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Evaluation of Knowledge of Pharmacist and Non Pharmacist Medical Sales Representatives (MSRs) in Pharmaceutical Drug Promotion: A Comparative Study

Syed Imran Ali¹, Atta Abbas*^{1,2}, Sidra Tanwir¹, Arif Sabah¹, Syed Ata Rizvi¹, Shazia Adnan¹, Muhammad Anas Tufail¹, Osama Mustafa Farooq¹, Usman Mumtaz¹, Mustafa Ahmed¹, Fahad Mahboob Sheikh¹ and Zainab Abbasi¹

¹Faculty of Pharmacy, Ziauddin University, Karachi, Sindh, Pakistan.

²Department of Pharmacy Health and Well Being, University of Sunderland, England, United Kingdom.

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ABSTRACT

Aim: The pharmaceutical industries spend a significant amount on the advertisement and promotion of their products, of which the largest division is spent on the visits of sales representatives of these industries to the physicians. The pharmaceutical sales representatives educate the physicians about the advancements in the medical products of their companies and hence are of pivotal importance in the prescribing behavior of physicians. To assess their knowledge with respect to their qualification was the objective of the study.

Methods: A quantitative cross sectional survey was designed targeting the medical sales representatives (MSRs) in Pakistan with a probability sampling technique. It was sent to 716 MSRs all over Pakistan. 691 were returned giving a response rate of 96.5%. Cross tabulation and Chi square test X^2 was used. Statistical significance was accepted at p values <0.05 .

Results: It was found that almost a third of MSRs (30.9%) were pharmacist and the rest (69.1%) were non pharmacists. In regard to their source of knowledge the pharmacist MSR mainly consulted literature (50%) while the non pharmacist relied on marketing promotional materials (55%). Majority (92%) of MSR's were aware of the pharmacokinetics and pharmacodynamics of drugs however the 60% of non pharmacist and 4% of the pharmacist MSR's were unaware of the adverse drug reactions. Regarding the beneficence of adverse drug reactions 91% of pharmacist and 55% of non pharmacist gave negative answer. The ethical way of promotion was considered knowledge by 92% of MSR's, while for black box warnings 90% of pharmacist MSR's were aware while 61% of non pharmacist MSR's were unaware.

Conclusion: It is more beneficial if the MSR has a sound expertise regarding the therapeutics and well as other vital features of the drug. A pharmacist is a better choice for this purpose.

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Corresponding author: Ziauddin
University, Karachi, Sindh, Pakistan
E-mail address:
bg33bd@student.sunderland.ac.uk



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Introduction

In pharmaceutical industry, the post marketing competition is not only shaped by the scientific but also by the advertising rivalries. There is a general disagreement by the economists on the extent and role of drug advertising used by the pharmaceutical industries. For some, marketing activities foster the rapid dissemination of product information about potentially life-saving products, while others emphasize its strategic use by sellers of incumbent brands to jam information channels that could be used by new entrants¹. The medical literature has argued that advertising swamps the effect of professionally sanctioned sources of information² and has deleterious effects on medical practice³. Pharmaceutical firms promote their products heavily, with advertising expenditures typically amounting to between 12% and 15% of sales⁴ among which the most profoundly used is the visits of the sales representatives of the pharmaceutical products to the physicians. The pharmaceutical sales representative educates the health care providers on the advancements of the pharmaceutical industries. A close relationship exists between the pharmaceutical industry and the health care providers, and these sales representatives work to educate these health care providers regarding the latest pharmaceutical products. In Canada, \$1.7 billion was spent in 2004 to market drugs to physicians; in the United States, \$21 billion was spent in 2002⁵. In 2005 money spent on pharmaceutical marketing in the US was estimated at \$29.9 billion with one estimate as high as \$57 billion⁶. In Pakistan the value of pharmaceuticals sold nationwide exceeded US\$1.4 B in 2007 and US\$2.3 B in 2012. The value of medicines sold is expected to exceed US\$3.2 B by 2014⁷.

The sales representatives aim at providing individual consultation and educational sessions to the health care

providers. This form of pharmaceutical advertising is also termed as detailing and consumes the chief fraction of the advertising budget of the pharmaceutical industries. This emphasis is placed because there is also research evidence that one-to-one 'detailing' visits are one of the most effective techniques for changing prescribing behaviors⁸. This is mainly attributed to fact that sales representatives adapt to the method of convection most appropriate to each physician. In 2004, in the US, it was estimated that there were 90,000 sales representatives and that pharmaceutical manufacturers spent more than US\$10 billion on this form of marketing⁹.

The main aim of a pharmaceutical representative is to promote the product of their industry and convince the physicians whose primary aim is to provide efficient and effective health care services to the patients. Hence it should be considered that a sound scientific knowledge would be a pre requisite for the sales representatives; however that is not the general trend observed. Lamberto Andreotti, President of Worldwide Pharmaceuticals for Bristol-Myers Squibb, said, "Obviously, people hired for the work have to be extroverts, a good conversationalist, a pleasant person to talk to; but that has nothing to do with looks, it's the personality"¹⁰. With the influx of pharmacists however in the profession has led to an inclination and awareness of their importance in this field as they have sound therapeutic knowledge regarding the medical product and can provide other vital information.

The purpose of the study was to evaluate knowledge and personal skills between pharmacist and non-pharmacist as a medical representative in pharmaceutical drug sales promotion in order to evaluate the importance of basic therapeutic knowledge in advancement of the profession.



Materials and Methods

A quantitative cross sectional survey was designed targeting the medical sales representatives (MSRs) in Pakistan with a probability sampling technique. The target population consisted of medical sales representatives (MSRs) involved in pharmaceutical drug promotion in Pakistan. The inclusion and exclusion criteria were set as all MSRs who were involved in the pharmaceutical drug promotion were included and those MSRs promoting things other than pharmaceutical drugs as well as non-MSRs were excluded from the study. All incompletely filled questionnaires were also excluded from the study. The survey was carried out in Pakistan for 8 months i.e. March 2013 to October 2013. Before the initiation of the survey, a verbal consent was obtained from the respondents. A study instrument in the form of a questionnaire was designed to evaluate the knowledge of MSRs with regards to pharmaceutical drug promotion attached as appendix 1 at the end. It was sent to 716 MSRs all over Pakistan. 691 were returned giving a response rate of 96.5%, 11 questionnaires were incomplete and hence excluded from the study leaving behind 680 responses to document. Cross tabulation and Chi square test for goodness of fit as well as association was used. The data was analyzed using SPSS v 20 (Statistical Package for social sciences version 20). The demographic data expressed as percentage (%) and (SD) mainly included questions related to their qualification i.e. pharmacist and non pharmacist and relevant work experience in years. These were further identified as independent variables used in statistical evaluation of data. The data related to knowledge is expressed in cross tabulation as percentage (%) and chi square X^2 P values. Statistical significance was accepted at p values <0.05.

Results

A total of 716 questionnaires were sent to MSRs and 691 were returned giving a response rate of 96.5%. Out of the 680 responses documented. We found out that almost a third of MSRs (30.9%) were pharmacist and the rest (69.1%) were non pharmacists. Majority of MSRs (63%) had a relevant work experience of less than 5 years while some (30%) had more than 5 year but less than 10 years. Few (7%) had a relevant work experience of more than 10 years.

A summary of the demographic results is tabulated in table 1

The MSRs were asked about the source of knowledge regarding the pharmaceutical drugs they promote. The pharmacist MSRs for most part consulted literature (50%) and clinical data (39%) along with the marketing promotional materials (8%) while the non pharmacist MSR consulted a variety of sources such as the marketing promotional materials (55%), literature (20%), internet (19%), books (1%), seminars (5%) along with etc.

Furthermore, the questionnaire tested their knowledge about the pharmaceutical drug promotion, when they were asked about the basic pharmacokinetics and dynamics of a drug the majority of MSRs (92%) were well aware of the importance. However, regarding the question of adverse drug reaction and its types, majority (60%) of the non pharmacist MSRs did not know the term. On the contrary, only 4% of pharmacist MSRs did not know the term.

In addition to this the MSRs were further asked if that adverse drug reaction is beneficial to the patient. The pharmacist MSRs (91%) responded negatively while in case of Non pharmacist MSRs a mixed response consisting of (55%) no and (45%) yes was obtained.

The MSRs were asked about the ethical way of drug promotion and majority of MSRs (92%) pharmacist and non

pharmacist included were pointing out knowledge. However, few (8%) pointed out knowledge plus incentives as an ethical way.

Further to this, they were asked about the black box warnings and are they important. The trend was the same as the majority of pharmacist MSRs (90%) knew about the black box warning and their importance whilst the non pharmacist MSRs (61%) did not.

Additionally, when they were asked about the focus of their drug detailing to a physician the pharmacist MSRs focused a variety of drug parameters such as indication, half life, ADRs, interactions, dosing and frequency as well as comparative analysis with market competitor. While the non pharmacist MSRs focused on indication, frequency/dosing, comparative analysis with market competitor as well as incentives.

The demographics of the MSRs particularly the qualification was tested with chi square χ^2 test for association and was found associated with their knowledge of adverse drug reactions and black box warnings (P value < 0.05).

Discussion

Pharmacists are the researchers, developers, producers, people who are trusted to give advice on drugs to all health professionals and consultants and persons who market drugs. A pharmaceutical sales representative is the key and the most important part within the sales of all drugs in different pharmaceutical companies. The sales representatives are responsible to provide and ensure the healthcare profession regarding the efficacy and benefits of the drug along with the safety and the side effects to help out a healthcare profession as the correct information and choices to prescribe right medication to the patients.

The sales representatives provide drug information directly to the consultants and caregivers, explaining the appropriate and

proper use and storage of drug products and providing information on contraindications of drugs. The term used is ethical promotion, which can be described as communication of ethical values to promote their product to the physician.¹¹

Pharmaceutical sales are a high-turnover business sector that rewards forcefulness, determination, and knowledge regarding the business as well as the drugs. We conducted a series of survey to examine the knowledge of the sales representatives who represents different pharmaceutical companies. We found out that (30.9%) medical sales representatives were pharmacist and the rest of (69.1%) were non pharmacists who are involved in promoting the drugs in pharmaceutical companies. Majority of MSRs (63%) had a relevant work experience of less than 5 years in different companies while (30%) medical sales representatives had more than 5 year experience but less than 10 years. The (7%) medical sales representatives had a relevant work experience of more than 10 years.

The pharmacist MSRs for most part consulted literature (50%) and clinical data (39%) along with the marketing promotional materials (8%) while the non pharmacist MSR consulted a variety of sources such as the marketing promotional materials (55%), literature (20%), internet (19%), books (1%), seminars (5%) along with etc. when they were asked about the basic pharmacokinetics and dynamics of a drug the majority of MSRs (92%) were well aware of the importance. However, regarding the question of adverse drug reaction and its types, majority (60%) of the non pharmacist MSRs did not know the term. On the contrary, only 4% of pharmacist MSRs did not know the term. In addition to this the MSRs were further asked if that adverse drug reaction is beneficial to the patient. The pharmacist MSRs (91%) responded negatively while in case of Non pharmacist MSRs a mixed response

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The demographics of the MSRs particularly the qualification was tested with chi square X^2 test for association and was found associated with their knowledge of adverse drug reactions and black box warnings ($P\text{ value} < 0.05$).

On the basis of above mentioned result we can discuss that physicians appeared to believe that most of MSRs are not well trained and skilled with updated knowledge and also mostly MSRs have lack of confidence as well to provide complete knowledge regarding the side effect and contra indications of the drugs. So these problems sometimes pose major ethical problems. The Medical Educators of companies should be aware of these findings, which suggest that physicians become comfortable with the culture of personalized pharmaceutical marketing if the sales representatives were fully trained regarding

drug knowledge. The current study showed that Pakistani pharmaceutical companies were mostly not committed to train their medical sales representatives whether pharmacist or non pharmacist as discovered by the high percentage of respondents trained in professional sales skills and product knowledge.

One of the major issue in our pharmaceutical representatives also claimed, illogically, that they assumed that doctors knew those parts of the information that was not mentioned in the literatures and detailing card so it is the great responsibility and duty of the medical representative to provide complete information, especially if it is about a new product or an existing products information update.

Educational training and drug knowledge is the standard of this profession and learning about a company's product line is the key of success in this field. The medical sales representatives must have to be familiar with data, statistics, and issues in the health society to be able to converse successfully with doctors and industrial people. The Pharmaceutical sales representatives with a science background have an advantage in this profession, in terms of both their credibility and their ability to educate themselves about product knowledge its proper use and to communicate the side effects of the drug products. The professional education and training is the norm for all sales representatives, both on their own products and on other companies' product lines and this training must be conducted by the companies after hiring the sales representatives in their companies to build up the better image of the company as well as the sales representatives. The MSRs ability to read a scientific data and study and examine its assumptions is critical to a MSR's success in this profession. The promotional tools for a pharmaceutical product promotion should not be limited to the benefits of the product,

indications, ease of use and dose, but should cover safety, affordability, economy etc.

Our pharmaceutical sales representatives were much more likely to mention only positive aspects of products such as trade name, indications and dose than negative aspects such as the contraindications, precautions, drug interactions and side-effects which also the most important aspect of health of the patients and whole population just to avoid any unwanted effects.

The EFPIA (European Federation of Pharmaceutical Industries and Associations) has also code of practice on the promotion of medicine, which entails the regulations over many areas of the promotion of medicine. These include events and hospitality that can be extended by a pharmaceutical company. Gifts and inducements must be inexpensive and provide value to the practice of medicine or pharmacy. All medical sales representatives must have the adequate training and sufficient scientific knowledge to provide relevant and precise information about the products. They must also comply with the requirements of the applicable codes.

In 2001, a Henry J. Kaiser Family Foundation random survey of physicians found that many physicians feel their interactions with pharmaceutical manufacturers and their representatives are not inappropriate and actually beneficial. Physicians feel their interactions are educational, keeping themselves informed about new therapeutic agents.¹²

Direct relationships are not the only way in which pharmaceutical marketing influence reaches physicians. The pharmaceutical industry also funds greater than half of the costs for continuing medical education (CME). They are responsible for providing more than 70 percent of the funding for clinical trials.¹³

The results of this survey provide a 'environmental scan' of the aims and extent of proper education and drug knowledge

about drugs is the only solution to promote the drugs within medical and pharmacy society for the benefits of patients.

The profession of medical sales representatives would be benefitted with the inclusion of professionals with scientific background in addition to the other requisites for the field such as pharmacists. The pharmaceutical industry significantly depends on the advertising through the medical sales representatives as this strengthens the link between the industries and the health care providers by giving direct access to the latest developments in the medical products. The MSR would be better equipped to provide information and awareness regarding the medical product by possessing sound knowledge and grasp on the therapeutic and clinical aspects as well as implications of the product and a pharmacist fits this purpose.

Acknowledgement

The authors express gratitude to all the medical sales representatives for participating in the survey and providing their honest response.

Conflict of Interest

The authors declare no conflict of interest exists.

Statement of consent

A verbal consent was obtained from the respondents prior to data collection.

Contribution of Authors

All authors contributed in equally in all aspects of this study.

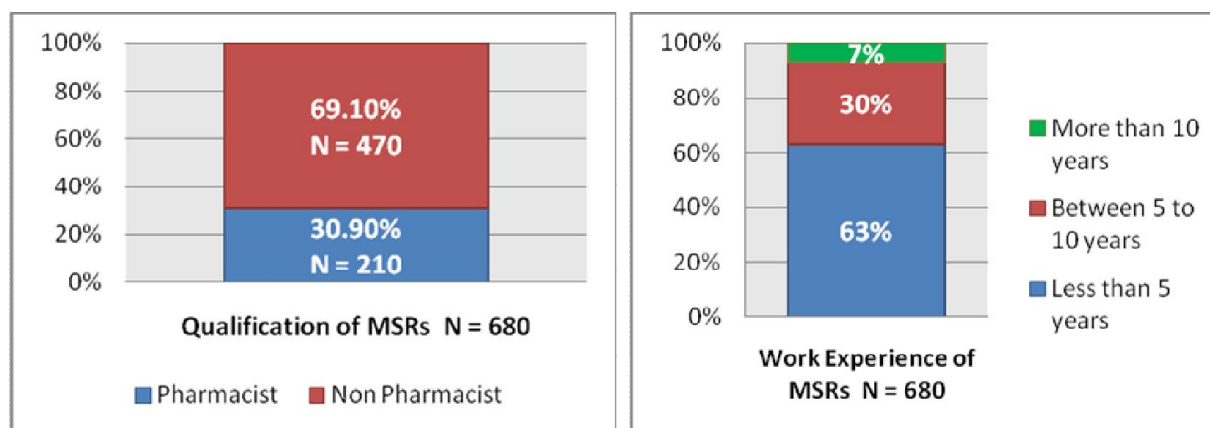
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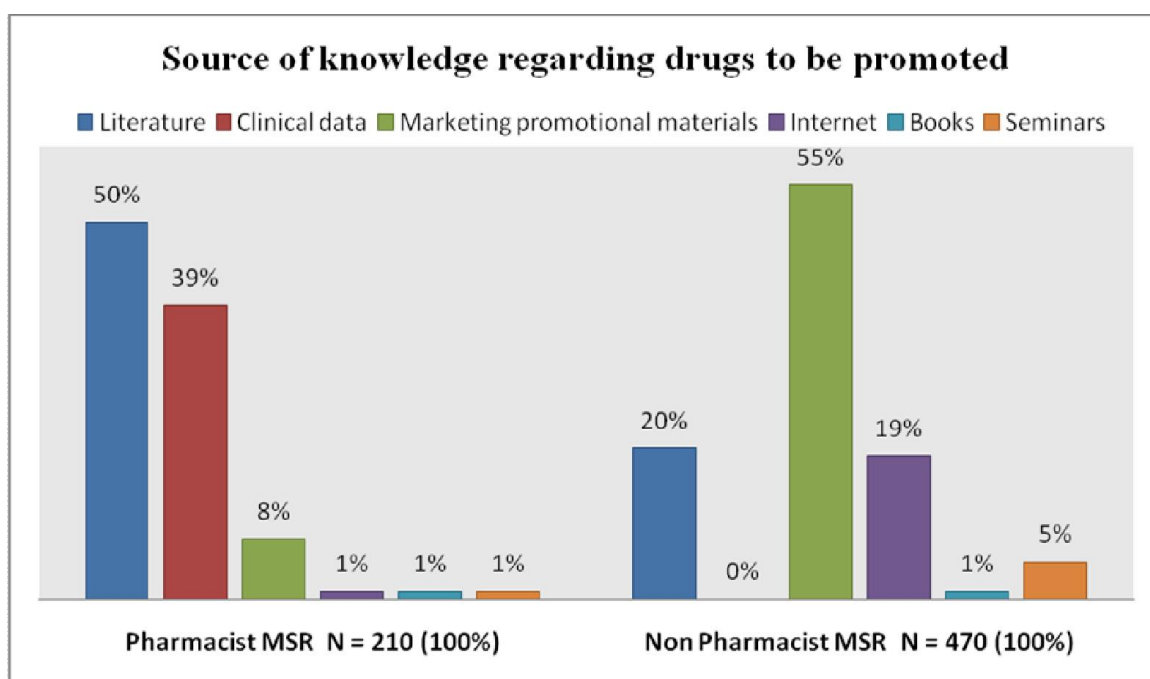
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Table 1. Summary of the demographic results

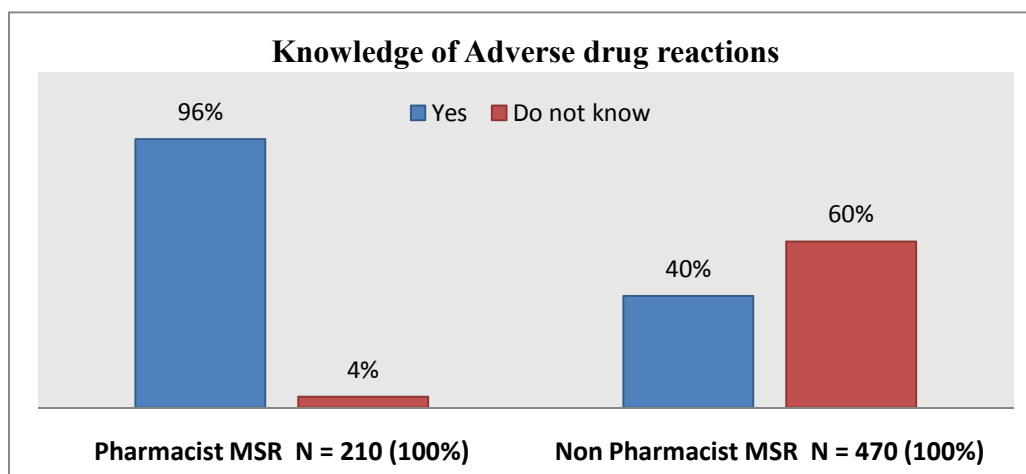
S.No	Attributes	N	%
1	Qualification of MSR		
	Pharmacist	210	30.9%
	Non Pharmacist	470	69.1%
	Total	680	100%
2	Work Experience		
	Less than 5 years	428	63%
	Between 5 to 10 years	204	30%
	More than 10 years	48	7%
	Total	680	100%



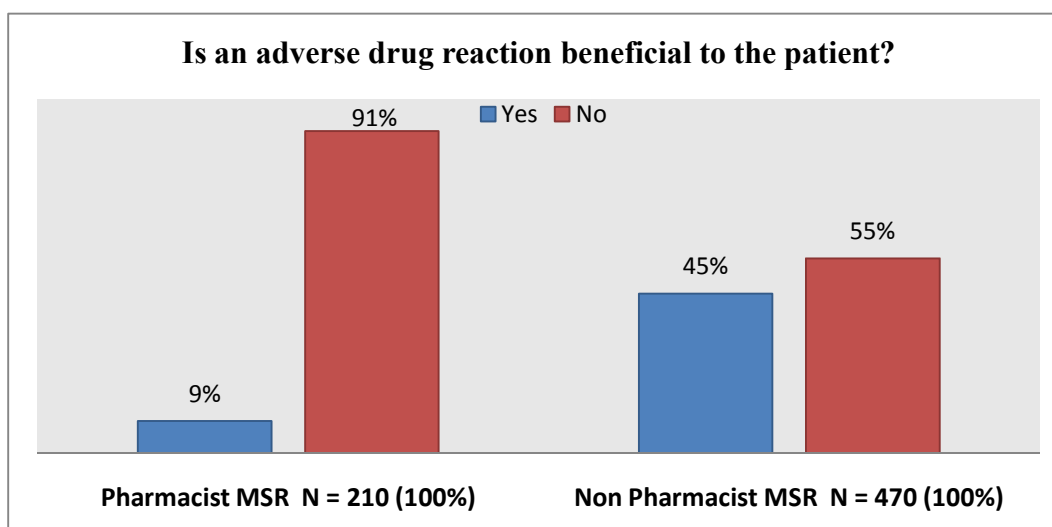
Graph 1. Percentage of MSRs with their qualifications and relevant work experience



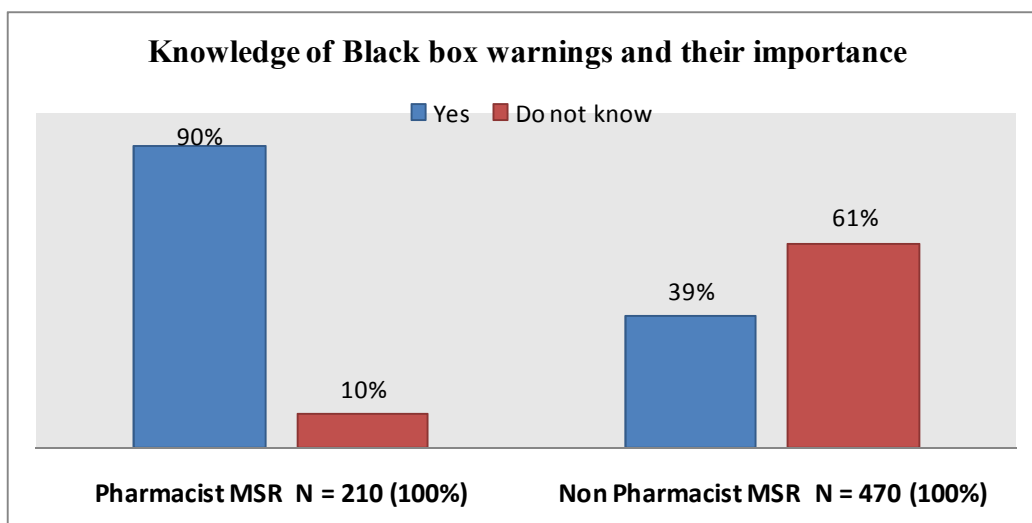
Graph 2. Source of knowledge of MSRs regarding drugs to be promoted



Graph 3. Knowledge of MSRs regarding adverse drug reactions



Graph 4. Response of MSRs regarding adverse drug reaction and their benefit to patient



Graph 5. Knowledge of MSRs regarding adverse drug reactions