KNOWLEDGE AND ATTITUDE OF IRAQI PHARMACISTS IN BAGHDAD COMMUNITY TOWARD ADVERSE DRUG REACTIONS MONITORING

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ABSTRACT

Objective: Adverse drug reactions (ADRs) can lead to many complications associated with the use of medications. In Iraq, where a wide range of medications is misused widely due to different reasons, the Iraqi Pharmacovigilance (PV) program started out few years ago to collect information about adverse drug reactions and since the success of this program depends on the effective participation of all medical staffs including pharmacists in this program. This study aimed to assess the knowledge, attitude, and degree of awareness of Iraqi pharmacists in Baghdad community toward adverse drug reactions monitoring and PV program.

Methods: This study was a cross-sectional descriptive survey based on individual questionnaire that administered in English to a convenience sample of 150 pharmacists working in 3 colleges of pharmacy, 20 community pharmacies, and 3 hospitals situated in different areas of Baghdad which is the capital of Iraq. The questionnaire consists of three parts that collect demographic data on the participants and their knowledge, attitudes toward PV.

Results: Although about 62% of pharmacists have observed ADRs in their practice, only half of the respondents have heard about the term PV; 48% were aware of the national PV program. Moreover, 47.33% of the respondents mentioned that ADRs associated with herbal products should not be reported. Although 79% of the respondents thought that reporting ADRs are a pharmacist’s duty nevertheless 8% of them thought that ADRs reporting in Iraq are not widely promoted by the relevant authority. The study showed high tendency for participation in and ADR monitoring program. Interestingly, 60% of respondents report that their workplace does not encourage them for reporting ADRs while 48% of respondents indicated that they do not have enough time for reporting ADRs and 38% of them declared their fearing of facing legal problem from that.

Conclusion: Iraqi pharmacists although have a high tendency in participation in ADRs monitoring program but have a poor knowledge about PV practices; they lack understanding of the details about the national PV system and ADRs reporting process and may need more information on how ADRs reporting are performed.

Keywords: Knowledge, Attitudes, Adverse drug reactions, Pharmacovigilance.

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This study is the foremost study in Iraq designed to evaluate the knowledge of Iraqi pharmacists in Baghdad community toward ADRs monitoring program (PV system) and assess their attitude to participate in this program.

**METHODS**

This study was a cross-sectional descriptive survey based on individual questionnaire developed by authors of this study based on multiple pretested questionnaires in similar literatures. The questionnaire approved by Scientific Committee in Department of Clinical Pharmacy, college of Pharmacy, Baghdad University (Tables 1-3).

The questionnaire administered in English to a convenience sample of 150 pharmacists working in 3 colleges of pharmacy, 20 community pharmacies, and 3 hospitals situated in different areas of Baghdad which is the capital of Iraq. The study sample was collected during the periods from November 2015 to September 2016. The study was approved by the Ethics and Research Committee in the Department of Clinical Pharmacy, College of Pharmacy, Baghdad University. Verbal consent was obtained from all participants who agreed to participate in the study after explaining the objectives, importance, and benefits of this study. Participants were told that all information provided was completely confidential with a nameless presentation of the results.

**Statistical analysis**

The collected data from the completed questionnaires were assessed for descriptive statistics such as frequencies and percentages. Statistical analysis was analyzed using Microsoft Excel program 2013.

**RESULTS**

**Participants’ demographic data**

The questionnaire administered to 200 pharmacists, but only 150 accept to fill it. The response rate of the survey was 75%. The age of pharmacists participated ranging from 23 to 65 years. The highest percentage was females (56.7%), qualified as bachelor pharmacists (63.3%) and with work experience more than 10 years (43.3%). Details of the respondents' demographic profile are illustrated in Table 1.

**Knowledge of ADR reporting and monitoring by respondents**

Half of the respondents have heard about PV, 43.33% were aware of the national PV program. On the other hand, 34.67% of the respondents mentioned that ADRs associated with herbal products should not be reported, whereas 74% thought that the responsible organization for monitoring ADRs is MOH as shown in Table 2.

**Attitudes toward ADR reporting**

Table 3 shows that 79% of the respondents thought that reporting ADRs is a pharmacist's duty and 82% who thought that ADR reporting in Iraq is not widely promoted by relevant authority whereas 74% declared their interest in the participation in ADR reporting system, 62% have

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**Table 1: Demographic characteristics of the respondents**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Category</th>
<th>Total N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>65 (43.3)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>85 (56.7)</td>
</tr>
<tr>
<td>Age</td>
<td>23-33</td>
<td>63 (42)</td>
</tr>
<tr>
<td></td>
<td>34-44</td>
<td>48 (32)</td>
</tr>
<tr>
<td></td>
<td>&gt;44</td>
<td>39 (26)</td>
</tr>
<tr>
<td>Qualification</td>
<td>Diploma</td>
<td>9 (6)</td>
</tr>
<tr>
<td></td>
<td>Bachelor</td>
<td>95 (63.3)</td>
</tr>
<tr>
<td></td>
<td>Master</td>
<td>29 (19.3)</td>
</tr>
<tr>
<td></td>
<td>PhD</td>
<td>17 (11.3)</td>
</tr>
<tr>
<td>Work experience</td>
<td>1-5 years</td>
<td>51 (34)</td>
</tr>
<tr>
<td></td>
<td>6-10 years</td>
<td>34 (22.6)</td>
</tr>
<tr>
<td></td>
<td>&gt;10 years</td>
<td>65 (43.3)</td>
</tr>
<tr>
<td>Workplace</td>
<td>Pharmacy</td>
<td>50 (33.3)</td>
</tr>
<tr>
<td></td>
<td>Hospital</td>
<td>43 (28.67)</td>
</tr>
<tr>
<td></td>
<td>College</td>
<td>41 (27.33)</td>
</tr>
<tr>
<td></td>
<td>Else</td>
<td>16 (10.67)</td>
</tr>
</tbody>
</table>

Sample size N=150

**Table 2: Knowledge of ADRs reporting and monitoring by respondents**

<table>
<thead>
<tr>
<th>Identified knowledge</th>
<th>Responses, N (%)</th>
<th>Yes</th>
<th>No</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you hear about the term PV?</td>
<td>76 (50.67)</td>
<td>61 (40.67)</td>
<td>13 (8.66)</td>
<td></td>
</tr>
<tr>
<td>Are you aware about the national PV program?</td>
<td>65 (43.33)</td>
<td>66 (44)</td>
<td>19 (12.67)</td>
<td></td>
</tr>
<tr>
<td>Do you think that ADRs associated with herbal products should not be reported in PV?</td>
<td>52 (34.67)</td>
<td>71 (47.33)</td>
<td>27 (18)</td>
<td></td>
</tr>
</tbody>
</table>

**Pharmacists syndicate**

| Who do you think the responsible organization for collecting and monitoring ADRs in Iraq? | 24 (16) | 111 (74) | 15 (10) |

Sample size N=150. PV: Pharmacovigilance, ADR: Adverse drug reactions, MOH: Ministry of Health

**Table 3: Responses of respondents to the attitude related questions**

<table>
<thead>
<tr>
<th>Identified attitudes</th>
<th>Responses, N (%)</th>
<th>Yes</th>
<th>No</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think that reporting ADR is a pharmacist’s duty?</td>
<td>119 (79.33)</td>
<td>15 (1)</td>
<td>16 (11.67)</td>
<td></td>
</tr>
<tr>
<td>Do you think that ADR reporting in Iraq is not widely promoted by relevant authorities?</td>
<td>124 (82.67)</td>
<td>14 (9.33)</td>
<td>12 (8)</td>
<td></td>
</tr>
<tr>
<td>Are you interested in participating in the ADR reporting system?</td>
<td>111 (74)</td>
<td>26 (17.33)</td>
<td>13 (8.67)</td>
<td></td>
</tr>
<tr>
<td>Have you observed ADRs cases in your practice?</td>
<td>94 (62.67)</td>
<td>39 (26)</td>
<td>17 (11.33)</td>
<td></td>
</tr>
<tr>
<td>Do you think that pharmacists do not have enough time?</td>
<td>72 (48)</td>
<td>67 (44.67)</td>
<td>21 (14)</td>
<td></td>
</tr>
<tr>
<td>Are you afraid of facing legal problems from that?</td>
<td>57 (38)</td>
<td>65 (43.33)</td>
<td>28 (18.67)</td>
<td></td>
</tr>
</tbody>
</table>

Sample size N=150. ADR: Adverse drug reactions
observed ADRs in their practice; however, 60% of respondents report that their workplace does not encourage them for reporting ADRs. 48% of respondents showed that they do not have enough time for reporting ADRs, and 38% of them declared their fearing of facing legal problem from that.

DISCUSSION

This cross-sectional survey was conducted with a convenience sample of 150 pharmacists to collect information on what they know, believe, and do regarding adverse drugs reaction monitoring and the Iraqi PV program. The present study is similar to previous studies conducted in Yemen [16], many developing countries [17,18], and developed countries [19,20].

The study has shown a gap in the knowledge of Iraqi pharmacists about ADRs monitoring center in Iraq and PV system and about 44% of participants do not have a full knowledge about this center and 47% of them did not think that they are responsible for reporting adverse reactions related to herbal products. Although these percentages regarded low in comparison to another studies performed other countries like in Saudi Arabia where 78.8% did not know that pharmacists can submit ADRs reports online [21] or in a pilot study conducted in Turkey, where only 17.2% of the pharmacists had any knowledge about “PV” [18] in addition to a similar study conducted in Yemen where 69% of pharmacist unaware of national PV program [16].

Inadequate knowledge of healthcare professionals is most probably due to the fact that drug safety is not taken seriously worldwide, particularly in developing countries [17,18] although it should be one of the top priorities in healthcare programs.

Furthermore, the PV center activities are still inadequate with no sufficient advertising about it in Iraq. Despite the findings of relatively high rates of unawareness and inadequate knowledge among participants, 79% of them thought that reporting ADRs is a pharmacist’s duty and that similar to many previous studies have shown that while the right attitude for ADR reporting exists among most of the pharmacists and physicians, the actual practice of ADRs reporting is lacking [17]. The main problem faced national PV systems worldwide is underreporting [2].

Although high percentage (79%) of participant said that reporting adverse drug reaction is a pharmacist duty and more than 62.67% observe ADR during their normal work, all of them did not report these ADR and that similar to many studies in India [17], Mumbai [22], and Ahmadianab [23] have shown that prescribers have high knowledge and attitude with regard to ADRs reporting but practice it poorly. This can be attributed to many reasons such as unawareness of the existence of a national ADRs reporting system, the workplace did not encourage them to report an ADR as 60.67, also about 38% of participants afraid of facing legal problems from that or they do not have enough time to report these ADRs (48%).

The effectiveness of PV activities in a country is directly dependent on the active participation of healthcare professionals, patients, and consumers [24]. Fortunately, all respondents in this study were in favor of the idea of setting up the ADRs reporting system in Iraq and about three-quarters of them were willing to be involved in the implementation of the system in Iraq. To improve Iraqi patient’s safety and quality of life, pharmacists and other medical staffs need educational programs and training to improve their knowledge about ADRs monitoring process to encourage them to be involved in this task. These were similar to the results of a study conducted in Nigeria [25], which showed the role of continuous medical education; training programs for medical staffs to report ADR and helped in improving patient’s safety and medical care. Furthermore, the center must take his role to raise the awareness of Iraqi patients to improve patient self-reporting manner to increase the reporting of ADRs. The benefits of this idea have been confirmed in different studies [26,27].

REFERENCES