Community pharmacists’ perceptions towards generic medicines and their opinions on future generic substitution policy implementation: A descriptive study from Jordan

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Abstract
The aim of this study was to explore Jordanian pharmacists’ perceptions towards generic medicines as well as to evaluate their opinions on generic substitution in order to introduce a future generic substitution policy in Jordan. A cross-sectional descriptive study involving community pharmacists in Amman-Jordan was undertaken, using a self-completed anonymous questionnaire. The sampling unit was community pharmacy, and the sampling frame was list of community pharmacies in Amman (N = 1252). Five hundred pharmacies were randomly selected to participate in this survey, and 294 pharmacists’ responses were collected giving a response rate of 58.8%. The majority of Jordanian pharmacists had a positive view on generic medicines in general with 87.7% of the respondents believing that a generic medicine is bio-equivalents to the originator. Two hundred and sixty-five pharmacists (90.1%) were in favour of implementing a compulsory generic prescribing policy. More than 80% of the pharmacists supported generic substitution in most cases. Generic substitution policy should be implemented; in addition, a formulary of interchangeable medicines must be developed to guide pharmacists’ decision making when performing generic substitution. Jordanian pharmacists were also in favour of introducing a compulsory generic prescribing legislation; however, such policy may have a negative impact on the local industry, as most of the produced medicines are branded generics.

Keywords
Generic medicines, generic substitution, community pharmacist, perception, policy

Introduction
The high health care expenditure on pharmaceutical products is becoming a challenging issue worldwide. The use of cheaper generic medicines helps tackle this issue by providing savings to patients as well as governments.1,2 A generic medicine is defined as a medicinal product, which is identical in the active ingredient qualitative and quantitative composition, and whose bioequivalence has been established with an originator medicine, whose granted patent protection has expired.3,4

Generics promote price competition that reduces price through a cost-effective way since generics are alternatives to higher priced originator pharmaceuticals.5,6 Generic medicines not only provide the same quality, safety and efficacy when compared to originator medicines,7 but also generally they are 20–90% less expensive than the innovator medicines.8 It has been estimated that €25 billion is the annual save made by European patients and health care systems for using generic medicines.1 Public and private third-party payers and healthcare authorities therefore increasingly encourage or mandate the use of generics through measures such as generic prescribing and generic substitution.7,8

Generic substitution is the practice of switching from a prescribed originator medicine to an...
interchangeable generic medicine at the time of dispensing.\(^9\)

In the United States, once a generic medicine has been approved by the Food and Drug Administration, this medicine can be dispensed by pharmacists as a substitute to its reference prescribed originator medicine, taking into consideration the generic medicine has the same clinical efficacy as well as safety.\(^{10}\)

In 2003, pharmacists in Finland were obligated to switch a prescribed medicine to the least or close to least expensive medicine (usually the generic equivalent), provided that the prescribed medicine is not within a certain defined limit (price corridor) of the maximum price, and neither the prescriber nor the patient objects the substitution. The price corridor is reviewed every 3 months on the basis of price notifications submitted by pharmaceutical companies.\(^{11,12}\)

The total savings generated during the first year of implementation amounted to 88.3 million euro.\(^{13}\)

In UK, it was reported that more than 83% of the prescriptions in 2007 were written generically,\(^{14}\) thus making the issue of generic substitution less pressing. In addition, pharmacists have an economic incentive, through supplier discounts, to dispense generic medicines.\(^{15}\)

In England, 68.9% of all prescription items were dispensed as generic medicines in 2011.\(^{16}\)

In Canada, the IMS Health reports showed that 54% of all prescriptions were dispensed using generic medicines in the year 2009. This made a saving of $4 billion to Canada’s health care system. Higher figures were reported in the United States; according to IMS Health reports, generic medicines were dispensed to fill 75% of all prescriptions in USA.\(^{17}\)

In Jordan, a circular from the Ministry of Health required doctors in Government hospitals and health clinics to prescribe generically. However, if a brand name is prescribed, the patient gets the formulary drug anyway, unless their physician builds a case and receives special permission to have the brand name dispensed. Furthermore, private health insurance companies encourage doctors to prescribe the lowest priced generic.\(^{18}\) On the other hand, in the private sector, there is no requirement or encouragement to prescribe generics.

Under the current Jordanian legislation, pharmacists are not permitted to make any change or substitution to prescriptions,\(^{19}\) unless the pharmacist contacts the prescriber and requests permission for the prescribed originator medicine to be substituted by an alternative generic medicine.

In Jordan, all pharmaceutical prices include the same mark-up percentage (fixed profit margin), and wholesaler receives 15% profit on the landed cost plus 4% for expenses while pharmacy receives 20% profit on the wholesale price plus 6% expenses. In addition, there is a value-added tax of 4%. These percentages are cumulative.\(^{20}\)

This implies that there is no financial incentive for the generics to be prescribed or dispensed, since originator and generic medicines have the same % mark-up profit.\(^{21}\) This is why it is more profitable to sell the highest priced originator medicines as this attracts the highest return in money terms.\(^{22}\)

This study aims to assess the perceptions held by community pharmacists in Jordan regarding generic medicines, their current generic substitution practice and their opinion on future implementation of generic substitution. Due to the lack of previous studies regarding generic substitution in Jordan, the findings from this study would provide a baseline data for establishing a robust generic medicine policy in Jordan.

Methods

This is a cross-sectional study whereby a questionnaire was used to collect data from Jordanian pharmacists working in community pharmacies in both affluent and deprived areas of Amman. This study was adapted from previous studies held in the same area of interest, which were identified through literature search.\(^{23}\)

The questionnaire was tested for face and content validity by two experts. It was further revised after pilot testing with 10 community pharmacists. There are four sections in the questionnaire. The first section evaluated the knowledge about generic medicines and the perceptions regarding originator to generic substitution among the surveyed community pharmacists. The second section explored pharmacists’ current generic substitution practice. The third section explored pharmacists’ views of future implementation of generic substitution policy. The last section characterised the respondent demographics.

The responses were framed in different types such as single answer and multiple answer closed questions and four-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree and 4 = strongly agree) questions.

In this study, the population was identified as Jordanian registered community pharmacists. The sampling unit was community pharmacy, and the sampling frame was list of community pharmacies in Amman (N = 1252), which was obtained from the Jordanian Pharmaceutical Association. A representative sample of 294 was calculated from the population (N = 1252) with 5% margin of error and 95% confidence level. In order to reach the representative sample size of 294, 500 pharmacies were randomly selected to participate in this survey by using Microsoft Excel randomization software.\(^{24}\)
Invitation letters along with the questionnaire were given to each pharmacy, and the questionnaires were collected within a week time. When the representative sample size (294 questionnaires) was reached, data collection stopped (response rate was 58.8%).

The participation of pharmacists approached was strictly voluntary, and their informed consent was obtained. Anonymity of respondents was preserved in the study, as names of participants were not included.

Data were collected from 15 June 2012 to 15 July 2012. All the collected data were entered into PASW® 18.0 for descriptive analysis using descriptive statistics techniques such as frequency and cross-tabulation and inferential statistics using chi square tests.

This study was approved by the Research Ethics Committee of Kingston University, London. Participation was voluntary and anonymous.

Results

Demographic characteristics of responding pharmacists

A total of 294 responses were received, and the basic demographic of the responding pharmacists is summarised in Table 1. The sample was almost equally distributed between males (142, 48.3%) and females (152, 51.7%). The modal age of the responding pharmacists was under 30 years with a range of under 30–60. Respondents mostly had 1–5 years’ experience in practicing pharmacy. Regarding the employment position, the majority of respondents were employees; almost the same number of responses were collected from pharmacists working in the affluent area in Amman (West) and the deprived area of Amman (East) (Table 1).

Knowledge of generics and perception of generics’ substitution and prices of medicines

When assessing the pharmacists’ views on generic medicines, the pharmacists predominantly agreed that a generic medicine is bioequivalent to its originator (87.7%, n = 258). Most of the respondents (61.9%, n = 182) disagreed that the quality of originator medicine is better compared to generics. About 59.8% of the pharmacists disagreed that the generic medicines are less effective compared to originators (n = 176). The vast majority of respondents agreed that the generic medicines are cheaper alternative to the originators (90.2%, n = 265). Further analysis found that 55.4% of the pharmacists perceived that the prices of medicine in Jordan do not relatively reflect the income per capita (n = 163) (Table 2).

The pharmacists’ opinions were further evaluated on generic substitution, and more than half of the respondents (56.8%, n = 167) supported generic substitution in most cases, while 23.8% supported the substitution in all cases where a generic is available (n = 70), and the rest did not support generic substitution (19.4%, n = 57) (Figure 1).

The pharmacists were asked about the type of medicines, which is suitable for generic substitution, more than half of them believed that generic substitution is suitable for over-the-counter medicine (OTC), whereas 69.4% agreed to generic substitution for prescription-only medicine (POM) (Figure 2).

Perception of future implementation of generic substitution policy

When pharmacists were asked about their preference regarding the implementation of future generic substitution policy, 41.2% responders believed that they only need to consult the physician when substituting certain groups of medicines (n = 121). However, 30.6% of responders preferred to perform generic substitution without consulting the prescriber physician (n = 90). Only 28.2% (n = 83) of the pharmacists believed that they must always consult the physician when performing generic substitution.

Table 1. Demographics and practice characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>142 [48.3]</td>
</tr>
<tr>
<td>Female</td>
<td>152 [51.7]</td>
</tr>
<tr>
<td>Age group (years)</td>
<td></td>
</tr>
<tr>
<td>Under 30</td>
<td>159 [54.1]</td>
</tr>
<tr>
<td>30–40</td>
<td>100 [34.0]</td>
</tr>
<tr>
<td>41–50</td>
<td>24 [8.2]</td>
</tr>
<tr>
<td>51–60</td>
<td>11 [3.7]</td>
</tr>
<tr>
<td>Above 60</td>
<td>0 [0.0]</td>
</tr>
<tr>
<td>Practicing (years)</td>
<td></td>
</tr>
<tr>
<td>1–5</td>
<td>167 [56.8]</td>
</tr>
<tr>
<td>6–10</td>
<td>35 [11.9]</td>
</tr>
<tr>
<td>11–15</td>
<td>60 [20.4]</td>
</tr>
<tr>
<td>16–20</td>
<td>17 [5.8]</td>
</tr>
<tr>
<td>21 and above</td>
<td>15 [5.1]</td>
</tr>
<tr>
<td>Employment position</td>
<td></td>
</tr>
<tr>
<td>Self or part owner</td>
<td>75 [25.5]</td>
</tr>
<tr>
<td>Employee</td>
<td>219 [74.5]</td>
</tr>
<tr>
<td>Location of the pharmacy</td>
<td></td>
</tr>
<tr>
<td>West Amman (affluent)</td>
<td>160 [54.4]</td>
</tr>
<tr>
<td>East Amman (deprived)</td>
<td>134 [45.6]</td>
</tr>
</tbody>
</table>
Further analysis showed the types of medicines that need consultation with the physician when performing generic substitution. The majority of pharmacists (69%, n=203) preferred to consult the physician when substituting narrow therapeutic index drugs and 58.5% of the pharmacists preferred to consult when substituting controlled drug (n=172). Regarding POM, only 38.1% of the responders felt that they need to consult a physician when substituting these drugs (n=112), whereas only 15.3% (n=45) of responders preferred to consult a physician when performing generic substitution for OTC drug medicines.

Two-thirds (68.4%, n=201) of the pharmacists, who answered the multiple-choice question about the drivers of generic substitution, believed that they are the main driver for generic substitution practice according to their judgements, while half of pharmacists (53.1%) believed that the driver of generic substitution is patient request (n=156). The request of physician was the lowest driver as indicated by only third of the responders (35%, n=103).

When assessing the pharmacists’ views on future implementation of generic substitution policy in Jordan, all respondents agreed that the quality use of generic medicines among Jordanian patients can be achieved if both physicians and pharmacists worked together (100%, n=294), and 85.4% (n=251) of pharmacists agreed that they should be given the generic substitution right. The request of physician was the lowest driver as indicated by only third of the responders (35%, n=103).

The measures that should be adopted if generic substitution was allowed were further evaluated. More than half of the respondents (54.8%, n=161) believed that the generic of patient choice need to be provided, and 41.2% (n=121) of responders believed that locally produced generic medicines need to be provided. One-third of pharmacists (33.3%, n=98) believed that the cheapest medicine needs to be provided. Ninety-five (32.3%) pharmacists supported the existence of a list of originator and generic prices to be used by pharmacists to support their generic substitution decision, with a 25.5% (n=75) believing that the price list of equivalent originators/generics needs to be provided to patients upon request. Other responses given were the need for INN prescription to be implemented, and the supply should be based on patient income status (5.4%, n=16).

Some pharmacists provided additional information in relation to the topic in question, ‘the current tax on drugs which is 4% should be eliminated’.

Table 2. Community pharmacists’ responses to four-point Likert scale questions exploring knowledge of generics and perception of generics’ substitution and prices of medicines

<table>
<thead>
<tr>
<th>Question</th>
<th>Survey questions/statement</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A generic medicine is bioequivalent to its originator.</td>
<td>15 (5.1)</td>
<td>21 (7.1)</td>
<td>202 (68.7)</td>
<td>56 (19)</td>
</tr>
<tr>
<td>2</td>
<td>The quality of originator medicines is better compared to generics.</td>
<td>73 (24.8)</td>
<td>109 (37.1)</td>
<td>97 (33)</td>
<td>15 (5.1)</td>
</tr>
<tr>
<td>3</td>
<td>Generic medicines are less effective compared to originators.</td>
<td>28 (9.5)</td>
<td>148 (50.3)</td>
<td>111 (37.8)</td>
<td>7 (2.4)</td>
</tr>
<tr>
<td>4</td>
<td>Generic medicines are cheaper alternatives to originators.</td>
<td>3 (1)</td>
<td>26 (8.8)</td>
<td>221 (75.2)</td>
<td>44 (15)</td>
</tr>
<tr>
<td>5</td>
<td>The prices of medicines in Jordan relatively reflect the income per capita.</td>
<td>70 (23.8)</td>
<td>93 (31.6)</td>
<td>100 (34)</td>
<td>31 (10.5)</td>
</tr>
</tbody>
</table>
Another stated that ‘there is no confidence in pharmacists by the patient as many doctors tell them not to accept any change in the prescription therefore the role of the pharmacists should be enhanced and the pharmacist should appear as highly trusted health care provider’. The same pharmacist stated that ‘the prescribing physician and pharmacist should have continuous training through the Ministry of Health’.

**Discussion**

The current legislations in Jordan do not allow pharmacists to perform generic substitution for the prescribed branded medicine. However, the generic substitution is increasingly becoming a worldwide practice, which proves to be an effective mean of economical saving to health care expenditure. In order to implement a sound generic substitution policy in Jordan, all stakeholders should be involved. The findings from this study revealed that Jordanian pharmacists have positive views on generic medicines in general, in terms of quality, efficacy and safety, with 87.7% of the responding pharmacists believing that generic medicines are bio-equivalents to originator medicines. This confidence in generic medicines was reflected in the supporting of generic substitution in most cases by more than 80% of the responding pharmacists. Similar findings were reported by Allenet et al. in France. They indicated that 90% of the French pharmacists were in favour of the implementation of generic substitution right. Another study in Malaysia showed that more than 90% of community pharmacists believed that they should be granted rights of substitution. However, the
Malaysian study showed that community pharmacists had little confidence in locally produced generic medicines. This study on the other hand showed that Jordanian pharmacists had a positive view on generic medicines in general. In Jordan, the locally produced generics account for two-thirds of the total market share. The results thus provide an indirect evidence of the trust of the pharmacists in quality of local generics, which would make the implementation of generic substitution policy not only attractive, but would also reward the local manufacturers.

In addition, 204 pharmacists (69.4%) perceived that generic substitution is suitable for POM, which is a similar trend that was reported in the United States (69.2%). However, although most of the Jordanian pharmacists supported generic substitution in most cases, they revealed that there are some situations where the prescribers need to be consulted. The two types of medicines for which the pharmacists preferred to consult the prescribing physician were those with a narrow therapeutic index or controlled drugs. This might indicate the pharmacists’ lack of confidence in substituting these medicines. In order to boost confidence, a formulary including information about bioequivalence profile as well as safety of medicines should be developed. This will guide the pharmacists when performing generic substitution. Moreover, the availability of a clear pricing list of bioequivalent generics displayed in each pharmacy can also support pharmacists’ decision making.

An alternative way to encourage the utilisation of generic medications is generic prescribing, where physicians write prescriptions using the International Non-proprietary Name, and pharmacists have the choice which brand to dispense. In Jordan, it is understood that the generic prescribing is used in Governmental clinics and hospitals. Additionally, under the private insurance arrangements, physicians are encouraged to prescribe the lower priced brands. Nevertheless, currently, there are no mandatory legislations for such practice in Jordan. Therefore, implementing compulsory generic prescribing policy in Jordan would not only draw the attention to the fact that there are alternative available, but patients would also be in a better position to choose between brands. This would have a positive economical impact to the Government as well as patients when lower priced medicines are dispensed. This becomes clearer if we take into account the low annual income per capita of 4350 US dollars in Jordan as per 2010.

In this survey, a significant percentage (90.1%) of the pharmacists was in favour of implementing a compulsory generic prescribing policy system based on the international non-proprietary name INN, with 256 pharmacists (87%) agreeing with dispensing any medicine against the prescription. Introducing generic prescribing policy is likely to provide additional savings to the health system and consumers. Nonetheless, this can not be applicable as the local industry produces branded generics. Therefore, mandatory generic

<table>
<thead>
<tr>
<th>Question</th>
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<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Community pharmacists in Jordan should be given generic substitution right.</td>
<td>0 [0]</td>
<td>43 [14.6]</td>
<td>150 [51]</td>
<td>101 [34.4]</td>
</tr>
<tr>
<td>2</td>
<td>Generic substitution should be allowed only at patient request.</td>
<td>21 [7.1]</td>
<td>131 [44.6]</td>
<td>112 [38.1]</td>
<td>30 [10.2]</td>
</tr>
<tr>
<td>3</td>
<td>A prescribing system based on the international non-proprietary name INN should be implemented.</td>
<td>9 [3.1]</td>
<td>20 [6.8]</td>
<td>150 [51]</td>
<td>115 [39.1]</td>
</tr>
<tr>
<td>4</td>
<td>Prescribers should write prescription using the international non-proprietary name INN, and pharmacists be allowed to dispense any brand against a prescription.</td>
<td>6 [2]</td>
<td>32 [10.9]</td>
<td>118 [40.1]</td>
<td>138 [46.9]</td>
</tr>
<tr>
<td>5</td>
<td>Pharmacy profit margin should be variable according to your professional decision.</td>
<td>13 [4.4]</td>
<td>82 [27.9]</td>
<td>157 [53.4]</td>
<td>42 [14.3]</td>
</tr>
<tr>
<td>6</td>
<td>Quality use of generic medicines among Jordanian consumers can be achieved if both physicians and pharmacist work together.</td>
<td>0 [0]</td>
<td>0 [0]</td>
<td>169 [57.5]</td>
<td>125 [42.5]</td>
</tr>
</tbody>
</table>
prescribing might be expected to have a negative effect on the local generics industry; instead, a brand substitution policy should be implemented. Such policy should clearly state that bio-equivalence is identified between the brands (i.e. branded originator and/or branded generics) and should allow for patient choices to be taken into consideration. Patients’ awareness and prescribers and pharmacists training will need to take place for such a policy to be successfully implemented.

Conclusion

The Jordanian community pharmacists have a good knowledge and perception towards generic medicines. Moreover, they hold a positive view regarding locally produced generics. As a result, most community pharmacists in Jordan were in favour of implementing a generic substitution policy. However, such a policy can only be implemented, provided that the bio-equivalence has been established between brands and that the regulators, prescribers and patients agree to it. A formulary of interchangeable medicines and their prices must be developed to guide pharmacists’ decision making when performing generic substitution. The Jordanian pharmacists were generally supportive of introducing a compulsory generic prescribing legislation. However, it is inevitable that such policy may be damaging to the local industry, as the majority (97%) of the locally produced generics are branded generics.\(^{28}\) Therefore, implementing a brand substitution policy is best suited at this stage. However, the pharmacy profit margin will have to be reconsidered if such a policy is implemented.

Study limitation

One limitation of this study is that the views are limited as the majority of the responding pharmacists were employees, while only 25.5% were self or part owner. Since the country operates fixed profit margin to all medicines, generic substitution policy might have a negative impact on pharmacies’ profit (i.e. selling originator medicine, which is expensive by nature will make more profits compared to selling the alternative cheaper generics).

References


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