have been reported to play important role in the prescribing and dispensing practice of brand medicines.

**Authors’ contributions:**
GH, ZT and AIB conceived the idea and designed the study. GH, AIB, and TS coordinated the data collection, performed data entry and analysis. DFB, ZT and EB were involved in the write up process. All authors have read and approved the final manuscript.

**Ethical approval:**
The Institutional Ethical Review Board of the School of Pharmacy, Addis Ababa University has given permission to conduct the study prior to its initiation. In addition, oral consent was obtained from study participants for conducting interviews as well as for recording the audio.
Acknowledgements:
The authors would like to express appreciation to all health professionals, who participated in the study for their devotion of time and extremely generous cooperation.

References


