Translation and validation of the Arabic version of generic medicines scale

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Abstract

Background: Generic drugs are considered the best alternative for the originator brand drugs because they have the same quality, safety, and efficacy yet offered at considerbaly lower cost. Prior research has developed instrumentation to assess patients’ perceptions of generic drugs; however, little has been done to translate these measures in other languages.

Objectives: This study’s aim was to translate and validate an Arabic version of the generic drug scale (GMS) in a Jordanian sample. This was a cross-sectional study.

Methods: The English version of the GMS was translated to an Arabic version using the standard “forward-backward” procedure of translation. The questionnaire was distributed to 225 patients. The translated version was then validated in a sample of patients. Face validity of the translated GMS was confirmed with pilot testing. Content validity of the translated GMS was evaluated by a number of pharmacists and academicians. Confirmatory factor analysis (CFA) was used to test a pre-specified relationship of observed measures.

Results: The GMS consisted of two subscales: efficacy, and similarity of generic drugs to originator brand drugs. The efficacy subscale consisted of ten items while the similarity subscale consisted of six. The responses to the items were framed on five-point, Likert-type scales. The instrument demonstrated good internal consistency (Cronbach’s alpha = 0.83). The range model fit was good for some fit indices. The RMSEA value was 0.08, which indicates good fit. Also, CMIN/DF indicated a good fit model with a value of 2.7, as well as GFI and CFI values of 0.95 and 0.91, respectively. NFI and CFI values were 0.92 and 0.93, respectively. Factor loadings were over 0.30 for all items, which means the scale has CFA validity indictors.

Conclusions: The Arabic version of GMS was proved to be a reliable and valid measure to investigate patients’ belief regarding generic drugs as it showed acceptable, internal consistency reliability, face and content validity.

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Keywords: Generic medicines; Questionnaire; Factor analysis; Validity; Arabic
Introduction

In 2017, global spending for medications is anticipated to reach 1.2 trillion US dollars. Thus, many countries are trying to ameliorate this economic burden by establishing an effective generic market and achieve a more rapid increase in generic utilization levels.\(^1\) A generic drug is defined by the World Health Organization (WHO) as “a pharmaceutical product, usually intended to be interchangeable with an innovator product that is manufactured without a license from the innovator company and marketed after the expiry date of the patent or other exclusive rights.” Generic drugs are marketed under a non-proprietary or approved,\(^2\) but are chemically identical to their corresponding originator branded drugs. They are generally less expensive because of intense competition among generic manufacturers.\(^3,4\) Furthermore, generic manufacturers are not required to repeat the costly clinical trials that newly marketed drugs must, and generally, do not pay for costly advertising, marketing, and promotion.\(^5\)

Because many studies have previously demonstrated that a generic drug is as efficacious and safe as originator drug,\(^6,7\) generic substitution is increasingly encouraged by health authorities throughout the world to save health care systems money.\(^8\) Health care expenditures have increased significantly over the years, and pharmaceutical costs have been reported as the second main driver for health care cost escalation.\(^9,10\) The use of generic drugs is considered as an important method to curb the escalating cost of drugs.\(^11\) Studies have repeatedly confirmed the cost-saving benefit of generic drugs.\(^12,13\) According to the U.S. Food and Drug Administration (FDA), the use of generic drugs saved $158 billion in 2010 alone, which is about $3 billion saved every week.\(^3\)

In Jordan, expenditures on drugs exceeded 55 million Jordanian Dinar (JD) in 2013.\(^14\) The Jordanian pharmaceutical market is made up of imported products (75%) and locally manufactured products (25%). Most of the locally produced drugs are generics, usually sold under a commercial name (i.e., branded generics). Approximately 5% of local production is produced under license through an agreement with the originator brand manufacturer, and there is some local labeling and packaging undertaken using products supplied in bulk from the originator company.\(^15\)

A study conducted by the World Health Organization (WHO) in 40 countries, including Jordan, showed that there is nearly a 60% average savings by switching from originator brands to the lowest priced generics in Jordan.\(^16\) Furthermore, a recent study found that about two-thirds of the studied sample of patients believed that the cost of drugs in Jordan is too high, and that they prefer to be prescribed and/or dispensed the cheapest drug available, if possible.\(^17\) However, generic substitution is not permitted by the pharmacist, and only a physician can decide whether to substitute with generics or not.\(^18\) In the last decade, the Jordanian Ministry of Health has allowed doctors in public hospitals and health clinics to prescribe generics. Furthermore, insurance companies encourage doctors to prescribe the lowest priced generics.\(^19\)

Patient knowledge and perception of generic drugs is affected by many factors, such as demographic factors, information provided by the health care provider, experience with use of generics, cost and others.\(^20–22\) One study identified cost as the major reason for acceptance of generic drugs among consumers.\(^23\) Globally, many studies have conducted to measure knowledge and perception regarding generic drug use.\(^17,20–28\) In the Arab world, there are few studies to measure patients’ knowledge and perception of generic drugs. Also, there is a general unawareness of the benefit of generic drugs, which may have led to their limited use.\(^23,27,28\) Up until now, there is no valid Arabic version of any measure to assess perceptions of Arabs toward generic drug use. The objective of this study was to translate and validate the Arabic version of the generic drugs scale (GMS).

Methods

Questionnaire

The questionnaire developed by Figueiras et al\(^29\) was translated. Written permission was obtained from the author for the translation and validation process of the Arabic version. The questionnaire consisted of two sections. The first section contained demographic information. The second comprised a 16-item generic drugs scale (GMS) that intended to evaluate patients’ beliefs towards generic drugs. Items 1–10 in the questionnaire measured patients’ beliefs in the drug’s efficacy, while items 11–16 measured patients’
beliefs in similarity of generic drugs. The responses were framed on five-point, Likert-type scales (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree).

Translation process

Translation of the questionnaire was performed according to international guidelines for translational studies. Forward translation of the original questionnaire from English to Arabic was carried out by two independent qualified linguistic translators (fluent in both Arabic and English). The translators were blinded from each other. The two translated versions were compared with the original version and examined for discrepancies of words, sentences, and meanings. This process generated the preliminary initial translated version of Arabic GMS (PI-TL). Backward translation of the Arabic GMS (PI-TL) from Arabic to English was carried out by other two qualified independent translators. The back-translated versions and PI-TL were evaluated for similarity of the instructions, items and response format regarding wording, sentence structure, meaning, and relevance. Discussions were held between the translators and researchers and discrepancies were resolved in a meeting. A final version of the Arabic GMS was approved. The study proposal was approved by the Institutional Review Board (IRB) of Jordan University of Science and Technology (JUST).

Pilot test

The translated GMS was then pilot tested on a convenience sample of 20 patients at King Abdullah University Hospital (KAUH). Minor modifications were made based on feedback from the patients’ sample. Responses of the pilot study were not included in the final results. The final version of the Arabic GMS was completed and made available for the reliability and validity study.

Preliminary study

A preliminary study was conducted utilizing about 1000 patients. However, results of preliminary study found that some GMS items need to be reworded as the statistical analysis revealed that loading factors for some items (item 2, 3, 4, 5, 6, and 8) of the scale were below the accepted value (0.30). The items were further revised by an expert in pharmacoeconomics who speaks both Arabic and English languages fluently.

Second study

Subjects and data collection

Patients were included in the study if they were older than 18 years and were literate (i.e. speak, read, and write) in Arabic language. Patients were excluded from the study if they had cognitive impairment. For the validation of the translated GMS, 225 patients were recruited. The patients completed the translated GMS in face-to-face interviews conducted by two trained interviewers. Verbal consent was obtained from each patient prior to the study. In addition, patients were informed of the research objectives, confidentiality of their responses, and their right to withdraw from the study. The study’s data was collected over a 4-month period (completed September–December, 2015).

Statistical analysis

Descriptive statistics were used to describe the demographic characteristics. Content and face validity tests were conducted, and Cronbach’s alpha test of internal consistency was used for the measurement of reliability. Confirmatory factor analysis (CFA) that includes goodness-of-fit tests and different incremental fit measures was used to test a pre-specified relationship of observed measures. CFA analysis was conducted with MPlus 5.2.

Results

A total of 225 patients were enrolled. The majority of the respondents were female (n = 157, 69.8%). More than half of the respondents had a university level education or higher (Table 1). Approximately two-thirds of the respondents usually ask doctors about their drugs (n = 148, 65.8%), and more than half knew the term ‘generic drug’ (n = 134, 59.6%) (Table 1).

Validity analysis

In the preliminary study, content validity of the Arabic questionnaire was evaluated by a number of pharmacists and academicians who are experts in the field. However, based on the results of the preliminary study, the items were further revised. Immediately after the translation, the Arabic questionnaire was submitted to 50 patients to evaluate whether the instructions, organization, item responses and format were clear, understandable, and in a logical order. The patients in the pilot testing claimed that the
statements were clear, easy to understand, and in a logical order.

Confirmatory factor analysis

A total of 16 items measure two constructs, i.e., efficacy of generic medicines, and similarity of generic to brand medicines. The range model fit was good for some fit indices. The RMSEA value was 0.08, which indicated good fit. Also, CMIN/DF indicated a good fit model with a value of 2.7. Furthermore, GFI and CFI values were 0.95 and 0.91, respectively. Both values were within acceptable limits. NNFI values were 0.92 and 0.93, respectively. As shown in Table 2, all estimated parameters were significant \( P < 0.05 \). The loadings factors were over 0.30 for all items, which means that the scale has CFA validity indictors. The standard errors ranged between 0.22 and 0.54, with the items corresponding to the factor efficacy presenting higher values. Fig. 1 shows the correlations between the two factors (i.e., efficacy and similarity) in which the correlation was positive and significant \( P < 0.05 \). Specifically, the correlation of 0.7 for perceptions of efficacy and similarity was obtained.

Reliability analysis

Internal consistency

As shown in Table 3, the Cronbach’s alpha values were within acceptable ranges.

Descriptive statistics of Arabic version of GMS

Beliefs in the efficacy of generics

In this study, only 34.3% of the respondents \( (n = 77) \) believed that the efficacy of generic drugs was the same as originator brand drugs. Only 29.4% \( (n = 66) \) of the respondents believed that generic drugs take longer time to be effective (Table 4). Three quarters of the respondents \( (n = 169, 75.1\%) \) believed that generic drugs are good for less serious diseases (Table 4).

Beliefs in similarity of generic to brand drugs

In this study, fewer than one third of respondents \( (n = 67, 29.8\%) \) believed that generic drugs have similar taste as originator brand drugs. The majority of respondents \( (n = 159, 70.6\%) \) knew that the packaging of generic drugs was different from originator brand drugs (Table 5). About two-thirds \( (n = 143, 63.6\%) \) believed that the indication of generic drugs is the same as originator brand counterparts (Table 5).

Discussion

The aim of this study was to translate and validate the Arabic version of the GMS. Additionally, this study evaluated Jordanian patients’ beliefs toward generic drugs using the Arabic version of the GMS.

This study reported that more than half of respondents knew about generic drugs. This can be explained by the result that showed more than half of the respondents had a university degree. People who are more educated are more knowledgeable with regards to such issues and tend to be familiar with generic drugs. In this study the rate of familiarity with generic drugs was higher than other studies conducted in Jamaica and Malaysia (36.4%, 49%, respectively). However, it was lower compared to studies conducted in Portugal, the UK, Japan and USA (100%, 70%, and 68.4%, respectively). Several factors may lead to low familiarity with generic drugs. Such factors may include the lack of communication between physicians and patients and the socioeconomic status of some of the respondents.
Table 2
Factor analysis of the GMS

<table>
<thead>
<tr>
<th>Perception</th>
<th>Estimate (loading factor)</th>
<th>S.E.</th>
<th>C.R.</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The efficacy of generic drugs is the same of brand drugs.</td>
<td>efficacy</td>
<td>0.37</td>
<td>0.51</td>
</tr>
<tr>
<td>2</td>
<td>Generic drugs take longer time to be efficacious.</td>
<td>efficacy</td>
<td>0.78</td>
<td>0.54</td>
</tr>
<tr>
<td>3</td>
<td>Generic drugs are good for less serious diseases.</td>
<td>efficacy</td>
<td>0.52</td>
<td>0.42</td>
</tr>
<tr>
<td>4</td>
<td>Treatments with generic drugs take longer.</td>
<td>efficacy</td>
<td>0.35</td>
<td>0.22</td>
</tr>
<tr>
<td>5</td>
<td>Generic drugs are made with lower quality substances.</td>
<td>efficacy</td>
<td>0.61</td>
<td>0.43</td>
</tr>
<tr>
<td>6</td>
<td>Generic antibiotics are less efficacious than brand antibiotics.</td>
<td>efficacy</td>
<td>0.58</td>
<td>0.39</td>
</tr>
<tr>
<td>7</td>
<td>Generic drugs have a better quality control than brand drugs.</td>
<td>efficacy</td>
<td>0.62</td>
<td>0.43</td>
</tr>
<tr>
<td>8</td>
<td>Generic drugs are cheaper because they are less efficacious.</td>
<td>efficacy</td>
<td>0.39</td>
<td>0.32</td>
</tr>
<tr>
<td>9</td>
<td>Generic drugs have the same effect as brand ones.</td>
<td>efficacy</td>
<td>0.61</td>
<td>0.42</td>
</tr>
<tr>
<td>10</td>
<td>Generic drugs are used for the same illnesses.</td>
<td>efficacy</td>
<td>0.68</td>
<td>0.53</td>
</tr>
<tr>
<td>11</td>
<td>Generic drugs are exactly the same as brand drugs.</td>
<td>similarity</td>
<td>0.48</td>
<td>0.05</td>
</tr>
<tr>
<td>12</td>
<td>The use of generic drugs is similar to brand ones.</td>
<td>similarity</td>
<td>0.46</td>
<td>0.33</td>
</tr>
<tr>
<td>13</td>
<td>Generic drugs have a different box from brand drugs.</td>
<td>similarity</td>
<td>0.56</td>
<td>0.35</td>
</tr>
<tr>
<td>14</td>
<td>Generic drugs have the same side effects as brand drugs.</td>
<td>similarity</td>
<td>0.38</td>
<td>0.26</td>
</tr>
<tr>
<td>15</td>
<td>Generic drugs have a similar taste as brand drugs.</td>
<td>similarity</td>
<td>0.35</td>
<td>0.30</td>
</tr>
<tr>
<td>16</td>
<td>Generic tablets are the same as brand ones.</td>
<td>similarity</td>
<td>0.45</td>
<td>0.32</td>
</tr>
</tbody>
</table>

aS.E. systemic error
bC.R. critical ratio
More than half of the respondents’ income was JD 500 or less. People with lower incomes may spend less time on reading and health care seeking behaviors, thus, exposing the people less to issues related to drugs. As a result, patients may tend to use cheaper drugs without actually realizing the fact that their being generic is the reason for their lower cost.

Communication between health care professionals and patients about generic drugs is one of the most important factors associated with enhancing the use of generic drugs. In fact, health care practitioners not only persuade patients to accept generic drugs, but also make them confident and feel more comfortable using these less costly alternatives. In this study, nearly two-thirds of the surveyed patients (65.8%) mentioned that they communicated with their doctors about their drugs.

In this study, two types of validity tests were conducted (i.e., content and face validity tests). Comments provided by patients in the pilot testing indicated that questionnaire’s statements were clear, easy to understand, and in a logical order. Moreover, the study’s results found that the CFA model of the Arabic GMS had good model fit, and the loadings of the items indicated the validity of the model.

Table 3

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Item no.</th>
<th>Cronbach’s $\alpha$ coefficient $^b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>1–16</td>
<td>0.83</td>
</tr>
<tr>
<td>Efficacy</td>
<td>1–10</td>
<td>0.77</td>
</tr>
<tr>
<td>Similarity</td>
<td>11–16</td>
<td>0.72</td>
</tr>
</tbody>
</table>

$^a$ Numbers correspond to the item numbers in the questionnaire.

$^b$ Cronbach’s $\alpha$ coefficients > 0.70 indicate adequate scale reliability.

Once the validity tests were completed, the final version of the Arabic GMS was examined to assess its reliability. In this study, alpha values for efficacy and similarity dimensions for the Arabic GMS were 0.77 and 0.72, respectively. These values were higher than the values found by Wong et al (0.623 and 0.716, respectively), who translated and validated the Malaysian GMS. However, alpha values for the two dimensions in this study were lower than alpha values found by Figueiras et al (0.91; 0.80, respectively). The difference in alpha values might be due to difference in the demographic characteristics between the different studies’ populations. This could also be due to the fact that Cronbach’s alpha coefficient is sample-specific, and it measures internal consistency for the test responses from current respondents only. However, the overall alpha value (0.83) for the Arabic GMS was acceptable. Generally, a low alpha value could be due to a low number of questions; poor interrelatedness between items or heterogeneous constructs. On the other hand, if the alpha value is too high, it may suggest that some items are redundant, as they are testing the same question but in a different guise. Test-retest reliability was not assessed in this study due to the difficulty in securing the same patient sample to re-administer the questionnaire to them.

Patients’ responses showed a reasonable belief in the efficacy and similarity of generic drugs, which can be explained by the high level of education among the subjects of this study. More than half of the respondents had a university degree. The present study findings are in agreement with other studies which found that patients with higher education level generally had a stronger belief in the efficacy of generic drugs. In this study, only about one third of respondents believed that the efficacy of generic drugs is the same as the brand originator drugs. This could be due to patients’ experiences with using generic drugs in public (ministry of health) hospitals since most of the drugs dispensed in public hospitals are generic drugs. Several studies found that, previous experience with generic drugs was significantly affecting patients’ acceptance of generic drugs. Moreover, a majority of the respondents believed that generic drugs were more appropriate for less serious diseases. This finding indicates that, patients still do not have full confidence in using generic drugs for serious or life threatening diseases. Like in other studies, the current findings suggest that the seriousness
### Table 4
Patients beliefs about the efficacy of generic drugs

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The efficacy of generic drugs is the same as of brand drugs.</td>
<td>20</td>
<td>8.9%</td>
<td>97</td>
<td>43.1%</td>
<td>31</td>
<td>13.8%</td>
<td>71</td>
</tr>
<tr>
<td>2</td>
<td>Generic drugs take longer time to be efficacious.</td>
<td>6</td>
<td>2.7%</td>
<td>114</td>
<td>50.7%</td>
<td>44</td>
<td>19.6%</td>
<td>54</td>
</tr>
<tr>
<td>3</td>
<td>Generic drugs are good for less serious diseases.</td>
<td>7</td>
<td>3.1%</td>
<td>27</td>
<td>12.0%</td>
<td>22</td>
<td>9.8%</td>
<td>147</td>
</tr>
<tr>
<td>4</td>
<td>Treatments with generic drugs take longer.</td>
<td>3</td>
<td>1.3%</td>
<td>117</td>
<td>52.0%</td>
<td>39</td>
<td>17.3%</td>
<td>60</td>
</tr>
<tr>
<td>5</td>
<td>Generic drugs are made with lower quality substances.</td>
<td>9</td>
<td>4.0%</td>
<td>81</td>
<td>36.0%</td>
<td>81</td>
<td>36.0%</td>
<td>46</td>
</tr>
<tr>
<td>6</td>
<td>Generic antibiotics are less efficacious than brand antibiotics.</td>
<td>10</td>
<td>4.4%</td>
<td>140</td>
<td>62.2%</td>
<td>36</td>
<td>16.0%</td>
<td>30</td>
</tr>
<tr>
<td>7</td>
<td>Generic drugs have a better quality control than brand drugs.</td>
<td>5</td>
<td>2.2%</td>
<td>40</td>
<td>17.8%</td>
<td>101</td>
<td>44.9%</td>
<td>74</td>
</tr>
<tr>
<td>8</td>
<td>Generic drugs are cheaper because they are less efficacious.</td>
<td>9</td>
<td>4.0%</td>
<td>92</td>
<td>40.9%</td>
<td>43</td>
<td>19.1%</td>
<td>70</td>
</tr>
<tr>
<td>9</td>
<td>Generic drugs have the same effect than brand ones.</td>
<td>15</td>
<td>6.7%</td>
<td>111</td>
<td>49.3%</td>
<td>37</td>
<td>16.4%</td>
<td>55</td>
</tr>
<tr>
<td>10</td>
<td>Generic drugs are used for the same illnesses.</td>
<td>11</td>
<td>4.9%</td>
<td>47</td>
<td>20.9%</td>
<td>31</td>
<td>13.8%</td>
<td>123</td>
</tr>
</tbody>
</table>
Table 5
Patients' beliefs about the similarity of generic drugs

<table>
<thead>
<tr>
<th>Item in questionnaire</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Generic tablets are the same as brand ones</td>
<td>8</td>
<td>3.6%</td>
<td>137</td>
<td>60.9%</td>
<td>41</td>
<td>18.2%</td>
<td>36</td>
</tr>
<tr>
<td>Generic drugs have a similar taste as brand drugs</td>
<td>11</td>
<td>4.9%</td>
<td>84</td>
<td>37.3%</td>
<td>63</td>
<td>28.0%</td>
<td>58</td>
</tr>
<tr>
<td>Generic drugs have the same side effects as brand drugs</td>
<td>7</td>
<td>3.1%</td>
<td>102</td>
<td>45.3%</td>
<td>59</td>
<td>26.2%</td>
<td>52</td>
</tr>
<tr>
<td>Generic drugs have a different box from brand drugs</td>
<td>4</td>
<td>1.8%</td>
<td>37</td>
<td>16.4%</td>
<td>25</td>
<td>11.1%</td>
<td>131</td>
</tr>
<tr>
<td>The use of generic drugs is similar to brand ones</td>
<td>6</td>
<td>2.7%</td>
<td>46</td>
<td>20.4%</td>
<td>30</td>
<td>13.3%</td>
<td>132</td>
</tr>
<tr>
<td>Generic drugs are exactly the same as brand drugs</td>
<td>26</td>
<td>11.6%</td>
<td>120</td>
<td>53.3%</td>
<td>45</td>
<td>20.0%</td>
<td>31</td>
</tr>
</tbody>
</table>
of the medical case or disease is an important factor that may affect patients’ use of generic drugs. In those studies, the more serious the patients’ conditions, the less likely they are to use a generic drug.51,52

Approximately one third of respondents were suspicious of the efficacy of generic drugs because they were less expensive. This finding was similar to the finding of a German study where 37% of patients expressed general skepticism towards generic drugs because of their lower price.21 The misconception that lower price of generics equates to lower quality needs to be addressed.37,53

Only 24% of the respondents in this study agreed that generic drugs were of lower quality. In fact, in Jordan, generic manufacturers have to meet good manufacturing practice requirement, guidelines for pharmaceutical development, and product testing. Moreover, before registration, generic drugs must undergo a strict registration process to ensure their quality, safety, efficacy and bioequivalence. Therefore, it is imperative to educate patients of the vigorousness of generic drug development and approval process.54 This may help to correct the negative perception and misconceptions with regards to the quality of generic drugs.

Most respondents in this study’s sample did not agree that generic and originator brand drugs are similar. In contrast, a majority of patients from Portugal and UK reported that they are aware of the availability of different brands of the “same drug.”34,35 On the other hand, the findings of this study were similar to those from other studies conducted in Iraq, Bulgaria, Japan and Norway, which showed that patients lack the knowledge regarding the similarity and difference between generic and originator brand drugs.36,55,56

Study limitations

This study had some limitations to be considered when interpreting the results. A principal limitation is that the study cannot be generalized to a wider population because the sample was highly specific. The sample was mainly drawn from a younger age group and from one hospital, even though this hospital serves nearly a quarter of the country’s population. However, selecting a younger sample was somewhat of a necessity in this study due to a relatively high degree of illiteracy among the elderly, which limits the use of questionnaires, which in effect excludes this segment of the population. Further research is needed to assess the extent to which beliefs regarding generics change over time as their use increases, and to explore the influence of these beliefs on attitudes towards generic drugs and their impact on health care delivery, treatment choice and adherence. Communication between health care professionals and patients about generic drugs is one of the most important factors associated with the acceptance of generic drugs. The potential impact of health care providers properly informing their patients of the value of generic drugs cannot be overstated. Furthermore, the misconception that lower price generics equates to lower quality, need to be corrected.

Conclusion

This study found that the Arabic version of GMS was a valid instrument, and that it could a valuable instrument in studies concerned with measuring patients’ beliefs toward generic drugs in Arab countries.

Acknowledgment

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