**Abstracts**

1. **Knowledge of Adverse Drug Reaction Reporting and the Pharmacovigilance of Biological Medicines: A Survey of Healthcare Professionals in Ireland**

J. O’Callaghan1,2,3

• B. T. Griffin1,2

• J. M. Morris1

• Margaret Bermingham2

**Abstract**

**Background** In Europe, changes to pharmacovigilance legislation, which include additional monitoring of medicines, aim to optimise adverse drug reaction (ADR) reporting systems. The legislation also makes provisions related to the traceability of biological medicines. Objective The objective of this study was to assess:

(i) knowledge and general experience of ADR reporting, (ii) knowledge, behaviours, and attitudes related to the pharmacovigilance of biologicals, and (iii) awareness of additional

monitoringamong healthcare professionals (HCPs) in Ireland.

**Methods** Hospital doctors (n = 88), general practitioners (GPs) (n = 197), nurses (n = 104) and pharmacists (n = 309) completed an online questionnaire.

**Results** There were differences in mean knowledge scores relating to ADR reporting and the pharmacovigilance of biologicals among the HCP groups. The majority of HCPs who use biological medicines in their practice generally record biologicals by brand name but practice behaviours relating to batch number recording differed between some professions. HCPs consider batch number recording to be valuable but also regard it as being more difficult than brand name recording. Most respondents were aware of the concept of additional monitoring but awareness rates differed between some groups. Among those who knew about additional monitoring, there was higher awareness of the inverted black triangle symbol among pharmacists ([86.4%) compared with hospital doctors (35.1%), GPs (35.6%), and nurses (14.9%). Hospital pharmacists had more experience and knowledge of ADR reporting than other practising HCPs.

**Conclusion** This study highlights the important role hospital pharmacists play in post-marketing surveillance. There is a need to increase pharmacovigilance awareness of biological medicines and improve systems to supporttheir batch traceability There were differences in experience and knowledge of ADR reporting as well as confidence in the ability to report ADRs among hospital doctors, general practitioners, nurses, and pharmacists Healthcare-professional awareness of additional monitoring was high. However, pharmacists were significantly more aware of the inclusion of the inverted black triangle symbol . on the product information of such medicines than hospital doctors, general practitioners, and nurses Overall, healthcare professionals were more familiar with the term biological medicine than biosimilar medicine. Biological medicines are typically recorded by brand name but batch numbers are recorded to a lesser extent. This may negatively impact the traceability of biologicals to batch level in ADR reporting databases.

1. **The role of hospital and communitypharmacists in pharmacovigilance**

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**Abstract**

In this paper, we give an overview of the role pharmacists actually have and could

have in collecting reports of adverse drug reactions (ADRs) and more widely in

pharmacovigilance. In the literature, several ways are mentioned in which the pharmacist, both the community pharmacist and the hospital pharmacist, can contribute to the safe use of

drugs. In addition to their responsibilities regarding drug dispensing and compliance,

they can have a substantial role in ADR reporting. Especially, hospital pharmacists can play a significant role in ADR reporting because the most serious adverse drug events occur in hospitals, and ADRs account for a substantial proportion of hospital admissions.

Community pharmacists, however, can also play an important role in ADR reporting. This is, for example, the case in the Netherlands where community pharmacists contribute substantially, both in numbers and in quality of ADR reports.

The contribution of the pharmacist to pharmacovigilance should, however, not be limited to ADR reporting. The various pharmaceutical disciplines could also greatly enhance our understanding of the nature of ADRs. If those involved in pharmaceutical disciplines can rise to this challenge, they will significantly help deepen our insights into ADRs.

1. **Adverse drug reactions reporting: Pharmacists’ knowledge, attitude and practice in Shiraz, Iran**

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Received 10 March 2014

Accepted 8 June 2014

**Abstract.**

**BACKGROUND:** While yellow card reporting system has started in 1998 in Iran, the ADR reporting rate is very low.

**OBJECTIVE:** In order to explore whether the Iranian Pharmacovigilance system could be modified, and to determine reasons

for under-reporting, a study to investigate the role of pharmacists in ADR reporting was done in Shiraz.

**METHODS:** A cross-sectional study was conducted between January and June 2013 in Shiraz, Iran. After describing the study and its goal for each participant, oral consent was taken.

**RESULTS:** 100 out of 120 pharmacists (83.3%) agreed to participate in the interview. 79 out of 100 respondents were working in private pharmacies, 7% in governmental pharmacies, and 3% in pharmacies located in hospitals. Although level of knowledge regarding ADR was low among pharmacists, all of them admitted that paying attention to ADRs and timely reporting is very

important. While 6 (6%) pharmacists thought that they had been taught too much about ADR in the university, 30% believed that it was enough, 41 % claimed that it was not satisfactory and23% admitted that it was little.

**CONCLUSIONS:** Our pharmacists have little knowledge about the process, goal, and importance ofADRspontaneous reporting system. Otherwise, education and training courses will be important in maintaining, improving and enhancing ADR reports by pharmacists.

Keywords: Pharmacists, knowledge, attitude, practice adverse drug reaction reporting, Iran

1. **Vijay Venkatraman Janarthanan\*, Ganesan Ramakrishnan, Subashchander Krishnamurthy and Akash Imayam Sahar**

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**ABSTRACT**

Pharmacy as a profession has made significant progress in the recent years. It has seen a paradigm shift from product orientation to patient focus. Pharmacist should realize it’s no more a task carried out behind the curtains. This article introduces aspiring pharmacists to one such profession where they can extend their roles as providers of service which promotes drug safety.

**Key words:** ADR, Drug safety, Pharmacovigilance , Pharmacist, PVPI.

1. **Knowledge, attitude and practice of pharmacovigilance among community pharmacists in Delhi, India**

**Ravinder K. Sah1 ⃰, Rakhamaji D. Chandane1, Krishna1, Sachin Manocha2, Ajita Kapur1**

**ABSTRACT**

**Background:** Lack of knowledge of Pharmacovigilance (PhV) and Adverse Drug Reactions (ADRs) reporting culture among the prescribers have been identified as major factors for under reporting of ADRs. In an attempt to increase the reporting many countries have allowed pharmacists to report ADRs. This study was planned to assess the knowledge, attitude and practices of PhV among community pharmacist in Delhi, India.

**Methods:** Cross sectional, questionnaire based study was conducted to evaluate the knowledge, attitude and practice of PhV among 200 community pharmacists of Delhi (west Delhi) India.

**Results:** Majority (74%) of the respondents felt that ADR reporting is necessary but only 9% were aware of existing PhV Program of India. Only 5% of pharmacists knew about elements of PhV. Forty percent (40%) of pharmacists did not know where to report ADRs and 26% felt that there is no need to report ADRs. Significant number (77%) of pharmacists felt that ADRs reporting will damage their image. 96% never try to find ADRs and in case if they get ADRs from patients, majority (95%) of them never report to anybody. Almost all (96%) of respondents cited busy schedule as the main reason for non-reporting and 86% said that it will be very convenient if ADRs are collected by someone from them.

**Conclusions:** Community pharmacists had positive attitude towards ADRs reporting but their knowledge and practice regarding PhV need to be improved. There is a need of regular training to increase their role in PhV.

**Keywords:** ADR reporting, Community Pharmacist, Pharmacovigilance

1. **The key role of clinical and community health nurses**

**In pharmacovigilance**

Caterina Bigi1,2 & Guido Bocci1

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**Abstract**

**Purpose** The reporting of suspected adverse drug reactions (ADRs) is starting to become routine to nurses. The aim of this review is to underline the role of clinical and community health nurses in pharmacovigilance and to promote their effective participation in ADR reporting in different countries and for patients of different ages.

**Methods** The PubMed, Scopus and ISI Web of Science databases were searched for research articles published between January 1985 and April 2017 using the search items “Pharmacovigilance” AND “nurse;” Badverse drug reaction Report” AND Bnurse;” Bcommunity health nurse” AND Badverse drug reaction.”

**Results** A total of 987 articles were identified using our search strategy, of which 180 articles remained over after the removal of duplicate articles. Of these 180 studies, upon full review we

identified 24 which met the inclusion/exclusion criteria and included these in our review. ADR reports by clinical nurses in some countries are comparable in quality and number to those submitted by physicians or pharmacists. Data on ADRs reported by community nurses are currently not available.

However, numerous publications emphasized the challenges

faced by nurses in reporting ADRs and the need to include

pharmacovigilance training in both clinical and community

health nurse academic education.

**Conclusions** Nurses are central actors in pharmacovigilance activities, particularly in identifying ADRs which remain outside the reach of other healthcare providers and in being fundamental to the preservation of the health of patients and of the entire community, with attention to the more vulnerable patients, such as children and the elderly.

**Keywords** Pharmacovigilance . Adverse drug reaction . Community health nurse . Clinical nurse .National health systems

1. **Medication safety knowledge, attitudes and**

**Practices among community pharmacists in**

**Lebanon**

Aline Hajj, Souheil Hallit, Elsy Ramia, Pascale Salameh & on behalf of

the Order of Pharmacists Scientific Committee – Medication Safety

Subcommittee

**Medication safety knowledge, attitudes and practices among community pharmacists in Lebanon**

**Aline Hajj1, Souheil Hallit1,2,3,4,\*, Elsy Ramia5, Pascale Salameh6 on behalf of the Order of Pharmacists**

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**Acknowledgments:** The authors would like to thank all the inspectors of the OPL for their help in passing the questionnaires and data entry. They would also like to thank the members of the OPL Medication Safety Subcommittee, namely Rony Zeenny, Maryam Ghorayeb, Marwan Akel, Hayat Azouri, Hind Hajj, Nouhad Sarkis, Hadi Sherri and Patricia Shuhaiber

**Abstract**

**Background**: The effectiveness of a national post-marketing surveillance program depends directly on the active participation of all health professionals. There is no current comprehensive and active pharmacovigilance program available in Lebanon.

**Objectives**: To assess the knowledge, attitudes, and practices (KAP) among community pharmacists in Lebanon in relevance to potential pharmacovigilance and adverse-drug-reactions reporting in Lebanon.

**Methods**: A cross-sectional descriptive study, using a self-administered KAP questionnaire and

conducted between March and July 2016, included 1857 pharmacists practicing in community settings. As for the statistical analysis, Chi-2 test for dichotomous or multinomial qualitative variables, Wilcoxon test for quantitative variables with non-homogeneous variances or non-normal distribution.

**Results**: The majority of responders had good knowledge concerning the concept and purpose of pharmacovigilance as well as adverse drug reactions (how to report these/the importance of reporting adverse events/the definition of an adverse event and pharmacovigilance). Concerning community pharmacists’ attitude and practice towards pharmacovigilance, the majority admitted having a positive attitude towards their role in adverse drug reaction reporting and this activity was even seen as one of their core duties. The questionnaire revealed a lack of practice and training regarding pharmacovigilance. Nonetheless, the pharmacists agreed on the Order of Pharmacists in Lebanon and the Ministry of Health’s role in promoting this practice and helping them be more involved in reporting Adverse Drug Reactions (ADRs). The pharmacists thought they are well positioned regarding patientsafety practice in their pharmacies and the results were not statistically different between pharmacy employers and employees.

**Conclusion**: Lebanese pharmacists have the required knowledge and positive attitude to start reporting ADRs, were aware of ADRs occurring with various medicines post-marketing, yet were currently not able to disseminate this information widely or to record it centrally, emphasizing the importance of establishing a national ADR reporting system.

**Key words:** Adverse drug effects, community pharmacists, medication safety, pharmacovigilance.

1. **Community pharmacy and pharmacist staff call center: Assessment of medication safety and effectiveness**

Lisa Higgins, Mary Brown, John E. Murphy, Daniel C. Malone,

Edward P. Armstrong, and Raymond L. Woosley

**Abstract**

***Objective:*** To determine proof of concept for use of a network of pharmacists to evaluate the safety of medications.

***Design:*** Pilot, comparative, prospective evaluation.

***Setting:*** Community pharmacies and a pharmacist-staffed call center in Arizona during January through August 2006.

***Patients:*** Patients filling prescriptions for ipratropium or tiotropium bromide at 1 of 55 Arizona pharmacies were encouraged to call a pharmacist-staffed call center. A total of 67 patients contacted the center and 41 participated.

***Intervention:*** A network of community pharmacies and a call center were used to collect data on patients receiving one of two medications for the treatment of chronic obstructive pulmonary disease. Pharmacists in the community pharmacies recruited patients who presented with a prescription or requested a refill for one of the medications.

The call center was used to collect patient data. Patients provided data on medication use, completed the chronic respiratory questionnaire (CRQ), and were encouraged to call the center to report health problems. After 30 days, patients were called to determine whether they experienced any adverse events while taking their medication and the CRQ was read ministered.

***Main outcome measure:*** Knowledge gained on the feasibility of the model using pharmacists to assess drug safety.

***Results:*** A total of 67 (6.7%) of a possible 995 patients contacted the call center about participating in the study. Approximately one-half (n = 28) of the 55 pharmacies had one or more patients contact the center about the study. A total of 41 patients met inclusion/exclusion criteria and were enrolled. Six (15%) patients reported an adverse effect, including one serious adverse event (acute glaucoma).

***Conclusion:*** This study provides limited evidence that community pharmacies and a pharmacist-staffed call center can be used to assess medication safety; however, a number of issues need to be examined to determine whether the approaches can be sufficiently effective.

***Keywords:*** Pharmacovigilance, safety, adverse drug effects, community pharmacy.

1. **A comparison of pharmacists’ role functions across various nations: The importance of screening**

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Kanamoto, Ph.D., Kenji Sugibayashi, Ph.D.

**Research in Social and Administrative Pharmacy**

**Commentary**

A comparison of pharmacists’ role functions across various nations: The importance of

screening

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**Abstract.** In recent years, several developed countries reported 1 on new multidisciplinary

roles of pharmacists and pharmacy assistants, especially considering the former’s expanding functions. This paper examines differences in pharmacists’ and pharmacy assistants’ professional roles and the dispensing system in Japan with those in the United Kingdom, Malaysia, and the Philippines. A review of relevant literature was supplemented by interviews of dispensary staff at hospitals and community pharmacies in Malaysia and the Philippines. The UK, Philippines, and Malaysia had dispensing assistants who performed dispensing roles, while Japan did not. Although pharmacy assistants occasionally performed screening and dispensing inspections due to the lack of pharmacists, it is necessary for pharmacists participating in risk management to ensure formula optimization and monitoring. Pharmacists’ contribution to medical care involves ensuring safety in drug therapy and overall medical services. Screening is the most fundamental and important function performed exclusively by pharmacists, thereby establishing their status within the medical system.

**Keywords** Pharmacist’s role・Pharmacy assistant・Dispensing system・Pharmacist’s

functions・Competencies・Screening

1. **Patterns of Adverse Drug Reactions in Different Age Groups: Analysis of Spontaneous Reports by Community Pharmacists**

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Seoul, South Korea

**Abstract**

**Purpose**

To evaluate the clinical manifestations and causative drugs associated with adverse drug

reactions (ADRs) spontaneously reported by community pharmacists and to compare the

ADRs by age.

**Methods**

ADRs reported to the Regional Pharmacovigilance Center of the Korean Pharmaceutical

Association by community pharmacists from January 2013 to June 2014 were included.

Causality was assessed using the WHO-Uppsala Monitoring Centre system. The patient

population was classified into three age groups.We analyzed 31,398 (74.9%) ADRs from

9,705 patients, identified as having a causal relationship, from a total pool of 41,930 ADRs

from 9,873 patients. Median patient age was 58.0 years; 66.9% were female.

**Results**

Gastrointestinal system (34.4%), nervous system (14.4%), and psychiatric (12.1%) disorders

were the most frequent symptoms. Prevalent causative drugs were those for acidrelated

disorders (11.4%), anti-inflammatory products (10.5%), analgesics (7.2%), and antibacterials

(7.1%). Comparisons by age revealed diarrhea and antibacterials to be most

commonly associated with ADRs in children (p < 0.001), whereas dizziness was prevalent

in the elderly (p < 0.001). Anaphylactic reaction was the most frequent serious event

(19.7%), mainly associated with cephalosporins and non-steroidal anti-inflammatory drugs.

Among 612 ADRs caused by nonprescription drugs, the leading symptoms and causative

drugs were skin disorders (29.6%) and non-steroidal anti-inflammatory drugs (16.2%),

respectively.

**Conclusions**

According to the community pharmacist reports, the leading clinical manifestations andcausative drugs associated with ADRs in outpatients differed among age groups.

**11)** Predictive Factors of Spontaneous Reporting of Adverse Drug Reactions among Community Pharmacists

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**Abstract**

**Purpose**

To evaluate the association between spontaneous reporting (SR) and the knowledge, attitude,

and needs of community pharmacists (CPs), using a questionnaire following a conceptual

model known as the mixed model of knowledge-attitude-practices and the

satisfaction of needs.

**Methods**

Self-administered questionnaires were used with a nationwide convenience sample of CPs

between September 1, 2014 and November 25, 2014 in Korea. The association between

SR and the predictive factors was evaluated using multivariate logistic regression analysis.

**Results**

In total, 1,001 questionnaires were analyzed. The mean age of the respondents and the number

of years spent in community pharmacy practice were 45.6 years and 15.3 years, respectively.

CPs with experience of SR was 29.4%. Being older than 60 (ORadj, 0.16; 95%CI,

0.06–0.42), having prior experience with adverse drug reactions (ADR) (ORadj, 6.46; 95%CI,

2.46–16.98), having higher specific knowledge of SR (ORadj, 3.58; 95%CI, 1.96–6.56), and

having less concern about the obstacles to SR (ORadj, 0.36; 95%CI, 0.23–0.57) were significant

contributing factors to SR. Themain obstacles to SR included perception of ADRs as

‘not serious ADR’ (77.9%), ‘already well known ADR’ (81.5%), and ‘uncertain about causality’

(73.3%). CPs without reporting experience had greater concerns related to the reporting

method and the liability of the pharmacy than those with reporting experience (p<0.05).

**Conclusions**

Findings from our study showed around one in three CPs had ADR reporting experience in

Korea, while 87.1%had prior experience with ADR cases. The knowledge of SR, prior experience of ADR, and less concern about the obstacles to SR were contributing factors

for reporting levels.

**12) Assessment of Knowledge, Awareness and Practices among Healthcare Professionals about Pharmacovigilance and Adverse Drug Reactions Reporting in Dharmapuri and Krishnagiri Districts of Tamilnadu, India**

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**Abstract**

**Background:** Adverse drug reactions are scantly reported by healthcare professionals worldwide and in particular in developing countries. Therefore the aim of the current study was to assess the knowledge, awareness and practices of health care professionals about pharmacovigilance and adverse drug reaction reporting of Dharmapuri and Krishnagiri districts in Tamil Nadu. **Methods:** A cross-sectional study using a validated questionnaire was designed to address theawareness of ADRs, knowledge of Pharmacovigilance system and practices of Pharmacovigilance system. The questionnaire was distributed to randomly selected healthcare professionals (n= 350) such as doctors, pharmacists, nurses and pharmacists’ technicians of hospitals. Completed questionnaires were collected and data were analyzed. Data were expressed in number as well as percentage. **Results:** Of the 350 questionnaires circulated, a total of 264 healthcare professionals responded. HealthCare professional categories involved in the study were these 86 were doctors, 91 were nurses and 87 were pharmacists. These 86 were doctors, 91 were nurses and 87 were pharmacists. And the overall percent of the respondents who accepted to enroll in the study was about 75.4%. **Conclusion:** In the present study, we observed that healthcare professionals have little knowledge about the concept and the process of Pharmacovigilance and spontaneous ADRs reporting system. However, they had positive approach towards Pharmacovigilance but very little experience with reporting.Our study has demonstrated a lack of knowledge and awareness of Pharmacovigilance and ADRs reporting among healthcare professionals in hospitals and also there is a need of a nearby ADR monitoring centre in Dharmapuri and Krishnagiri area.

**Key words:** Pharmacovigilance, Adverse drug reactions (ADR), Questionnaire, Awareness and practices, Health care professionals

**13)** Effect of Pharmacist Involvement on Patient Reporting of Adverse Drug Reactions: First Italian Study

Roberto Leone • Ugo Moretti • Paola D’Incau •

Anita Conforti • Lara Magro • Riccardo Lora •

Giampaolo Velo

**Abstract**

**Background** Adding patients to the range of potential reporters of adverse drug reactions (ADRs) may increase spontaneous reporting and contribute to the detection of signals, one of the primary aims of spontaneous reporting systems. Community pharmacies could have an important

role in this context as a service for promoting patient reporting of ADRs.

**Objectives** The main objectives of the present study were to assess the potential impact of an intervention to promote patient reporting in community pharmacies in the Veneto

region of Italy, and to compare the characteristics of patients’ and general practitioners’ (GPs) reports of ADRs.

**Methods** The study was conducted in the Veneto region of Italy and involved 211 pharmacists working in 118 community pharmacies. Each pharmacist was asked to select, during the study period, about 250 customers who had received at least one drug, and then to present the

spontaneous reporting form to those who had experienced a suspected ADR. Patients were asked to complete the ADR report form and either give it back to the pharmacist, or send it by fax or mail, or else to fill in the form online.

**Results** In a 4-month period, 52,495 customers were interviewed by the pharmacists and 4,949 of them (9.4 %) referred a suspected ADR. The Pharmacovigilance Centre

of the Veneto region received 2,311 citizen’s ADR reporting forms related to the study (from 46.7 % of all patients interviewed who had experienced suspected ADRs). After quality control 1,794 of these reports were entered into the Italian Pharmacovigilance Database and

were compared with the reports (226) sent by GPs in the Veneto region in the same period. Patients reported a higher percentage of known and non-serious reactions than

did GPs. Drugs widely used in the community setting, and over-the-counter products, were the drugs most frequently reported by patients. In contrast, few reports involving reactions to antineoplastic agents or contrast media—drugs mostly used in a hospital setting—were sent by patients.

**Conclusions** Our study shows that patient reporting has the potential to add value to the pharmacovigilance system. The overall quality of the information provided in patients’

reports was good. The differences between reports by patients and by GPs indicate different points of view that can enrich spontaneous reporting.

16) Knowledge, perceptions, and practice of ecopharmacovigilance among pharmacy professionals in China

Juan Liu & Jun Wang & Xian-min Hu

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**Abstract** Ecopharmacovigilance (EPV) is now a wellaccepted critical component for the control of potential environmental risk posed by pharmaceutical residues.

And improving the knowledge and perceptions about EPV, especially among pharmacy professionals, is the first step towards addressing the environmental impact of pharmaceuticals. This cross-sectional study was conducted to assess the knowledge, perceptions, and practice

on EPV using a validated self-administered questionnaire delivered to a sample of 120 pharmacy professionals in Hubei Province, China. And 107 usable survey instruments were acquired. The mean score for knowledge about EPV was 3.85 out of a total of 10.

The pharmacy professionals’ overall perceptions of EPVand pharmaceutical pollution in environment were positive. But of the 107 respondents, 45 (42%) stated that they had not participated in any EPV measure. In addition, none had received training on EPV, and only

25 (23%) respondents had read the literature on EPV. In response to the question about the major perceived barrier to the effective implementation of EPVin China, 45 (42%) respondents chose the answer Bpoor awareness of EPV. These data suggests most pharmacy professionals

in China had a positive attitude but lack of knowledge and practices towards EPV. Therefore, more should be done to enhance pharmacy professionals’ knowledge on EPV.

**Keywords** Ecopharmacovigilance . Pharmacy professionals . Knowledge . Perception . Environment . Pharmaceuticals

17) Attitudes and opinions of Portuguese community pharmacy

professionals towards patient reporting of adverse drug reactions

and the pharmacovigilance system

Cristiano Matos1,2

• L. Rodrigues1

• J. Joaquim

**Abstract**

**Background:**  An adverse drug reaction (ADR) is a harmful and unintended response to a drug. The Portuguese

National Pharmacovigilance System (NPS) receives reports from healthcare professionals and consumers, then analyzes the reports to help prevent, eliminate or minimize the risks of drugs to consumers. Community pharmacy professionals (CPPs) have privileged access to consumers, and throughout their pharmacotherapeutic follow-up and the professional–consumer relationship, they can perceive possible ADRs and encourage consumers to report. The aim of this survey was to evaluate CPPs as role players in improving consumers’ involvement in pharmacovigilance and to describe their attitudes related to the pharmacovigilance system and consumers’ reporting of ADRs.

**Methods** An observational study was performed in a group of Portuguese CPPs contacted through e-mail with a link to a web-based survey created in the Google Docs\_ platform. Data were collected between April and May 2016 and

analysed using Spearman’s correlation coefficients and statistical analysis with SPSS\_ v.23.0 software.

**Results** Almost all (96.5%) of respondents declared they knew about the NPS, but only 40.7% had reported an ADR. Half (50.0%) of respondents said they usually encourage consumers to report ADRs. However, 1.2% admitted

advising consumers not to report if they solicited help from the CPP. Most CPPs (80.2%) were available to help consumers report ADRs. CPPs are encouraged to report ADRs if they are concerned about the situation caused by the reaction or if the ADR is serious or unexpected. Regarding measures to increase the number of ADRs received by the NPS, 91.9% of respondents advised raising awareness of the NPS and 86.1% advised improving the communication between doctors and patients.

**Conclusion** Despite their knowledge of the pharmacovigilance system, only a small percentage of CPPs had reported ADRs, and approximately half did not usually encourage consumers to report possible ADRs. Reporting of ADRs is fundamental to pharmacovigilance, and consumer reporting is a significant contribution to creating useful information on drug safety. Underreporting remains a concern and, in community pharmacies, CPPs can play a major role in pharmacovigilance by reporting ADRs directly or encouraging consumers to report them.

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**OJPHI**

**Why do we need pharmacists in pharmacovigilance systems?**

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2. University of Illinois at Chicago School of Public Health

|  |
| --- |
| **Abstract**  Pharmacovigilance is the science and activity relating to the collection, detection, assessment, monitoring, and prevention of adverse effects with pharmaceutical products. Pharmacovigilance basically targets safety of medicine. Pharmacists have crucial role in health systems to maintain the rational and safe use of medicine for they are drug experts who are specifically trained in this field. Effective use of pharmacists’ workforce will improve the outcome of the pharmacotherapy as well as decrease global health costs. Given their advanced training, pharmacists can utilize pharmacovigilance systems interfaced with electronic health records to monitor the performance of the drugs they fill and also identify adverse drug reactions earlier than non-pharmacists, thereby reducing high healthcare costs.  **Keywords**: pharmacovigilance; pharmacy; pharmacist; adverse drug reaction reporting; health system; rational use of medicine; pharmacotherapy  Correspondence: Dr. Hale Zerrin Toklu Department of Pharmacology and Therapeutics College of Medicine, University of Florida, Gainesville, 32610 FL, USA +1 352 392-3395 haletoklu@yahoo.com  **DOI:** 10.5210/ojphi.v8i2.6802  **Copyright** ©2016 the author(s)  This is an Open Access article. Authors own copyright of their articles appearing in the Online Journal of Public Health Informatics. Readers may copy articles without permission of the copyright owner(s), as long as the author and OJPHI are acknowledged in the copy and the copy is used for educational, not-for-profit purposes. |

19) **ORIGINAL REPORT**

**The knowledge, perceptions and practice of pharmacovigilance**

**amongst community pharmacists in Lagos state, south west Nigeria**

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**SUMMARY**

Purpose Community Pharmacists both have an important responsibility in monitoring the ongoing safety of medicines and are widely accessible to do it. This study aims to investigate the knowledge, perceptions and practice of Pharmacovigilance amongst community pharmacists in Lagos State, South West Nigeria

**Methods** A cross-sectional observational survey was used in this study. A multistage random sampling technique was employed in the selection of 420 community pharmacies in Lagos.

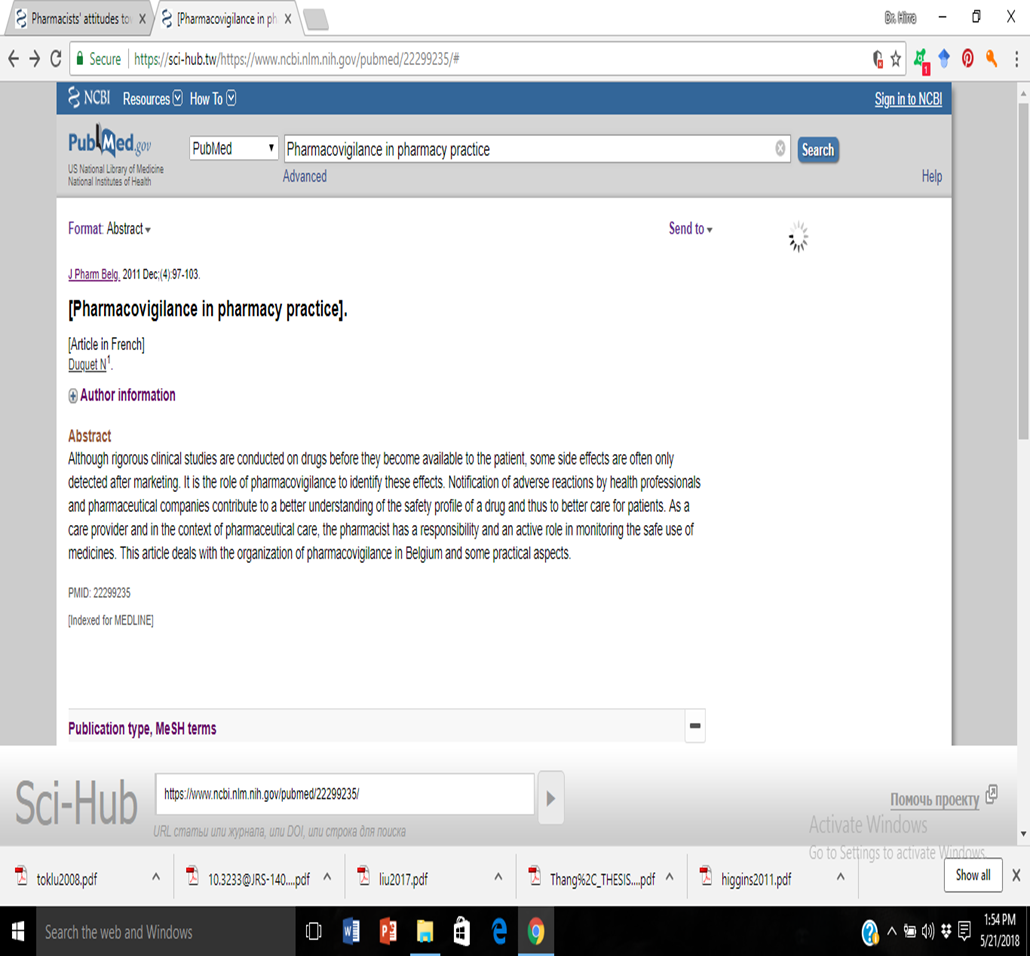
**Results** About 55% of respondents have ever heard of the word ‘Pharmacovigilance’ out of which less than half (representing only 18% of all respondents) could define the term ‘Pharmacovigilance’. Forty percent of the respondents stated that patients reported ADRs to them at least once a month, and 20% reported to the relevant authorities. However only 3% of respondents actually reported an ADR to the National Pharmacovigilance Centre. The most important reason for poor reporting was lack of knowledge about how to report ADRs (44.6%). Meanwhile, 90% of respondents believed that the role of the pharmacists in ADR reporting was important. Most community pharmacists were willing to practice pharmacovigilance if they were trained.

**Conclusion** Community pharmacists in Lagos had poor knowledge about pharmacovigilance. Reporting rate was also poor. There is an urgent need for educational programs to train pharmacists about pharmacovigilance and ADR reporting. Copyright # 2010 John Wiley &

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**key words**—pharmacovigilance; community pharmacists; adverse drug reactions

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**20)** 

**21)** **Roles of Pharmacist in Pharmacovigilance: A Need of the Hour**

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**Abstract**

World Health Organization (WHO) defines Pharmacovigilance as the science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other possible drug related problems. Pharmacovigilance plays an important role in ensuring patients drugs safety. Adverse Drug Reaction (ADR) is defined according to WHO as any response to a drug which is noxious and unintended and occurs at doses normally used in man for prophylaxis, diagnosis or therapy of disease or the modification of physiological function.

Complete information of unintended and severe adverse events could be finding through the Pharmacovigilance. It could not be done through clinical trials which are conducted in *in-vivo* method. Pharmacists are not mere preparing

or dispensing of drugs. The professional practice reaches far beyond serving community. Pharmacists have an important responsibility in monitoring the on-going safety of medicines as part of their professional practice.

Pharmacist role in pharmacovigilance varies from country to country, but the professional responsibility is the same regardless of jurisdiction. Pharmacists can create a trusted environment by counselling patients to reduce medication errors, improve safety and quality of care.

**Keywords:** Pharmacovigilance; Pharmacist; Adverse Drug Reactions (ADR); Prophylaxis

**22)** Effect of an educational intervention on knowledge and attitude regarding pharmacovigilance and consumer pharmacovigilance among community

pharmacists in Lalitpur district, Nepal

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Jha *et al. BMC Res Notes (2017) 10:4*

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**Abstract**

**Background**: Pharmacovigilance activities are in a developing stage in Nepal. ADR reporting is mainly confined to healthcare professionals working in institutions recognized as regional pharmacovigilance centers. Community pharmacists could play an important role in pharmacovigilance. This study was conducted among community pharmacists in Lalitpur district to examine their knowledge and attitude about pharmacovigilance before and after an educational intervention.

**Methods:** Knowledge and attitude was studied before, immediately after and 6 weeks following the intervention among 75 community pharmacists. Responses were analysed using descriptive and inferential statistics. A pretested questionnaire having twelve and nine statements for assessing knowledge and attitude were used. The overall scores were obtained by adding the ‘knowledge’ and ‘attitude’ scores and ‘overall’ scores were summarized using median and interquartile range. Wilcoxon signed-rank test for repeated samples was used to compare the differences between knowledge and attitude of the pharmacists before and after the educational program.

**Results**: Knowledge scores [median (interquartile range)] improved significantly between pre-test [39 (44–46)], post-test [44 (44–44)] and retention period of 6 weeks after the intervention [46 (43–46)]. Knowledge score improved immediately post-intervention among both males [44 (41–47)] and females [44 (43–45)] but the retention scores (after 6 weeks) were higher [46 (42–48)] among males. Attitude scores improved significantly among females [46 (44–48)]. The overall scores were higher among pharmacists from rural areas.

**Conclusion**: Knowledge and attitude scores improved after the educational intervention. Further studies in other regions of the country are required. The national pharmacovigilance center should promote awareness about ADR reporting among community pharmacists.

**Keywords**: Adverse drug reaction, Community pharmacists, Nepal, Pharmacovigilance, Reporting systems

23) ORIGINAL ARTICLE

Pharmacist’s knowledge, practice and attitudes toward pharmacovigilance and adverse drug

reactions reporting process

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Received 25 April 2014; accepted 5 July 2014

**Abstract Background:** Adverse drug reactions (ADRs) are a major cause of drug related morbidity and mortality. Pharmacovigilance is the science that plays an essential role in the reduction of ADRs, thus the evolution and growth of this science are critical for effective and safe clinical practice.

**Objectives:** This study is considered the first study in the region to evaluate pharmacist’s knowledge, practice and attitudes toward ADRs reporting after establishing the national ADRs reporting center in Jordan.

**Method:** A cross sectional study was used to evaluate pharmacist knowledge and attitude toward

ADRs reporting. A structured validated questionnaire was developed for this purpose and a total of 208 pharmacists were recruited to participate in this study.

**Results:** The majority of pharmacists have insufficient awareness and lack of knowledge about

pharmacovigilance andADRs reporting. Also the rate of reporting ofADRs was extremely poor. Several factors were found to discourage pharmacists from reporting ADRs, which include inadequate information available from the patient, unavailability of pharmacist ADRs form when needed, unawareness of the existence of the national ADRs reporting system. Also pharmacists think that ADRs are unimportant or they did not know how to report them.

**Conclusion:** The results of this study suggest that pharmacists have insufficient knowledge about the concept of pharmacovigilance and spontaneous ADRs reporting. On the other hand, pharmacists had positive attitudes toward pharmacovigilance, despite their little experience with ADRs reporting. Educational programs are needed to increase pharmacist’s role in the reporting process, and thus to have a positive impact on the overall patient caring process.

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**KEYWORDS**

Pharmacovigilance; Adverse drug reactions; Jordanian pharmacists; Knowledge; Attitude; Post marketing surveillance

**24)** **Do, Xuan Thang (2013) An investigation of nonprescription**

**medicine supply in community pharmacies**

**in Hanoi, Vietnam.**

PhD thesis, University of Nottingham.

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**Abstract**

Supplying safe, appropriate and effective non-prescription medicines for customers in

community pharmacies is a key role of pharmacists and pharmacy assistants in every country.

However, in low and middle-income countries, including Vietnam, the quality of professional

services from pharmacies is limited, unclear and has often been questioned. There is limited

research about the real situation surrounding non-prescription medicine supply in community

pharmacies in Vietnam. The factors that influence the supply of non-prescription medicines to

customers and to what extent the service provision could be improved for the benefit of

pharmacy customers needs to be explored. This study aimed to investigate non-prescription

medicines supply in community pharmacies in Hanoi, Vietnam in order to provide scientific

evidence about the situation.

A mixed method approach was used in this study to provide valuable insights into what occurs

during pharmacy staff-customer transactions. Following ethical approval, fieldwork observations

were undertaken in five community pharmacies over a five week period from March to May

2011, this was followed by 22 semi-structured interviews with eight pharmacists and 14

pharmacy assistants who had been observed. The interviews enabled participants to express

their perceptions and experiences regarding the supply of non-prescription medicines to

customers in community pharmacies. Survey research, using a structured questionnaire, was

conducted with 505 pharmacy customers who were asked to evaluate the pharmacy service that

they had just received. Results from the three sources were triangulated and validated by comparing, contrasting, complementing and confirming in order to provide a better

understanding of non-prescription medicines supply and make recommendations for improving

the service provision in community pharmacies in Vietnam.

The findings from this study indicate that factors influencing the supply of non-prescription

medicines in community pharmacies include attitudes of pharmacy staff, their medical and

pharmaceutical knowledge and their communication skills. The influence of the pharmacy settings, customer factors such as customers’ complex and diverse demands, the irrational use

of medicines, using medicines following the suggestions of others, and tough customers were all

factors that impacted on staff-customer transactions. Being conveniently located, the pharmacy

offering reasonably priced medicines and being a large pharmacy with a good reputation were

also considered important impacting on customer selection of community pharmacy.

The results of this research show that there are limitations in pharmacy service provision and

there is a discrepancy between pharmacy staff perceptions and actual practice in terms of

attitudes. Poor performance, in many situations, did not come from a lack of knowledge; rather

it appeared to result from the negative attitudes of pharmacy staff. Such negative attitudes of

pharmacy staff are likely to be related to their focus on just short-term profit rather than

focusing on a balance between short-term and long-term benefits for both customers and

pharmacies. Positive attitudes, taking greater responsibility, customer loyalty and long-term

benefits were ignored. Poor performance of pharmacy staff, to some extent, was also affected

by their education and training. Some educational organisations have commercialised their training activities and paid too much attention to the quantity of graduated students rather than

the quality of their education and training.

This study has important implications for the improvement of the responsible supply of nonprescription medicines in community pharmacies in Vietnam including the identified needs for attitude interventions and training. New subjects should be added to the pharmacy students’

curricula and training should be developed for pharmacy assistants in areas such as

communication skills, customer psychology, selling skills and patient safety. For pharmacists and pharmacy assistants, gaining treatment experience from customers’ feedback and keeping up to date with new information should be a continuous activity. Close co-operation between health

authorities, policy makers and researchers needs to be developed in conducting further research and implementing appropriate policies, in order to improve the service provision in community

pharmacies in Vietnam.

**25)** Pharm World Sci (2008) 30:556–562

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**The knowledge and attitude of the Turkish community**

**pharmacists toward pharmacovigilance in the Kadikoy**

**district of Istanbul**

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\_ Springer Science+Business Media B.V. 2008

**Abstract Objective** We investigated the knowledge and attitudes of community pharmacists towards pharmacovigilance and adverse drug reactions (ADRs) in Kadıko¨y

district of Istanbul (Turkey). Setting The community pharmacies in Kadikoy. Kadikoy is one of the biggest districts of Istanbul and has the largest number of pharmacies.

Kadikoy district was divided into two regions, the central and the peripheral.

**Method** Between December 2005 and June 2006 we conducted a survey about the knowledge and attitude of community pharmacists (n = 219) using a face-to-face questionnaire. The questionnaire consisted of questions about the sociodemographic characteristics of the pharmacists, their knowledge of pharmacovigilance and their attitudes towards ADR reporting. Main outcomes measured The knowledge of pharmacovigilance practice, ADR reporting compliance rates, reasons for not reporting ADR and perceptions of the Turkish community pharmacists on pharmacovigilance practice were evaluated. Results Although all 411 pharmacies

in the Kadikoy district were visited, only 53% of the community pharmacists (n = 219) consented to participate in the study. Of those that did respond, only 17.2% of the

pharmacists had any knowledge about ‘pharmacovigilance’. Sixty-five percent of the pharmacists stated that patients reported an ADR to them during the previous 12 months,

and 21% of pharmacists reported to the concerned organizations. Our survey showed that only 7% actually reported an ADR to the national pharmacovigilance center. On the

other hand, 89% of the pharmacists believed that the role of the pharmacist in ADR reporting was essential.

**Conclusion** The results show that Turkish community pharmacists have poor knowledge about pharmacovigilance. There is an urgent need for educational programs to train them about

pharmacovigilance and ADR reporting.

**Keywords** Adverse drug reaction reporting \_ Attitude \_ Community pharmacist \_ Community pharmacy \_ Knowledge \_ Pharmacovigilance \_ Turkey