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MASTER IN PHARMACY

Diploma thesis:

Patient Perspective of Medication Information Desired.

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Hradec Kralove, 14/5/2015 Panagiotis Kalaitzidis

Abstract

Title: Patient perspective of medication information desired

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Background: Even from the decade of 1970, patients wanted more information about drugs and did not want to be so depended on the information the physician provided them. Today patients are more than ever informed about their disease and the available and appropriate treatment, due to the high volume of information that can be acquired through the Internet. The traditional role of pharmacists was the provision of medicines to the population. However, nowadays, this role has been changed so as to include other tasks, such as management of prescribed medicines, and promotion of health, since pharmacists can serve as a source of expertise knowledge to the customers. Due to the fact that there is no relevant research for the case of Greek patients, this pilot research could help to fill this gap, by trying to find out what kind of information patients want to know about medicines in several pharmacies in Greece.

Aim: The aim of this research is to examine what kind of information patients want related to medicines. More precisely, this research will try to identify the type of information with interest patients, when they are going to take medicines from the pharmacies.

Methods: A quantitative method was chosen. A questionnaire was used in order to capture the opinions of the patients who participated in the research regarding the information they need from pharmacists, how sufficient this information is and whether they search for additional information. The sample of the research consisted of 38 participants from Athens, Greece.

Results: The mean age of all the participants was 60 years old. Half of them were males. Most of the participants in the research (31.6%) had finished secondary education, 26.3% claimed that the highest education that they have achieved is primary education, and 23.7% have not even finished primary education. Half of the participants were retired and 31.6% were employed. The average number of medicines that a respondent could take is 2 medicines per day and the maximum number is 5

medicines per day. Most of the participants in the research answered that they are picking up a prescription for medicines used regularly (78.9%). Also, most of the participants in the research (57.9%) refill their prescription for medicines they used regularly every month and 31.6% refilled their prescription for medicines they used regularly every three months. Moreover, most participants require information about the dosage and the side effects of the medicines, but 84.2% of them do not ask information about what kind of medicine has their doctor prescribed, and 86.8% wanted to obtain information from their pharmacist regarding the dosage of the medicine prescribed. About half of the participants (52.6%) stated that they wanted to know about the side effects of the medicine they take. Almost, all of the participants (92.1%) did not want to obtain information regarding medicine's interaction with other medicines. Furthermore, most of the participants (84.2%) claimed that the information provided to them by the pharmacist concerning their medicines is sufficient for them, and 60.5% of participants seek for additional information with regard to their medicines. About half of the participants (52.2%) stated that they did not know the names of the medicines, but they knew their disease, the package of the medicines and the dosage. People with higher educational level search for additional information significantly more than those who have lower educational level (p-value<0.05). Participants who are retired ask information about the dosage from their pharmacists while dispensing refill medicine significantly more than the other (p-value< 0.05), where those who are retired answered positively

Conclusion: Most of participants wanted their pharmacist to provide them with information about the dosage and the side effects of the medicines while dispensing new medicine and while dispensing refill medicine. On the contrary, they claimed that they do not ask for information regarding what kind of medicine has their doctor prescribed them or whether it is suitable for their disease. Moreover, they did not want information about whether the medicine they take is generic or not, or information regarding medicine's interaction with other medicines. The majority of the participants in the research stated that the information provided by the pharmacist on their medicines was sufficient.

ABSTRAKT

Kontext: Už od roku 1970 požadovali pacienti více informací o léčivech, nechtěli být odkázáni pouze na informace od jejich lékaře. V dnešní době jsou pacienti informováni jako nikdy předtím o jejich nemoci a dostupné léčbě, je to důsledek dostupnosti velkého množství informací především na internetu. Původní rolí lékárníků bylo informovat a poskytovat léky veřejnosti. Aktuálně je však jejich role jiná a zahrnuje i další činnosti jako je například management předpisovaných léčiv, prezentace zdraví a samozřejmě poskytují odborný a profesionální servis svým zákazníkům. Vzhledem k tomu, že v této oblasti neexistuje doposud žádný relevantní výzkum zaměření na skupinu řeckých pacientů, pomůže tento pilotní výzkum vyplnit tuto mezeru zjištěním, jaké konkrétní informace o léčivech chtějí řečtí pacienti znát. Průzkum probíhal v několika řeckých lékárnách.

Metody: Pro tuto práci byla zvolena kvantitativní metoda výzkumu. Pomocí dotazníku byly zachyceny názory zúčastněných pacientů na informace, které obdrželi od lékárníka, ohodnocení jejich užitečnosti a zároveň zda zákazník potřeboval dohledávat některé další informace sám. Průzkumu se zúčastnilo celkem 38 pacientů z Atén.

Výsledek: Průměrný věk účastníků byl 60 let. Polovina z nich byla mužského pohlaví. Většina účastníků (31.6%) dokončila střední vzdělání, 26.3% potvrdilo, že nejvyšším dosaženým vzděláním je základní škola a celých 23,7% nedokončilo ani základní školu. Polovina dotazovaných byla v důchodu a 31,6% bylo nezaměstnaných. Průměrný počet léků, které užívá každý jeden respondent, bylo 2, maximum však bylo 5 medikamentů za den. Většina pacientů potvrdila, že dostávají předpis na léky pravidelně (78,9%). Zároveň také většina dostává takový předpis na měsíční bázi a 31,6% jej dostává každé tři měsíce. Navíc většina těchto pacientů požaduje informace o dávkování a vedlejších efektech, ale celých 84,2% z nich se nedotazuje, jaký druh léku jim byl lékařem předepsán a 86,8% požadovalo po lékárníkovi informaci o správném dávkování. Okolo poloviny účastníků (52,6%) uvedlo, že chtějí vědět i o vedlejších účincích léků, které užívají. Skoro žádného z respondentů (92,1%) nezajímala informace o indikaci s ostatními medikamenty. O něco méně respondentů (84,2%) potvrdilo, že informace poskytnuté lékárníkem shledávají dostatečnými, ale 60,5% si i přesto vyhledává o lécích další informace. Zhruba polovina pacientů (52,2%) uvedla, že neznají název léku, za to jsou plně obeznámeni se svým onemocněním, obalem léku a dávkováním. Účastníci s vyšším dosaženým vzděláním hledali doplňující informace znatelně více než lidé se vzděláním nižším (p-hodnota < 0.05). Respondenti, kteří byli již v důchodu se spíše než ostatní dotazovali svého lékárníka na dávkování a kdy je nutné přijít pro nové léky (p-hodnota < 0.05).

Závěr: Většina účastníku požadovalo, aby je jejich lékárník seznámil s dávkováním, vedlejšími účinky léčiv a kdy si přijít pro nové balení léků. Zároveň potvrdili, že se nezeptali na informaci, jaký lék jim byl jejich lékařem předepsán a zda je pro jejich nemoc vhodný. Navíc nemají zájem o informace ohledně indikace s ostatními léčivy, či

zda je daný lék značkový či nikoli. Velká většina respondentů uvedla, že informace poskytované lékárníkem byly dostačující.

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INTRODUCTION

Even from the decade of 1970, patients wanted more information about drugs and did not want to be so depended on the information the physician provided them. As a result, "the role of the physician as keeper and dispenser of all information came under challenge, and patients became more assertive in their demands for information about drugs from physicians" (Nightingale, 1995, p. 399). Consequently, in 1979 in the U.S.A. FDA issued a proposal, according to which manufacturers or distributors were required to provide information about the drugs (Nightingale, 1995). Today patients are more than ever informed about their disease and the available and appropriate treatment, due to the high volume of information that can be acquired through the Internet (Rodgers, 2009). This has changed the way patients communicate with their physicians and pharmacists (Caiata-Zufferey and Schulz, 2012). More precisely, the fact that patients can retrieve a lot of information from the Internet has lead to a redefinition of patients as healthcare users (Larsson and Wilde-Larrson, 2010).

However, from this situation stem a number of issues. The first is whether patients are enough e-health literate so as to make use of computers and the Internet (Rodgers, 2009; Norman, 2009; Kukafka, 2009). The second is whether patients have the ability to evaluate the information they acquire (Rodgers, 2009; Norman, 2009). Some doctors believe that information acquired through the Internet can generate patient misinformation, leading to distress, or an inclination toward wrong self-diagnosis and/or detrimental self-treatment (Caiata-Zufferey and Schulz, 2012). The third is what kind of information patients seek on the Internet.

According to Brown et al. (1995) in the case of medicines in general, meaning not only applied on the information acquired through the Internet, patients want to know the name of the medicine, the instructions of use, the therapeutic indications, the undesirable side effects, as well as the expiration date of the medicine. Patients need to know about prescribed drugs, so that they can take the medication properly, avoiding any side effects (Nightingale, 1995). The necessity of acquiring information is justified by the fact that nowadays a lot of patients are asked for their informed consent and make decisions about their own health care (Kapp, 2007). One more reason for which

patients' information is necessary is because of the innovative nature of pharmaceutical drugs, the fact rate of this innovation, and its impact on health care expenditure (Serra-Sastre and McGuire, 2013).

The interest in the conduct of this research derives from the fact that the today society is considered to be a society of information, where one can find about almost everything on the Internet. Consequently, as it has already been mentioned, patients seek to find answers to their health-related problems and are much more informed when they visit the pharmacist.

Due to the fact that there is no relevant research for the case of Greek patients, this pilot research could help to fill this gap, by trying to find out what kind of information patients want to know about medicines in several pharmacies in Greece. At the same time, this research will give us the ability to determine the extent to which they are informed about medicines from their pharmacist.

The first chapter gives an overall description about the pharmaceutical sector in Greece and the legislative framework of the pharmaceutical industry in Greece. The second chapter presents the information that patients seek in relation of medicines, based on the available literature and the previous studies that have been conducted for this issue, while at the same time it explores the role of the pharmacist. The third chapter presents the research method followed, the selected research instrument, the sample of the research and the ethical guidelines followed. The fourth chapter presents the findings from the statistical analysis of the questionnaires. Finally, the fifth chapter, which is the discussion, summarises the results of the primary study in accordance to the literature review, and make suggestions for further research, based on the findings and the limitations of the present study.

THEORETICAL PART

CHAPTER 1. THE PHARMACEUTICAL SECTOR IN GREECE

1.1 Introduction

This chapter will discuss in brief the pharmaceutical expenditure in Greece, as well as the legislative framework of this industry in Greece. The reason behind this discussion is that Greece has reported in the last years an increase in its pharmaceutical expenditure, which derives primarily from social, economic and demographic factors. As a result, these factors, as it is going to be indicated in the second chapter through the literature review, are very important in determining the information patients need to know about medicines from their pharmacists. Consequently, it can be supported that the information patients obtain about medicines determine, at least to some extent, the pharmaceutical expenditure. This assumption is justified through the assumption of Serra-Sastre and McGuire (2013) who argue that the information about new drugs influence the pharmaceutical expenditure.

Regarding the legislation of the pharmaceutical sector in Greece, the discussion provides the reader with a little knowledge about this sector in this country, giving emphasis to the changes that affect the information needed by the patients, as for example the shift of prescribed medicines to non – prescribed medicines that allow patients to use drugs without prescription for the case of minor self – treatable conditions. Consequently, the information patient want to obtain for these medicines from their pharmacists may be different, compared to prescribed drugs. Moreover, Milne (2011) argue that pharmaceutical regulators try to balance the benefits and risks of new drugs to patients, which are two of the most common information patients need to know from their pharmacists, as it is going to be indicated in the second chapter. In addition, the legislative framework is one of the factors that influence the access of patients to medicines, meaning both availability and affordability (Niada, 2011).

1.2 Statistical data for the pharmaceutical sector

The increase in the level of living standard, the changes in population size and age composition, the increased life expectancy, the changes in health status of the population, the emergence of new diseases and the increasing incidence of chronic diseases, the improvements in technology that make possible both the identification and the treatment of more diseases are some of the major factors that increase the consumption of pharmaceutical products. Moreover, the increase in real terms of the price per unit of medicinal product from the point the drugs are introduced, as well as the shift in demand for new and expensive drugs has a positive impact on the pharmaceutical expenditure (Athanasakis et al., 2008).

Examining the aggregate national data published by the National Statistical Service of Greece for the period 1995 – 2004, the nominal total public pharmaceutical expenditure increased from 1,210 million Euros in 1995 to 2,916 million Euros in 2004. The corresponding increase in the public pharmaceutical expenditure was from 858 million Euros in 1995 to 2,272 million Euros in 2004, and the private pharmaceutical expenditure was from 352 million Euros in 1995 to 644 million Euros in 2004. In relative terms, the share of pharmaceutical expenditure to total health expenditure increased from 15.7 per cent in 1995 to 17.8 per cent in 2004 (Yfantopoulos, 2007). According to OECD data, pharmaceutical expenditure in the Eurozone in 2007 was 1.6 per cent of GDP and in Greece was 2.4 per cent, indicating a greater increase in pharmaceutical expenditure in our country compared with other Eurozone countries (Geitona et al., 2010). For the year 2008 the total pharmaceutical sales in value terms is estimated at € 8 billion. 72.5 per cent of this amounts on sales from wholesalers and pharmacies (and thus includes parallel exports) and 27.5 per cent sales to hospitals. From the total sales, 87 per cent is for original branded drugs and 13 per cent is for generic drugs (indigenous and imported), while the average annual growth rate for sales for the period 2000-2007 was 16.8 per cent (Geitona et al., 2010).

The increase of pharmaceutical expenditure stems from the ageing, from the large number of legal immigrants, as well as from the advances in pharmaceutical industry and the production of new and more drugs. Overall, the evolution of pharmaceutical

expenditure in Greece is related to a great extent with the increase in drug consumption as a result of social, economic and demographic factors and less to the evolution of prices of pharmaceuticals, which consists an area of strong interference. In any case, the increase in pharmaceutical expenditure should be evaluated in the light of the development in the expenditures for other forms of care, as well and in the connection with the improvement in quality of care (Athanasakis et al., 2008). In Greece, the increase in pharmaceutical expenditure derives also from the following factors: a) the large number of doctors, b) the poor and / or defensive medicine, c) the current incentives for the retail pharmacists, d) the substitution of expensive drugs from cheaper, and finally e) the waste sources and corruption in public hospitals, pharmacies, in insurance funds, citizens and especially in doctors (Geitona et al., 2010).

1.3 The legislative framework of the pharmaceutical industry in Greece

The legislative framework of the pharmaceutical industry in Greece has altered the last decades due to the changes that have been occurred in the removal of the trade barriers, the implementation of the European Union's legislation, as well as the introduction of drugs which are globalised. All these changes resulted in a change in the national protection of the pharmaceutical industry in Greece and the way according to which health service drugs bills are controlled by the European Union and the Greek government (Panigyrakis and Veloutsou, 1999).

Pharmaceutical price regulation in Greece is centralized. The National Drug Organization (EOF) is the main regulatory authority functioning under the auspices of the Ministry of Health and Social Solidarity. The prices for all medicines are determined by the Ministry of Development (Yfantopoulos, 2007).

Apart from the above, according to the legislation in Greece, both the pricing and the distribution strategy are imposed by the government (Panigyrakis and Veloutsou, 1999). This have major implications, such as the limited role of brand managers working in the pharmaceutical industry regarding the analysis of the environment, the distribution channels, the marketing research and the promotion of the pharmaceutical companies' products (Panigyrakis and Veloutsou, 1999). As it has been characteristically stated by Malindretos and Moschuris (2008, p. 56) "the

pharmaceutical sector is an example of accommodation of state intervention in the framework of modern mixed economy".

A structural change in the pharmaceutical sector in Greece is the shift of prescribed medicines to non – prescribed medicines. This shift is expected to increase the access of patients to effective medicines for the case of minor self – treatable conditions. As a result, there will be no need to visit a doctor or other health care professional, reducing the cost of out – of – pocket expenses and the health care expenditure (Martins, 2011, p. 7). The World Health Organization (WHO) argues that "the reclassification of medicinal products from prescription to non – prescription is of great current interest in many countries and it has become widely accepted that self – medication has an important place in the healthcare system" (Martins, 2011, p. 7). According to Martins (2011, p. 8) "self – medication enables comprehensive patient and consumer interventions by using safe and effective medicines, which can help give people a sense of control over their individual health situation. It also drives patients to make lifestyle changes. Responsible self – medication gives people more choice and responsibility, but it is also necessary to ensure that they have the correct necessary information, usually provided through the packs and leaflets on non –prescription medicines [...] self – medication reduces resources on consultations and prescriptions for minor ailments that can be redirected to more pressing areas".

CHAPTER 2. INFORMATION OF PATIENTS ABOUT MEDICINES

2.1 Introduction

This chapter constitutes the literature review of this research. Hence, in this chapter it will be discussed at first the role of pharmacists in providing information to patients regarding medicines, and then the information that patients need to obtain from their pharmacists about medicines.

2.2 The role of pharmacists in providing information to patients regarding medicines

Pharmacists are characterizes as 'guests', meaning that they are representatives of the health care system. As guests, they "seek to build a relationship with the patient and their caregivers that facilitate trust and openness. In addition, they want to help this individual who has opened their lives to them. The guest provides gifts that illustrate their commitment to the relationship such as effective and pertinent information" (Zipperer et al., 2008, p. 2).

The traditional role of pharmacists was the provision of medicines to the population. However, nowadays, this role has been changed so as to include other tasks, such as: a) management of prescribed medicines, b) promotion of health, since pharmacists can serve as a source of expertise knowledge to the customers which can – as it has already been discussed – to substitute, at least to some extent, the advices provided by the general practitioners (Jacobs et al., 2011). The activities of the pharmacists include the following (EU Council Directive 85 / 432, Article 2):

1. the preparation of the pharmaceutical form of medicinal products, as well as the manufacture and testing of medicinal products
2. the storage, the preservation and the distribution of medicinal products at the wholesale stage
3. the preparation, the testing, the storage and the supply of medicinal products in pharmacies which are open to the public
4. the preparation, the testing, the storage and the distribution of medicinal products in the hospitals

5. the provision of both scientific information and advice to the physicians and pharmacists concerning drugs and in general medicinal products

The pharmacist both at the past and today is a social service profession. The modern role of the pharmacist and its more active participation in Health and Pharmaceutical Practice generally occupied WHO in the meetings in New Delhi in 1988 regarding the role of the Pharmacist, in Tokyo in 1993 with regard to the Pharmaceutical Care and in Vankouver in 1997, where the target of seven – star pharmacists was set. This role was adopted later by the FIP. According to this, in order the seven – star pharmacist be able to meet the today demands, he / she should (Demetzos et al., 2008):

1. Provide information and care services in collaboration with other health scientists and pharmacists (Care – giver),
2. Take decisions with regard to the most appropriate and effective use of drugs and after a cost / benefit analysis of treatment has taken place (Decision maker),
3. Communicate. The pharmacist is the link between patient and physician. Therefore they must have knowledge and be trusted when the pharmacist collaborates with other health scientists and the public (Communicator),
4. When the pharmacist found himself within an interdisciplinary health care team, he / she must be able to play a leading role for the benefit of all. The leading competence requires a passion for performing this profession, capacity to take decisions and to communicate and acquisition of administrative skills (Leader),
5. Must have administrative skills. A pharmacist must be able to manage physical, financial and human resources. He / she should also feel comfortable in accepting the management of the other in the case he / she belongs to a health group,
6. The medical science is constantly under dramatic developments, which the pharmacist should be able to monitor, continuing a lifelong learning (Lifelong learner),
7. Finally, the pharmacist should assist in education and training of new pharmacists, as well as in the provision of information to other health scientists; thus he / she must be a teacher (Teacher).

The today role of pharmacists can be summarized in the term ‘pharmaceutical care’. This term was introduced by Al – Shaqha and Zairi (2001a), which “includes the

determination of drug needs for a given individual and provision not only of the drug required but also necessary services (before, during and after treatment) to assure optimal safe and effective therapy". In fact, pharmaceutical care includes the design, implementation, and monitoring of a therapeutic plan, which has specific outcomes for the patient's life and requires the cooperation of the pharmacists with other healthcare professionals. The Institute of Medicine (IOM) has advanced one definition of quality of care as "the degree to which health-care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (Lohr, 1990, cited by Al – Shaqha and Zairi, 2001b, p. 32).

According to this, pharmaceutical care draws the attention of the pharmacists on the identification of drug –related problems, as well as the resolving and the prevention of these problems. These problems include the following (Al – Shaqha and Zairi, 2001a): a) inappropriate prescribing, b) receiving the inappropriate dose of drug, c) receiving a wrong drug, thus not having the desired outcome, d) inappropriate and inadequate monitoring of the patient's treatment by the pharmacist or the physician, e) receiving of a drug which is not medically validated, f) not receiving drugs at all. Thus, the role of pharmacists today is very important, since pharmacies are considered a "part of the culture, society and the way of life and has important implications in public health, employment, manufacturing production and distribution" (Malindretos and Moschuris, 2008, p. 56).

Apart from the above, they can provide information which until now it was offered by the nurses. For example, the role of the staff of the pharmacist department in the Hope Hospital, Salford Royal Hospitals NHS Trust, is to prepare, dispense and supply medicines, to provide counseling to the patients, as well as to work closely with other professionals in the healthcare sector, such as prescribers, so as to be able to offer to each patient the optimal level of healthcare (Stewart, 2003). More precisely, the role of pharmacists in the hospitals includes the following (Al – Shaqha and Zairi, 2001a):

a) Contributing to the choice of drug used, especially when more than one condition is being treated

b) Provide information to the physician with regard to the pharmaceutical and therapeutic aspects of the drug use, as well as to the toxicity profile of the drug

c) Helping the physician and the nurse to decide upon the best dosage and form of a prescribed medicine use

d) Provision of counseling to patients

e) Participation in multidisciplinary teams in order to provide the most effective treatment to patients at risk

f) Provision of information regarding the medicines' cost

g) Monitoring the reaction of patients to drugs' use

Pharmaceutical care can be divided into two categories: the primary and the secondary. The following table summarizes the role of pharmacists in each of these two categories.

Table 1. Role of pharmacists in the primary and secondary pharmaceutical care

Primary pharmaceutical care	**Secondary pharmaceutical care**
Distribution of safe and effective drugs	Managing drug delivery
Provide a data base with information regarding the patient's profile	Usage of approved protocols regarding the recommended drug therapy
Monitoring of the therapeutic outcomes and looking for potential problems	Provision of information to nurses and physicians and answering their drug – related questions
Searching for drug – related problems, such as drug – drug interactions, drug – food interactions and allergies caused by the drug received	Cooperation with the physician with regard to the appropriate drug for a health – related problem for a patient
Recommendation of alternative drugs	
Provision of information regarding drugs to patients, physicians and nurses	
Contribution to the decision – making with regard to the drug dose and drug dosage form	
Conduction of research and trials in order to determine the effectiveness and appropriateness of a drug	
Counseling patients about the right drug use	
Counseling patients about the right storage of drugs	

Source: Al – Shaqha and Zairi, 2001a

From the above analysis, one can conclude that the role of pharmacist is constantly changing, as the environment in which pharmacists operate changes. Concerning this changing in the role of pharmacists, in December 2010 an interesting study was published in the International Pharmacy Journal. In the survey participated 2,023 pharmacists from eight countries: Australia, France, Germany, Italy, Portugal, Turkey, UK and USA. The methodological instrument was interviews through telephone or e – mail, consisting primarily of close – ended questions. The main finding of this study was the fact that pharmacists believe that their profession will focus on the improvement the health of patients through the provided services, but these services are not always compensated sufficiently (Papadakis, 2011).

A set of questions refer to how the pharmacists evaluate their profession and their daily tasks. The outcomes indicate that (Papadakis, 2011):

- more than the half believe that the profession of pharmacist is worse today than it was five years ago
- in general, pharmacists claimed to be very satisfied with their careers and the majority of them plan to stay in this profession for at least the next five years
- on average, they evaluate their satisfaction stemming from their profession with 6.9 out of 10
- pharmacists tend to focus on the patient and they enjoy working under this condition, meaning with this criterion
- the majority answered that the most lovely characteristic of their profession is the provision of services and help to the patients and the communication with the patients
- the majority (47%) answered that the worst characteristic of their profession is bureaucracy and the communication with funds

With regard to their new role in the community, the majority of the pharmacists (73%) mentioned that they already provide programs for the promotion of health, that this helps in the improvement of consumers' health (90%) and that this contributes to the long – term reduction of government expenditures for health care, since they prevent patients from visiting a physician (79%). Almost 90 per cent tend to believe that the provision of these programs for the promotion of people's health should be expanded, so as to cover the need of more people, with the cooperation and the initiative taken by

the state, while almost all of the pharmacist that took part in the research claimed that through the provision of these services, the scientific training of pharmacists is being highlighted. Moreover, 93% of the pharmacists claimed that patients expect from the pharmacists to provide more health – related advices, 75% argue that patients ask them to provide additional services, for which they do not get paid, while only few pharmacists mentioned that there is a serious lack in pharmacists in their country (Papadakis, 2011).

From the above one can observe the important role of pharmacists in the provision of information. However, there are some studies that can reveal the importance of this role. For example, Serra-Sastre and McGuire (2013) examined in their study the role of information in new medicines in a diffusion process. The information sources include any available public information, peer-group effects, personal experience through prescribing, as well as pharmaceutical company's marketing efforts. The information in innovative medicines is very important, primarily because of the process of diffusion. Diffusion of innovations can be defined as the process by which an innovation is communicated through various channels over time among the members of a society (Walker et al., 2011). Diffusion refers to that process where an innovation is communicated through specific channels between the people of a society (Lee et al., 2011). Moreover, Zhu et al. (2006) advocate that the diffusion of innovation theory is the best approach for studying the information systems innovations. Diffusion of innovations theory searches to give an answer to the question how innovations are taken up in the population (Robinson, 2009). Based on this assumption, diffusion of innovations theory offers an insight on the process of social change by answering to the following questions (Robinson, 2009):

1. Which are those qualities that make an innovation to spread very fast and successful? This theory does not focus on persuading people to change; it rather regards change as an evolution, as a reinvention of both products and behaviours, in order to better suit the needs and demands of the individuals. As a result, what changes is not people, but the innovation themselves. The five qualities that determine the success of an innovation are (Lee et al., 2011):
    - the relative advantage: is the degree according to which an innovation is regarded better than the previous products and / or behaviour that replace

- the compatibility with existing values and practices: is the degree according to which the innovation is compatible with the user's values, style of life, needs and experiences
- the simplicity and ease of use: is the level of difficulty that the use has in using the innovation
- the trialability: is the degree according to which the innovation can be tested
- the observable results: is the degree to which the results of the innovation can be seen by other people

2. Which is the importance of peer-peer conversations and peer networks? The importance of conversations lies on the fact that the adoption of both products and behaviours, that lead to change, includes the management of both risk and uncertainty. Within this process, face-to-face conversations enhance word-of-mouth and hence it is easier for the individuals to adopt an innovative product and / or behaviour.
3. Which are the needs of the different user segments? The population breaks down into different segments. Each segment has its own needs and demands and therefore each one should be addressed in different ways.

An important finding of the study conducted by Serra-Sastre and McGuire (2013) was the fact that practices referring to drug dispensing from physicians are common in areas with no near pharmacy, since physicians' income is determined also by the revenues from drugs sold. Thus, we can draw the conclusion that in areas with no pharmacies, where the patients could not obtain information about drugs from the pharmacists and they depend exclusively on the physicians and their economic incentive, the medicine dispensing was a common practice. This finding can justify the important role of pharmacists.

In addition, Vallejo et al. (2012) claim that that the data-mining from healthcare organizations can significantly contribute to the improvement of healthcare. For this reason, hospital units try to integrate data obtained from various sources, including pharmacies. This strengthens even more the role of pharmacies, since it is linked to the improvement of healthcare provision to patients.

Apart from the above, pharmacists can play the role of patient educator, meaning that they can contribute positively towards the adherence of patients. More precisely, Raman-Wilms (2009) argues that many patients do not take the medicines as prescribed, and the non-adherence to therapy remains at high levels. For this reason, the information provided by the pharmacists to patients may be crucial with regard to the adherence of patients to their therapy and the correct use of medicines. Pharmacists can provide both education and counseling to patients concerning their motivation to follow their pharmacotherapeutic regimens. As it is clearly stated "the pharmacy profession has accepted responsibility for providing patient education and counseling in the context of pharmaceutical care to improve patient adherence and reduce medication-related problems" (ASHP Guidelines on Pharmacist-Conducted Patient Education and Counseling, 1997, p. 431).

As described in the first chapter, Greece's pharmaceutical sector is characterised on the one hand by an increase in drug consumption, and on the other from a centralized regulatory framework. However, these two features may have a negative impact on patients. For this reason, Epstein (as cited in Milne, 2011) argues that there should be a free market in information. This market should be characterised by actively participating patient-consumers, who will obtain information from traditional institutionalized forms of advice, such as pharmacies. Taking as example the U.S. market and the case of FDA, the author claims that the strict regulatory framework should be replaced by a free circulation of information about the benefits and risks of medicines, which will be based on equitable distribution of pharmaceutical knowledge in order to empower the liberal consumer and enable effective consumer choice based on fair information. The information that the pharmacists will give to the patients has also the potential to limit the negative effects of pharmaceutical marketing, given the fact that the ways in which information about medicines is presented "either leads to unnecessary consumption of medicines and inflated expectations, or that it is systematically manipulative and distorting" (Milne, 2011, p. 123).

The role of pharmacists can be justified from one more fact: the inability of many people to read the print-based handouts included in the medicines. Vaughn et al. (2011) argue that there are many people who have below basic language functional health literacy skills, which results in their inability to read and understand delayed receipt,

medical-related screenings and in general print-based health-related educational material. Within this framework, it can be argued that the role of pharmacists is very crucial, since they should provide comprehensive and accurate information to patients regarding the medicines.

Despite the important role of pharmacists in the provision of information, in Greece it is observed that pharmacists do not play such major role in providing information to patients, especially due to the lack of forming close relationships with the patients and the lack of constant upgrade of theoretical knowledge. More precisely, a number of reasons can be cited for the weakening of pharmacist's role, such as (Vozikis, 2009): a) the increasing importance attached to the business practice of pharmacy, b) the fact that both the practical and theoretical training of pharmacists is not continuous, especially in non – urban areas, c) the lack of time for himself as a scientist and for the communication with the customer – patient, which clearly concerns other health professionals dealing with services in the sector of health care and finally d) the fact that pharmacies in Greece operate in a highly regulated environment, controlled by the government. Furthermore, the legislative framework in Greece and the bureaucratic form of pharmaceutical industry, as described above, do not allow pharmacists to give additional informational material to the patient for prescribed drugs, because it is regarded as advertisement of these drugs and it is prohibited by the relevant legislation (Newsletter from Ministry of Health, 2012).

One major weakness of the today pharmacies in Greece is the fact that there is a lack in shaping relations of loyalty with the customers, as well as the fact that not so many pharmacies invest in other sectors of non – traditional medicines, such as over – the – counter products (Mousamas, 2011). In addition, the evolution of technology and the immediate access of all consumers to both the information and the knowledge constitute one more reason for the weak role of pharmacists as information providers. Consumers today are up to date, make researches through Internet, learn about the issues and products that interest them, and form a specific point of view, thus requiring specialized information from the pharmacist who should be able to provide it (Mono, 2011).

Based on the above analysis, one can reach to the conclusion that the pharmacist in Greece is experiencing very interesting challenges. The pharmacist in Greece should ensure that the pharmacy will continue to play a key role in providing health care, focusing on a patient – centred perspective. As a result, pharmacies should exploit their competitive advantage over other distribution channels, which stems from the systematic provision of advices and health care services to the customers, through specialized and customised proposals to the customers (Vozikis, 2009). Harami (2010) argues that Greek pharmacists need to acquire greater recognition of their social and scientific role. This will be achieved by following a strategy of development of a new scientific profile of the pharmacist, using policies of communication and promotion. Although there are about 400,000 pharmacists in the European Union and about 4 million of people visit every day the pharmacies, public opinion does not recognize the scientific and social role of pharmacist. This is also justified by the study of the World Association of Pharmacists, according to which the profession of pharmacists is characterised by poor use of the pharmacists' capacities, lack of leadership initiatives and poor recognition of its social role (Harami, 2010).

Within this context, the goal is to further enhance the role of pharmacist. Therefore, there has been a campaign in UK at the end of the year 2010 and at the beginning of the year 2011 with the title 'ask your pharmacist". Under this campaign about 1,000 pharmacies inform consumers orally and with flyers about the role of the pharmacist in the primary health, as well as the services offered at the pharmacy, such as help for quit smoking, suggestions about non – prescribed medicines, for vaccination and others (Pharmacy Management and Communication, 2011). In Greece as well is taking place a similar campaign, where consumers are encouraged via the advertisements in the television, in radio and in press to ask pharmacists as well for their help in various themes, such as in the case of quit smoking, of receiving dietary supplements and other non – prescribed medicines and over – the – counter products.

An interesting aspect of the role of pharmacist today is given through the identification of the patients' expectations. The preferences and the expectations of consumers with regard to the role of pharmacist in information provision, apart from the organisation and image of the pharmacy, are the following (Harokopou, 2010): always available phone line; noble deal over the phone; clear and explanatory answers through the

phone; staff should inspire confidence to the customer through its knowledge; advices should always be personalized; good knowledge of health and beauty topics by the staff; understandable explanations to the customers; possibility of personal conversation with the pharmacist when the client declares a need; the pharmacist should always try to solve the health problems of the client; solving the problems of the patient based on patient's interest and not of the pharmacist. Within this context, Plakoutsi et al. (2011) argues that there are some social criteria according to which consumers make their choice about a pharmacy. These criteria refer to the staff of the pharmacy, the intimacy between the pharmacists and the client, the social and personal relationships, as well as relations of trust and loyalty.

Within this framework, the European Commission published in 2008 a package of measures that aim on the one hand at the strengthening of the pharmaceutical sector in the European Countries and on the other hand at improving the access to modern, innovative, safe and effective medicines. This takes the form of draft legislation and a "political communication" to the members states of the European Union covering: "a) The problem of counterfeit medicines, b) Provision of better information to patients on medicines, c) Improved pharmacovigilance arrangements, d) Increased "transparency" of pricing / reimbursement decisions, e) The encouragement of pharmaceutical research and f) Increased international co-operation" (Fairchild, 2009, p. 21).

Some remarks about the role of pharmacists

The role of pharmacists has changed during the years. To be more precise, their role falls into three stages, as Al – Shaqha and Zairi (2001a) point out. At the first stage during the early 1900s, pharmacists were responsible for the preparation and the distribution of medicines. However, as the medicines became more complex, dangerous and effective, requiring more technical knowledge and higher cost in order to be produced and more ingredients, large pharmaceutical industries responsible to produce them were appeared. This is the second stage, at which pharmacists were able to distribute them and not to produce them, since pharmacists cannot take the responsibility of producing effective and dangerous at the same time medicines. About 35 years ago, pharmacists entered the third stage. At this stage, pharmacists, due to the expansion of the knowledge and the acquisition of more expertise, were able to play a

more clinical role. Consequently, pharmacists are now occupied in hospitals, nursing homes, ambulatory clinics and are owners of pharmacies, playing a more significant role in the pharmaceutical industry and the drug use system. Pharmaceutical care is nowadays not limited only to the provision of drugs, but it is extended to the provision of advices regarding health and lifestyle of consumers, the promotion of patients' health, and the safeguarding of people's well – being by assuring the safety of the medicines they dispense and their effectiveness in the treatment process, along with other healthcare professionals, such as general practitioners.

Today pharmacists have an advanced role not only as owners of pharmacies, but also as clinical pharmacists, establishing relations with other healthcare professionals in order to design, implement, and monitor treatment plans designed to produce specific therapeutic outcomes to patients. As such, pharmacists are responsible for the outcomes of the drug therapy, as well as for the safety of drugs used and effectiveness of the treatment. This is the term; pharmaceutical care', which according to Al – Shaqha and Zairi (2001a, p. 286) "is the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life. These outcomes are: Cure of disease, Elimination or reduction of a patient's symptomatology, Arresting or slowing of a disease process, or Preventing a disease or symptomatology.

2.3 Information patients need to acquire from the pharmacists about medicines

2.3.1 Importance of information to patients

One important piece of information that concerns patients refers to the medicine's safety. Clause 1 of Part VIII of the OECD Guidelines for Multinational Enterprises which applies to the relationship between multinational corporations and consumers, requires that "goods meet all agreed or legally required standards for consumer health and safety, including those pertaining to health warnings and safety information" (Osuji and Umahi, 2012, p. 156). Moreover, third party use of information is one important aspect of ethical concerns in the pharmaceutical industry (Osuji and Umahi, 2012).

Patient safety may be caused due to medication errors through the preparation or administration of drugs, at the point of pharmacy dispensing, or from the use of medicines by patients in the home. The last two sources of medication errors, especially

the last one, can be reduced or eliminated through the correct provision of information to patients. The wrong information may be a threat to patients' safety, as it can lead towards receiving the wrong medicine, the wrong dosage of medicine or not taking medicines according to the prescribed schedule (Hellier et al., 2006; Shah, 2010).

One final reason that is associated with the importance of information to patients about medicines is that this information is related to the patient informed choice, informed consent and patients' autonomy (English, 2005; Kapp, 2007; Penn et al., 2009). As it is supported by Kapp (2007, p. 94) "autonomy is understood as a cluster of notions including self-determination, freedom, independence, liberty of choice and action. In its most general terms, autonomy signifies control of decision-making and other activity by the individual".

Falzon and Mollo (2007) advocate that evidence-based medicine (EBM) rules do not take into account the needs and preferences of patients. For this reason the European Council states that "participation of citizens and patients in the decision-making processes concerning their health must be considered as a fundamental right of any democratic society […] Patients' participation must be considered as a right attributed to patients and not as a favour: a partnership between practitioners and patients is necessary to make sure that the decisions respect the patients' will, needs and preferences and that the patients receive the information and the assistance that they require to take decisions and participate in their own care" (Falzon and Mollo, 2007, p. 445).

2.3.2 Type of information needed by the patients

In general, patients want to know the substances of a medicine, what it is used for, how to take the medicine, what categories of people should avoid take the medicine, what are the side effects, and how to store the medicine. This kind of information is those which is mentioned in a patient medicine leaflet. This patient information leaflet is required to follow the order and include the content specified in article 59(1) of Council Directive 2001/83/EC (Best Practice Guidance on Patient Information Leaflet, 2012). According to this article, the information that should be included in a patient medicine leaflet is depicted in the following table.

Table 2. Information that should be included in a patient information leaflet according to Article 59(1) of Council Directive 2001/83/EC

Identification of the medicine	The name, the active substance(s), the pharmaceutical form, strength of the product should be stated
Therapeutic indications	The conditions for which the medicine is authorised must be listed. This section should include any benefit information considered appropriate
Information necessary before taking the medicine	Situations where the medicine should not be used, any precautions, warnings, interactions with other medicines or foods, information for special groups of patients (pregnant or nursing mothers), and any effects the medicine may have on the patient's ability to drive
Dosage	How to take or use the medicine including both the route and method of administration, how often it should be given, how long the course of treatment will last, what to do if a dose is missed and if relevant what do in the event of an overdose and the risk of withdrawal effects
Description of side effects	All the effects which may occur under normal use of the medicine and what action the patient should take if any of these occur. These should be listed by seriousness and then by frequency
Additional information	This covers information on excipient details, a description of the product, registered pack sizes, storage conditions, name and address of the MAH and manufacturer

According to the National Institute for Health and Clinical Excellence (2009), patients want to know about the benefits and the risks of taking a medicine, how the medicine is considered to improve the health situation of the individual, what should be done if one misses the dose, the effects of the medicine and its impact and symptoms in the everyday life, the time period until having an effect, the side effects of the medicine, as well as any alternative treatments that are available. Despite the fact, however, that the patient information leaflet is one of the most important sources of information of patients regarding medicines, the research of Mira et al. (2013) in Spain has found that this leaflet may show shortcomings with regard to the benefits of the medication, the correct storage of the medicine, the contradictions, the side effects and the precautions to be taken. Moreover, Hamrosi et al. (2013) found in their study that the benefit information included in medicine leaflets had a positive outcome concerning their understanding of treatment and their willingness to take the medicine. Kinnersley et al. (2008) stated that interventions based on written material had a positive effect on patients in terms of questions asked by them regarding their treatment and the medicine that they were going to take.

Dornan and Wynne (1998) support that many patients either feel that they did not need the medication in the dose prescribed, or they have stopped medication because of

negative consequences and side-effects. It is argued that “there is a need for clearly understandable written and oral information about both prescribed drugs and any over-the-counter preparations […] Prescribers should discuss the effects of medication, explaining the regimen and suggesting acceptable variations. It may be helpful to transform this into a user-friendly patient advice list which should include what to do about existing medications, including over-the-counter prescriptions, and what to do if a dose is missed” (Dornan and Wynne, 1998, p. 186). Based on this fact, one can understand that the two first types of information patient need to know about their medication concern on the one hand the correct dose of medicines prescribed and on the other the side-effects of the medication that was given to them. Moreover, Nightingale (1995) mentions that information that patients need to know include information on the products' approved uses, contraindications, proper administration, adverse drug reactions, and cautions for specific population.

In their study, Brown et al. (1995) examined the information on marked drugs for both physicians and patients. The following table summarises the information required on behalf of the patients, with regard to the leaflet that accompanies the medicine.

the name of the product, a complete list of its active ingredients and excipients, the pharmaceutical form and the contents by weight, volume, or number of doses, the "pharmacotherapeutic" group of the product "in terms easily comprehensible for the patient," and the name and address of the license holder
the therapeutic indications
a list of contraindications, precautions for use, interactions with other substances (including alcohol and tobacco), and any special warnings about its use (the list must allow for particular conditions such as pregnancy and lactation and must, if appropriate, mention potential effects on the ability to drive vehicles or operate machinery)
instructions for use, such as dosage, route of administration, frequency of administration and, where appropriate, the duration of treatment and what to do in case of overdosage or of a dose being missed
a description of known undesirable effects that may occur during normal use and what to do if they occur
reference to the expiration date of the product
the date that the leaflet was last revised

Source: Brown et al., 1995, p. 412

With reference to the U.S.A. and the FDA, Nightingale (1995) refers to a patient support program that aims at providing information to patients with regard to general condition or disease management and on specific drug products, especially to those patients that suffer from specific diseases and take specific drugs. However, one major feature of the provision of this information is that it is considered to be an advertisement of prescribed drugs. Hence, the approved information from the FDA does not include claims, suggestions, or representations about the promoted product. Therefore, it can be argued that this type of information is required by the pharmacists.

Airasksinen et al. (1998) examined the impact of the WHO/EuroPharm Forum 'Questions to ask about your medicine' campaign concerning patient counseling in Finnish community pharmacists. The research indicated that: older patients and long-term users of medicines were more aware of the campaign, the campaign was best known at small communities, there was an increase in the percentage of customers receiving at least some verbal counseling, Information was given mainly on the pharmacist's initiative, whereas the majority of the patients wanted to know how and when to use the drug. However, the campaign did not succeed in increasing the number of patients seeking information from their pharmacist, and did not cause any change in the pharmacists' spontaneous provision of oral or written information and the provision of detailed information.

According to the World Health Organization (WHO), adequate information on the use of medicinal drugs should be made available to patients. In the section entitled 'Information for Patients: Package Inserts, Leaflets and Booklets' it is stated that "such information should be provided by physicians or pharmacists wherever possible. When package inserts or leaflets are required by governments, manufacturers or distributors should ensure that they reflect only the information that has been approved by the country's drug regulatory authority. The wording on the package insert or leaflets, if prepared specifically for patients, should be in lay language on condition that the medical and scientific content is properly reflected" (Nightingale, 1995, p. 405).

With regard to the European level, the EU pharmaceutical legislation is in line with the Directive 2001/83/EC and Regulation (EC) No 726/2004. Both the Directive and the Regulation aim to "provide for a clear framework for provision of information by

marketing authorisation holders about their prescription-only medicines to the general public with a view to enhancing the rational use of these medicines, while ensuring that the legislative framework continues to prohibit direct-to-consumer advertising of prescription-only medicines" (Amending Directive 2001/83/EC, as regards information to the general public on medicinal products subject to medical prescription and as regards pharmacovigilance, 2011, p. 2).

More precisely, Article 100b, Paragraph 1, of the amending Directive 2001/83/EC as regards information to the general public on medicinal products subject to medical prescription (COM(2012) 48 final) states that information on authorised medicinal products subject to medical prescription that should be made available to patients by the marketing authorisation holder includes: a) "the most recent summary of the product characteristics as approved by the competent authorities", b) "the most recent labelling and package leaflet as approved by the competent authorities" and finally c) "the most recent publicly accessible version of the assessment report as drawn up by the competent authorities".

Moreover, any information on authorised medicinal products subject to medical prescription shall include the following, according to Article 100d, Paragraph 2 of the amending Directive 2001/83/EC as regards information to the general public on medicinal products subject to medical prescription (COM(2012) 48 final): a) "a statement that the medicinal product concerned is available on prescription only and that instructions for use appear on the package leaflet or on the outer packaging, as the case may be", b) "a statement indicating that the information is intended to support, not to replace, the relationship between patient and health professionals and that a health professional should be contacted if the patient requires clarification on the information provided or further information:, c) "a statement indicating that the information is made available by or on behalf of or following instructions of a named marketing authorisation holder", d) "a postal address or e-mail address allowing members of the general public to send comments to, or requests for further information from, the marketing authorisation holder", e) "a postal address or e-mail address allowing members of the general public to contact the competent authorities which have authorised the medicinal product", f) "the text of the most recent package leaflet or an indication as to where that text may be found".

Additionally, the European Memo (2008) about the information to patients on prescription-only medicines states clearly that the information allowed is the following:

- "summaries of products characteristics, labelling and package leaflets, as approved by the competent authorities
- information which does not go beyond the elements of the summary of product characteristics, labelling and patient information leaflet of the medicinal product, but presents them in a different way
- information on the environmental impact of the medicine, prices and factual, informative announcements and reference material relating, for example, to pack changes or adverse-reaction warnings
- medicinal product-related information about non-interventional scientific studies, or accompanying measures to prevention and medical treatment or information which presents the medicinal product in the context of the condition to be prevented or treated shall be allowed"

According to European Commission's proposals regarding information about prescription-only medicines, it is mentioned that only certain information on prescription-only medicines would be allowed, such as information on the label and on the packaging leaflets; information on prices; on clinical trials; or on instructions for use, and that this information would be allowed through limited channels of communication (European Commission Press Release, 2011).

In addition, it should be mentioned that there are some factors that influence the information required and perceived by the patients. For example, Dornan and Wynne (1998) claim that elderly people perceive in different way the information given to them compared to younger people, while at the same time they are more likely to accept this information than people of younger age. Moreover, Dornan and Wynne (1998) point out that many patients do not have the ability to understand the information provided, because of lack of either health literacy skills or scientific understanding.

Finally, it should be mentioned that the form and style of the medicine information provided to patients play a crucial role in their information. To be more precise, the earlier study of Mazis (1978) showed that a material in long form may include much

more information about a medicine, but at the same time it may confuse patients who are not able to distinguish the important information about the medicine. Moreover, it was found that women are prone to written material compared to men, whereas younger and more educated women reported the tendency to want even more information about a medicine. Maat and Lentz (2009) found in their study that some leaflets are not so well organized and thus they reduce patients' usability; hence the leaflets should be further improved in order to comply with the European regulations, as stated above.

The activities that can be taken, so as to meet patient information needs about medicines are depicted in the following table.

Table 3. Practices for meeting patient information needs about medicines

Providing medication information to patients and families, health care professionals, and other personnel
Establishing and maintaining a formulary based on scientific evidence of efficacy and safety, cost, and patient factors
Establishing and maintaining a formulary based on scientific evidence of efficacy and safety, cost, and patient factors
Developing methods of changing patient and provider behaviors to support optimal medication use
Publishing newsletters to educate patients, families, and health care professionals on medication use
Educating providers about medication-related policies and procedures
Coordinating programs to support population-based medication practices (e.g., development of medication-use evaluation criteria and pharmacotherapeutic guidelines)
Coordinating investigational drug services
Providing continuing-education services to the health care professional staff
Educating pharmacy students and residents
Applying health economic and outcome analysis
Developing and maintaining an active research program

Source: Medication Therapy and Patient Care: Specific Practice Areas–Guidelines, p. 347

2.4 Aim of the study and research questions

The aim of this research is to examine what kind of information patients want related to medicines. More precisely, this research will try to identify the type of information with

interest patients, when they are going to take medicines from the pharmacies. The research questions of this study are the following:

1. What information patients would like their pharmacist to provide them while dispensing new medicine?
2. What information patients would like their pharmacist to provide them while dispensing refill medicine?
3. Do the patients consider information provided by the pharmacist on their medicines to be sufficient for them or they search additional information?
4. Do patients know the medicines they take?
5. Do patients know the reason(s) they take the medicines?
6. Do patients know the adverse effects of the medicines they take?
7. Do patients know what to do in case of adverse effects?

PRACTICAL PART

CHAPTER 3. METHODOLOGY OF THE RESEARCH

3.1 Method and research instrument

For the purposes of this research, the quantitative method was chosen. This method was chosen since it provides the results in numeric form, it is the most widespread method for exploring respondents' opinions about a subject, while at the same time it allows the variables to be correlated (Frances and Paap, 2004).

The questionnaire was used in order to capture the opinions of the patients who participated in the research regarding the information they need from pharmacists, how sufficient this information is and whether they search for additional information. The questionnaire is structured, which means that all the participants answer the same questions in the same order, which ensures a better analysis on behalf of the researcher (Gray et al., 2007). Moreover, the questionnaire includes both open-ended and close-ended questions. Close-ended questions can better codified and analysed, whereas open-ended questions were used to capture the opinions of the respondents, since they had the opportunity to freely express what they think (Cohen et al., 2008).

At the beginning of the questionnaire there are five questions regarding the demographic profile of the respondents (gender, age, occupation, educational level, mother tongue). Then, there are questions regarding the number of medicines the patients take every day, for how long they take the medicines, whether they pick up prescriptions for themselves and / or for relatives and friends, and how often they refill their prescription. Then, there are questions regarding the information provided by the pharmacist (what kind of information they require, how sufficient this information is, whether they search additional information, and why people do not ask for information from their pharmacist). Finally, in the original version of the questionnaire was the following question: "Name one of the medicines you are regularly taking and write all you know about using the medicine – just list of items. It means how to use it, which medicines you should not use concurrently, which adverse effects you may expect,

what to do in case of adverse effects (without consulting pharmacist or patient information leaflet)".

3.2 The sample of the research

The sample of the research consisted of 38 participants from Greece. More precisely, the study conducted in 2 pharmacies in the center of Veroia, during the time period 01.04.2014-20.05.2014. The clients of the pharmacies were asked for filing the questionnaire.

Most of clients did not want to participate in the research, because either they were in a hurry or they did not know the Greek language. People who are in the center of Veroia are usually there for professional reasons and they have limited time, so they cannot spend time for other reasons except their business. They usually come from their work environment by a short permission of their supervisor and they are in a hurry. Also, the parking is not allowed in the center of Veroia and clients park their car illegally on the road and they are afraid to have a penalty from the police. These are the reasons why the sample of the study was small.

3.3 Ethics in research

The researcher has obtained the informal consent of all the participants before proceed to the research. For this reason, the questionnaire was accompanied from a cover letter, where it was stated the name of the researcher, his contact information, the aim of the research, the university under which this research is conducted, the anonymity of the participants and the confidentiality of the data.

Apart from the above, the participants were informed that they had the right to withdraw from the research at any time they wanted without any consequences, that their opinions would not be misinterpreted and would be stated without any biases on behalf of the researcher.

3.4 Procedure

The questionnaires were numbered, the questions were coded and the answers were inserted to the database. For the statistical analysis descriptive statistics (frequency graphs, mean, and standard deviation) were used, as well as chi-square test for the exploration of the correlations between the demographic characteristics and the opinions expressed by the patients who participated in the research (Bluman, 2012). The open-ended questions were written as they were expressed from the participants. For the statistical analysis it was used the Statistical Package for Social Sciences (SPSS) version 21.0

CHAPTER 4. RESULTS OF THE ANALYSIS

Demographic profile of the respondents

The sample consisted of 38 clients of pharmacies. The researcher addressed to initially 50 clients of these pharmacies. However, 12 clients denied taking part in the research due to two reasons: a) lack of available time (9 clients) and b) fear of exposing their opinion (3 clients). The demographic profile of the 38 clients that finally took part in the research is described in this section.

Age

As one can see from the following table, the youngest participant in the research was 18 years old and the oldest participant was 92 years old. This means that the mean age of all the participants in the research was 60 years old (M=59.97, S.D.=17.918).

Table 4. Age of the participants

	N	Minimum	Maximum	Mean	Std. Deviation
Age	38	18	92	59.97	17.918

Gender

As one can see from Figure 1 (Appendix II), 50% (N=19) of the participants in the research were males and 50% (N=19) were females.

The highest education achieved

Most of the participants in the research (31.6, N=12) had finished secondary education. Moreover, 26.3% (N=10) claimed that the highest education that they have achieved is primary education. There was a percentage of 23.7% (N=9), who claimed that they have not even finished primary education. Less participants had a university degree (15.8%, N=6) and one person (2.6%) had a master degree (Figure 2, Appendix II).

Working status

Regarding the working status of the participants in the research, half of them were retired (50%, N=19). There was a percentage of 31.6% (N=12) who were employed,

15.8% (N=6) who were unemployed and there was also one person (2.6%) who was student (Figure 3, Appendix II).

Greek as mother tongue

All the participants in the research (100%, N=38) stated that they have Greek language as their mother tongue.

Information about the medicines received

How many medicines do you take regularly a day?

As we can see from the following table, the maximum number of medicines that a respondent could take is 5 medicines per day. On average, the participants in the research usually took on average about two medicines per day (M=1.89, S.D.=1.158).

Table 5. Number of medicines the respondents take regularly per day

	N	Minimum	Maximum	Mean	Std. Deviation
Number of medicines	38	0	5	1.89	1.158

How long have you been regularly taking medicines?

With regard to the time period the patients took their medicines regularly, the maximum time period is 24 years. On average, the participants in the research took their medicines for about 3.5 years (M=3.39, S.D.=4.136).

Table 6. Time period that the respondents take regularly their medicines

	N	Minimum	Maximum	Mean	Std. Deviation
How long do participants take medicines regularly	38	0	24	3.39	4.136

Are you picking up a prescription for yourself and/or your friends / relatives as well?

Most of the participants in the research (47.4%, N=18) claimed that they are picking up a prescription both for themselves and for their friends / relatives as well. However, the percentage of those who claimed that they are picking up a prescriptions for themselves only is not small (44.7, N=7). Finally, three persons (7.9%), stated that they are not picking up a prescriptions for themselves (Figure 4, Appendix II).

I am picking up a prescription for medicine/s

Most of the participants in the research answered that they are picking up a prescription for medicines used regularly (78.9%, N=30). Two persons (5.3%) answered that they are taking regularly their medicines prescribed, as well as some new medicines that they have been recently prescribed. Finally, there are six persons (15.8%) who stated that they are not taking regularly a medicine, but they take a medicine at the time of the research for an acute condition (Figure 5, Appendix II).

How often do you refill your prescription for medicines you use regularly?

Most of the participants in the research (57.9%, N=22) refill their prescription for medicines they used regularly every month. There was also a percentage of 31.6% (N=12) who refilled their prescription for medicines they used regularly every three months. Finally, four persons (10.5%) answered that they do not refill their prescription, because they do not use it regularly, but only due to an acute condition (Figure 6, Appendix II).

Information required by the patients

What information you would like your pharmacist to provide you while dispensing new medicine?

Based on the answers of the participants, most of them require information about the dosage and the side effects of the medicines. More precisely, the participants in the research answered that:

- Kind of medicine

The majority of the participants (84.2%, N=32) claimed that they do not ask information about what kind of medicine has their doctor prescribed. On the contrary,

only 15.8% (N=6) want to know what kind of medicine has their doctor prescribed them and if it is suitable for their disease (Figure 7, Appendix II).

- Dosage

The majority of the participants in the research (86.8%, N=33) wanted to obtain information from their pharmacist regarding the dosage of the medicine prescribed (Figure 8, Appendix II).

- Generic or not

Most of the participants (97.4%, N=37) answered that they do not want to obtain information about whether the medicine their doctor has prescribed them is generic or not (Figure 9, Appendix II).

- Side effects

Most of the participants in the research (52.6%, N=20) stated that they wanted to know about the side effects of the medicine they take. On the contrary, 47.4% (N=18) claimed that they do not ask for information about the medicine's side effects from their pharmacist (Figure 10, Appendix II).

- Interaction with other medicines

The majority of the participants in the research (92.1%, N=32) answered that they did not want to obtain information regarding medicine's interaction with other medicines (Figure 11, Appendix II).

What information you would like your pharmacist to provide you while dispensing refill medicine?

Based on the answers of the participants, most of them require information about the dosage and the side effects of the medicines. More precisely:

- Kind of medicine

Almost all the participants in the research (97.4%, N=37) claimed that they do not want to obtain information about the kind of medicine their doctor have prescribed them while dispensing refill medicine (Figure 12, Appendix II).

- Dosage

Most of the participants in the research (84.2%, N=32) claimed that they want to obtain information about the dosage of their medicine while dispensing refill medicine (Figure 13, Appendix II).

- Generic or not

The majority of the participants in the research (94.7%, N=36) did not want their pharmacist to provide them with information about whether the medicine they take is generic or not while dispensing refill medicine (Figure 14, Appendix II).

- Side effects

Most of the participants in the research (68%) did not want to obtain information about the side effects of their medicine while dispensing refill medicine (Figure 15, Appendix II).

Do you consider information provided by the pharmacist on your medicines to be sufficient for you?

Most of the participants (84.2%, N=32) claimed that the information provided to them by the pharmacist concerning their medicines is sufficient for them. There was also a percentage of 13.2% (N=5) who claimed that the information provided to them by the pharmacist is very much sufficient, and a percentage of 2.6% (N=1) who claimed that the information provided is much sufficient (Figure 16, Appendix II).

Do you search additional information on your medicines?

Apart from the information provided by the pharmacist, 60.5% (N=23) of the participants in the research stated that they search additional information with regard to their medicines. However, a percentage of 39.5% (N=15) claimed that they do not search additional information (Figure 17, Appendix II).

People have sometimes questions regarding medicines they are using. Some people do not ask a pharmacist to answer their questions. Do you have any suggestion or explanation why people do not ask their pharmacist for their medicines information needs?

- Patients are not aware about the knowledge and scientific training of pharmacists
- Patients think that doctors have much more and better knowledge about medicines. On the contrary, they do not believe that pharmacists are qualified to provide patients with information about the medicines.
- Patients have obtained the information they want from their doctors

"Name one of the medicines you are regularly taking and write all you know about using the medicine – just list of items. It means how to use it, which medicines you should not use concurrently, which adverse effects you may expect, what to do in case of adverse effects (without consulting pharmacist or patient information leaflet)".

Some of the medicines the patients took are: (INN not product names took – change/put word like they stated

- Xozal
- Mag 2
- Norvasc
- Siutrom
- Fisideus
- Uresom
- Melocin
- Crestor
- Sevikow
- Accupron
- Lepur 40
- Zofepril
- Salospir
- Triatec
- Lautus solostar
- Minitran
- Triatec plus
- Arimidex

Effect of demographic profile of the respondents on their opinions

For the examination of the correlation between the variables examined (namely education, work, gender and patients' opinions), chi-square test has been used. The level of statistical significance is α=5%. In the case p-value > 0.05, there is not a statistically significant correlation between the variables examined. The statistical analysis indicated that:

- There is a statistically significant relation between the highest educational level achieved and whether patients search for additional information (p-value=0.021 < 0.05), where people with higher educational level claimed that they search for additional information, compared to those who have lower educational level
- There is a statistically significant relation between the work of the participants and whether they ask information about the dosage from their pharmacists while dispensing refill medicine (p-value=0.020 < 0.05), where those who are retired answered positively

CHAPTER 5. DISCUSSION

5.1 Results of the primary research

First and second research question: What information patients would like their pharmacist to provide them while dispensing new medicine and while dispensing refill medicine?

Based on the answers of the participants, most of them wanted their pharmacist to provide them with information about the dosage and the side effects of the medicines while dispensing new medicine and while dispensing refill medicine. On the contrary,

they claimed that they do not ask for information regarding what kind of medicine has their doctor prescribed them or whether it is suitable for their disease. Moreover, they did not want information about whether the medicine they take is generic or not, or information regarding medicine's interaction with other medicines.

This result, namely the fact that most of the patients asked information about the dosage and the side effects of the medicines, coincide with previous researches, who claimed that patients wanted to obtain information mostly about how often they should take the medicine and whether the medicines have side effects, since they are the most valuable information patient need (Nightingale, 1995; Brown et al., 1995; Dornan and Wynne, 1998; National Institute for Health and Clinical Excellence, 2009; European Commission Press Release, 2011; Mira et al., 2013).

The fact that patients did not want to obtain information about whether the medicine is suitable for them or not, about whether the medicine they took is generic or not, and about the interaction of the medicine with other medicines – even from those who take more than one medicines – may be explained from the fact that they have been provided with these information from their doctor, before they visit their pharmacist. Besides, one interesting outcome of this study is that on the one hand many patients think that the pharmacist do not have the scientific training to provide information about medicines and on the other that doctors are responsible for the provision of information. This outcome coincides with the results of Vozikis (2009) and Mousamas (2011), who argued that in Greece the profession of pharmacist is underrated, either because of the complex legislative framework (Newsletter from Ministry of Health, 2012) or because of other reasons.

Third research question: Do the patients consider information provided by the pharmacist on their medicines to be sufficient for them or they search additional information?

The majority of the participants in the research stated that the information provided by the pharmacist on their medicines was sufficient. However, this does not mean that they did not want additional information, since most of them claimed that they search for additional information about their medicines, regardless of the information provided to them by their pharmacist. This result can be justified from the important role of the

Internet today and the fact that many patients can retrieve healthcare-related information from this source (Mono, 2011).

Fourth research question: Do the demographic characteristics of the respondents affect their opinions expressed?

As the statistical result indicated, there were no significant correlations between the demographic profile of the respondents and their opinions expressed.

5.2 Implications

Pharmacists play a very important role in providing access to the national health care system for their patients (Al – Shaqha and Zairi, 2001; Malindretos and Moschuris, 2008; Demetzos et al., 2008; Vozikis, 2009; Jacobs et al., 2011; Vallejo et al., 2012; Serra-Sastre and McGuire, 2013). The majority of the patients visiting a pharmacy will be provided with advices, without buying a product or a medicine. Pharmacists do not get paid for this service. Despite this, the provision of advices and recommendations free of charge is a task of the utmost importance, since it may prevent unnecessary visits to a general practitioner, showing at the same time that pharmacists are the most accessible health care professionals in a society (Papadakis, 2011).

However, the results of the study indicated that many patients regard pharmacists as not responsible and without the suitable scientific training to provide them with information about the medicines their doctor have prescribed them. For this reason, pharmacists in Greece need to strengthen their scientific role in the community, so as to gain patients' trust. In order pharmacists in Greece to promote their scientific and social role they can make use of three available kinds of communication (Harami, 2010):

1. The first type of communication has the purpose of information and knowledge. It is characterised by a message, its massiveness, its frequency and its low cost. In this type of campaign pharmacists can use media such as TV and radio. An example of this type of campaign is the campaign of Irish and UK pharmacists, as well as the slogan 'ask your pharmacist' in TV and radio spot in Greece. However, the use of these media should be accompanied by other means as well, such as the website of the pharmacies.

2. The second type of campaign place great emphasis on persuasion and is based on word of mouth communication and discussion. A typical example of this type of campaign is the effort of German pharmacists who visit the primary schools in their country for a week every year and teach children the proper use of medicines.
3. The third type of campaign focus on reminder. It invades at the personal life of the patient and becomes an integrated part of it. As an example it could be mentioned the reminder chart of Irish pharmacists. This contains information such as the kind of drugs received by the patient, the right way to receive them together with food consumption, the name and telephone number of the physician, the name and telephone number of the pharmacist etc. With this diagram the pharmacists in Ireland manage to remind daily to the patient their contribution in receiving their medicines according to the appropriate way.

In order to meet the needs and demands of pharmacists, the Pan-Hellenic Association of Pharmacists reported in 2010 the operation of the Institute of Lifelong Education and Professional Development. The goals of this Institute are among others the following (Pharmaceutical Chronicles, 2010): a) the continuous, timely and accurate information of pharmacists for the developments in scientific matters, in issues regarding Public Health etc; b) the constant and lifelong certified education of the pharmacists and their assistants.

5.3 Suggestions for further research

This research explored the opinions of 38 patients from Greece about the information they want to obtain from their pharmacist regarding their medicines and whether this information is sufficient or they search additional information. However, two major limitations of this research is from the one hand the small sample of the research and on the other the limited geographical area from which the sample was retrieved. These two limitations do not allow the generalization of the results without great consideration. For this reason, it is suggested the conduct of a similar research in a greater sample of

patients in Greece, so as to obtain more reliable results that can be generalized to the whole population.

One more research that can be conducted in the future is a comparative study, between the patients in Greece and the patients in another European country. The reason for such a study is to provide results about what patients think in other countries, and whether the legislative framework in these countries allow pharmacists to have a more active role in the community.

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APPENDIX I: QUESTIONNAIRE

Brief instructions for you:

You will address patients presenting prescription, being older than 18 years and willing to participate. You will explain him/her purpose of the study and give him/her information for patients (which you will translate into your language) and ask him/her to complete a questionnaire (which you will translate into your language). You will monitor number and gender of refusals (a person who does not want participate in your research) – it is essential! Print questionnaire on one side of the paper as people tend not to turn pages and not to fill opposite site of the paper.

We need information on pharmacies where the survey takes place. It means whether they are private, part of a chain. Is the pharmacy is situated in the shopping centre? How many people work there?

The survey should take 2-3 months.

Information for patients.

Dear Sir/Madam, we would like to ask you for participation in the anonymous questionnaire survey which aims to find medicines information patients want from a community pharmacist with a new and refill prescription dispensing.

This survey is conducted as a part of the diploma thesis by (your name) who is a student of the Charles University in Prague, Faculty of Pharmacy, Department of Social and Clinical Pharmacy in Czech Republic. The questionnaire results from previously published research which was adapted for the purpose of this reasearch. There are no correct or incorrect answers. Some of the questions are open it means you can write whatever you consider to be important for a particular question.

To be able to describe and evaluate data and compare results with the other research we need some information about you which will be aggregated together in the end of the survey. Do not fill your name anywhere in the questionnaire.

Please complete all the questions.

Nobody will contact you because of this survey again.

Thank you in advance for you helpfulness and your time

Kind regards

Name and contact:

Panagiotis Kalaitzidis;

Questionnaire – please translate into Greek:
Please complete the following questionnaire:

Age:……

Gender:
☐ male
☐ female

The highest education achieved:
☐ Primary
☐ Secondary
☐ University
☐ Other, please fill your own answer……

Working status:
☐ Employed
☐ Unemployed
☐ Retired
☐ Other, please fill your own answer…….

Is Greek your mother tongue?
☐ Yes
☐ No

How many medicines do you take regularly a day?
Please fill your own answer……..

How long have you been regularly taking medicines?
Please fill your own answer……..

Are you picking up a prescription for yourself:
☐ Yes
☐ No
☐ For myself and my relatives/friends as well.

I am picking up a prescription for medicine/s:
☐ I am taking regularly
☐ I am taking regularly + new medicines I have been prescribed
☐ Which are completely new for me (the other medicines which I regularly use I have at home and today I have no prescription for them)
☐ Which are completely new for me. I do not know whether I am going take this medicine/-s regularly.
☐ I am not taking medicines regularly, this medicine/-s are only for an acute condition

How often do you refill your prescription for medicines you use regularly?
Please fill your own answer……..

What information you would like your pharmacist to provide you while dispensing new medicine?
Please fill your own answer:

What information you would like your pharmacist to provide you while dispensing refill medicine?
Please fill your own answer:

Do you consider information provided by the pharmacist on your medicines to be sufficient for you?
Sufficient
1 2 3 4 5 6 7

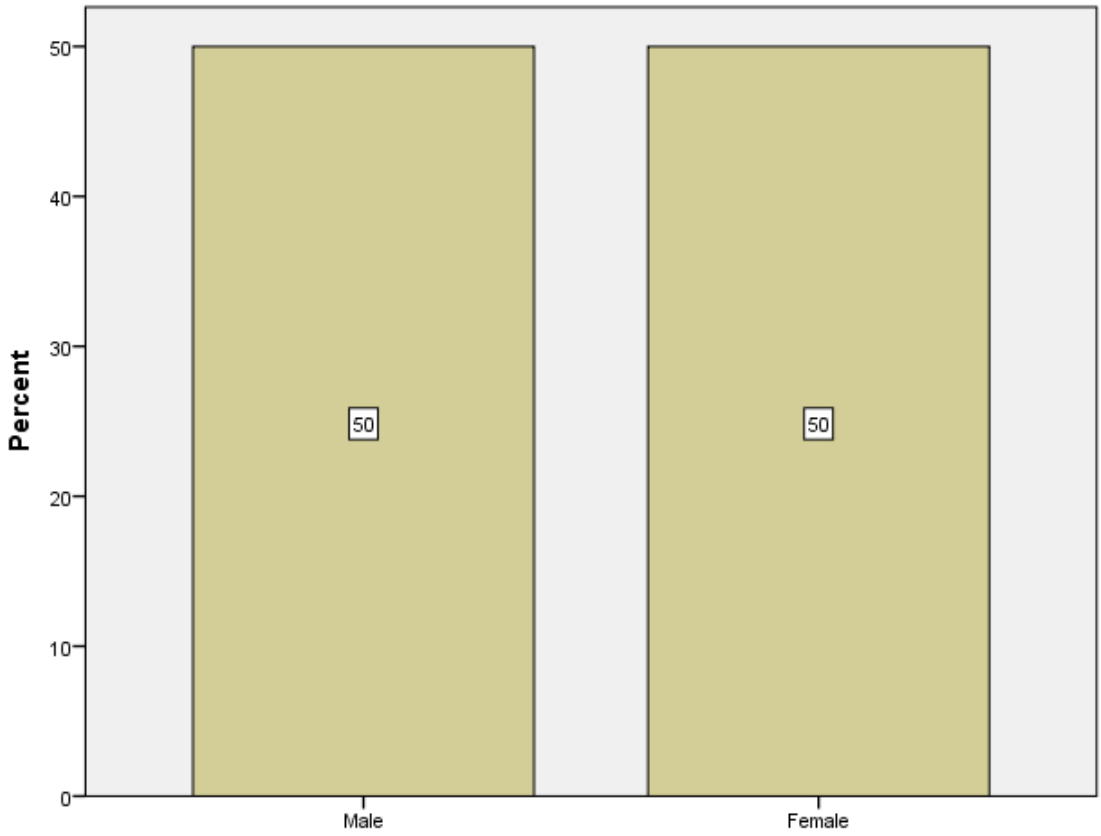
Name one of the medicines you are regularly taking and write all you know about using the medicine – just list of items. It means how to use it, which medicines you should not use concurrently, which adverse effects you may expect, what to do in case of adverse effects (without consulting pharmacist or patient information leaflet).

Please state how long have you been taking this particular medicine.

Thank you very much for your participation in the survey.

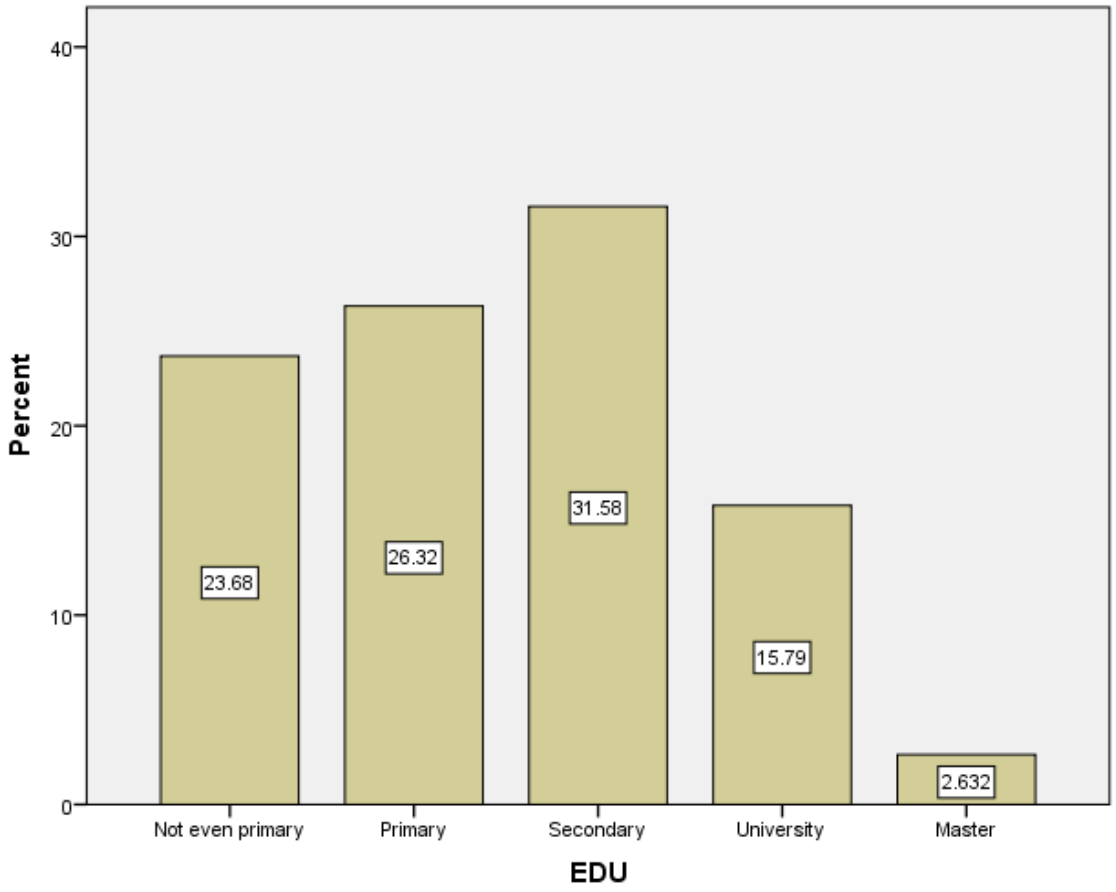
APPENDIX II

Figure 1. Gender of the respondents.



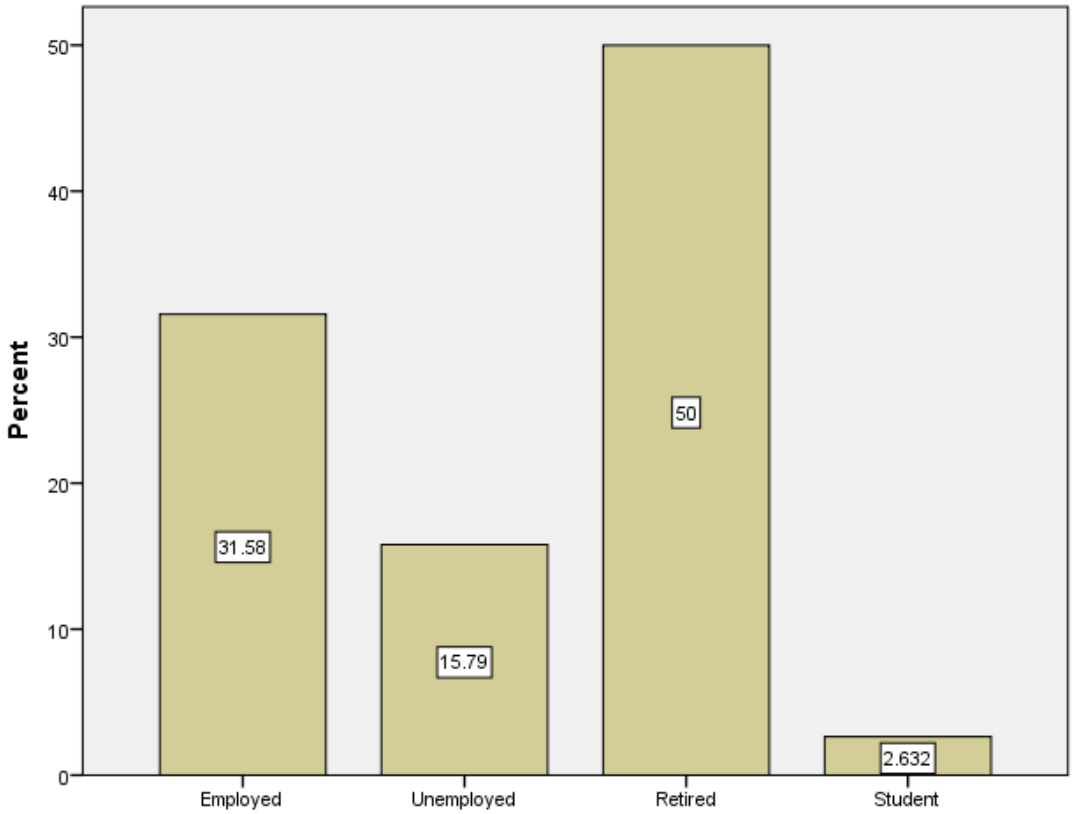
Denominator: 50% of the sample was males

Figure 2. Highest educational level achieved by the respondents



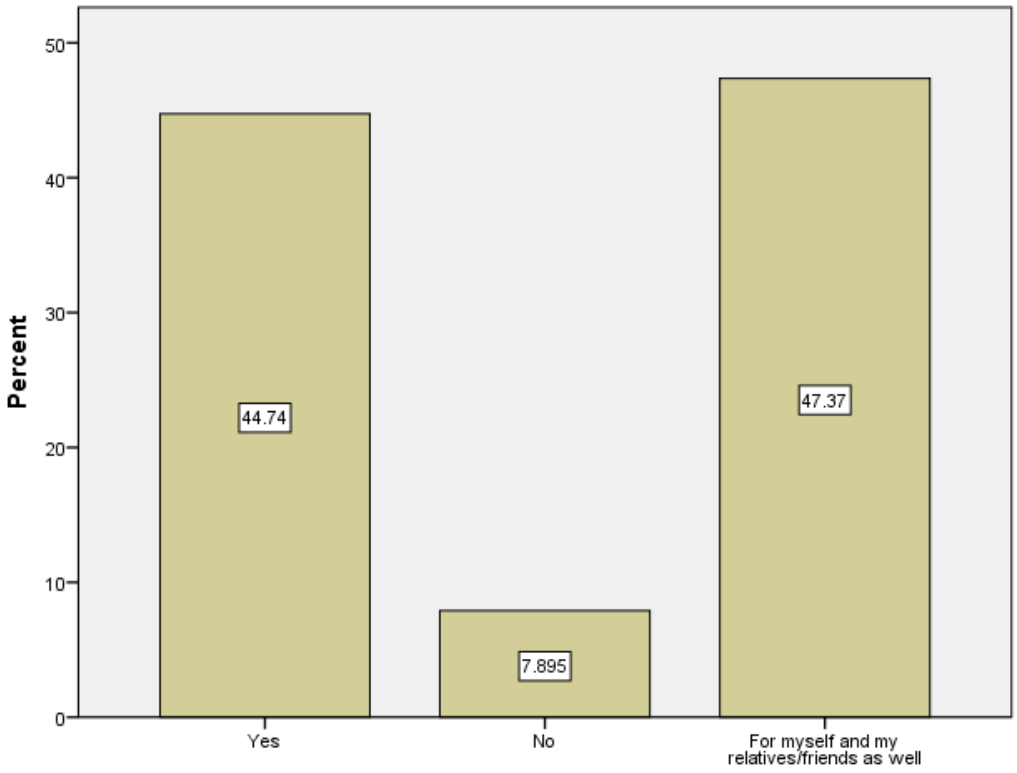
Denominator: 31.6% of the participants had finished secondary education, 26.3% had primary education, 23.7% had no primary education, 15.8% had a university degree and 2.6% had a master degree.

Figure 3. Working status of the respondents



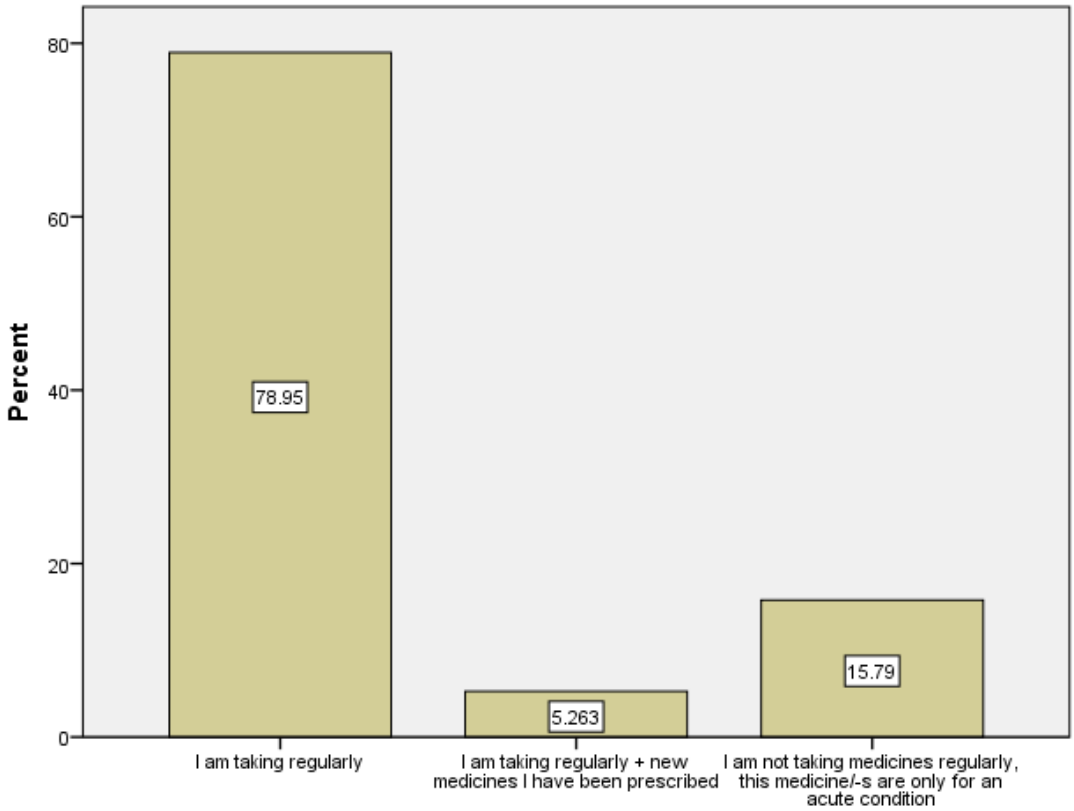
Denominator: 50% were retired, 31.6% were employed, 15.8% were unemployed, 2.6% were student.

Figure 4. Percentage of respondents who are picking up a prescription for themselves and / or their relatives / friends as well



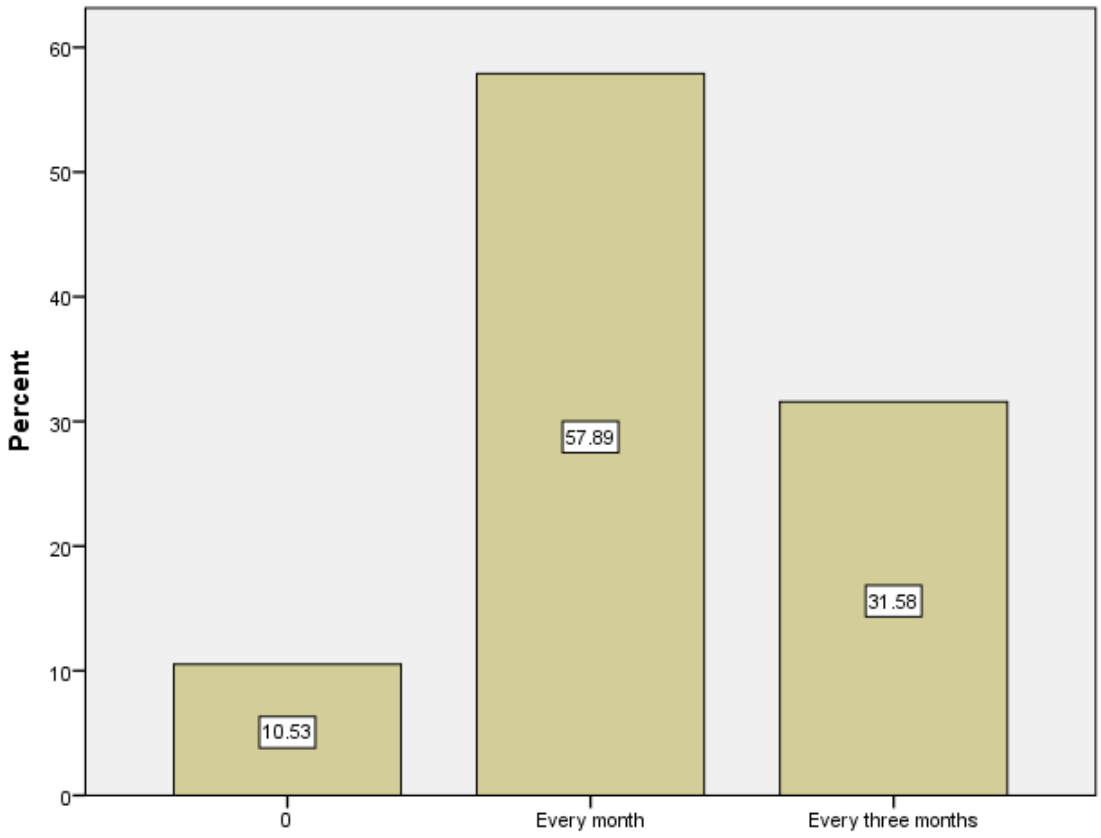
Denominator: 47.4% had a prescription both for themselves and for their friends / relatives as well, 44.7% for themselves, 7.9% not for themselves.

Figure 5. Percentage of the respondents who take regularly their medicine(s)



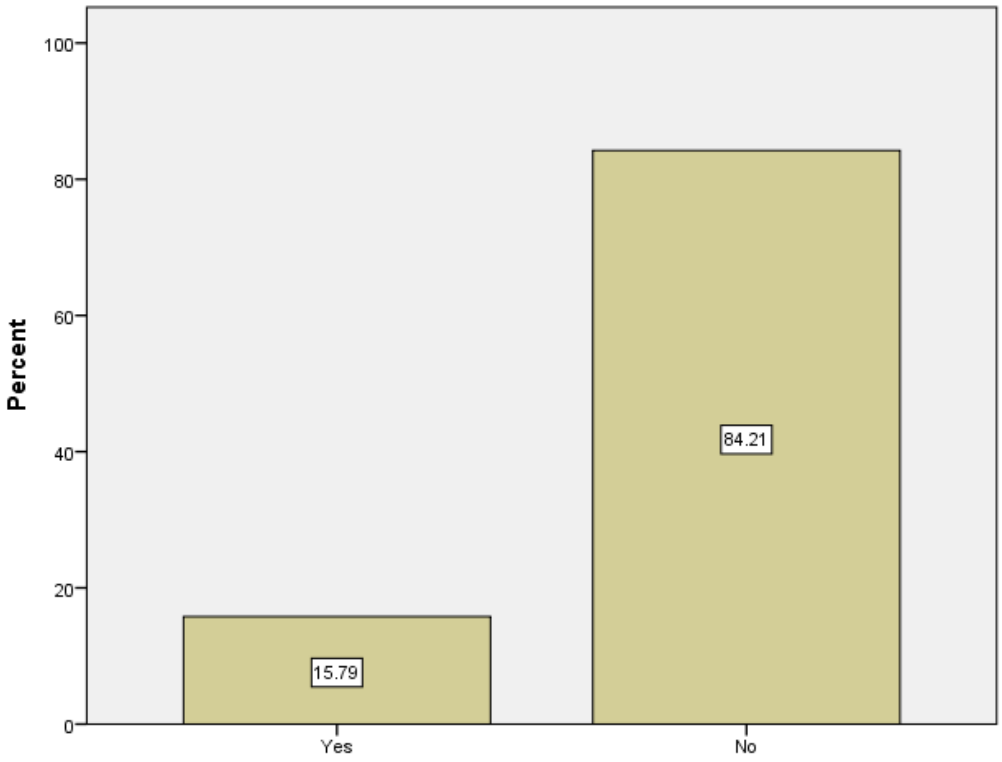
Denominator: 78.9% prescribe medicines regularly, 5.3% regularly, 15.8% for an acute condition.

Figure 6. How often the respondents refill their prescriptions for medicines they use regularly



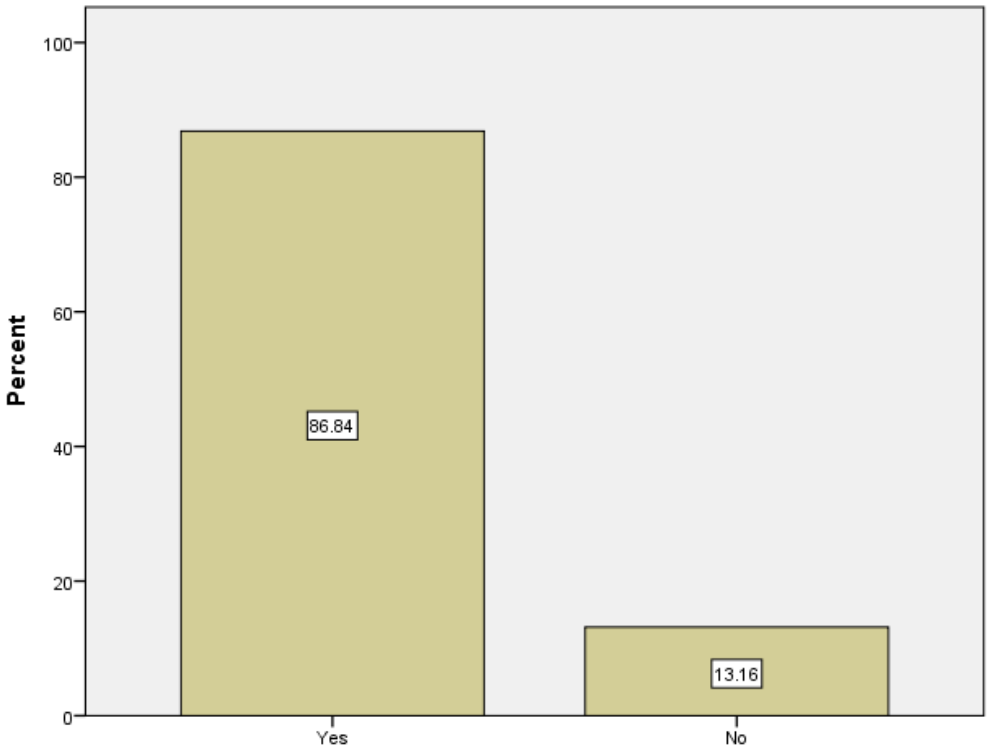
Denominator: 57.9% prescribed medicines every month, 31.6% every three months and 10.5% do not prescribe.

Figure 7. Percentage of the respondents who want information about the medicine they take



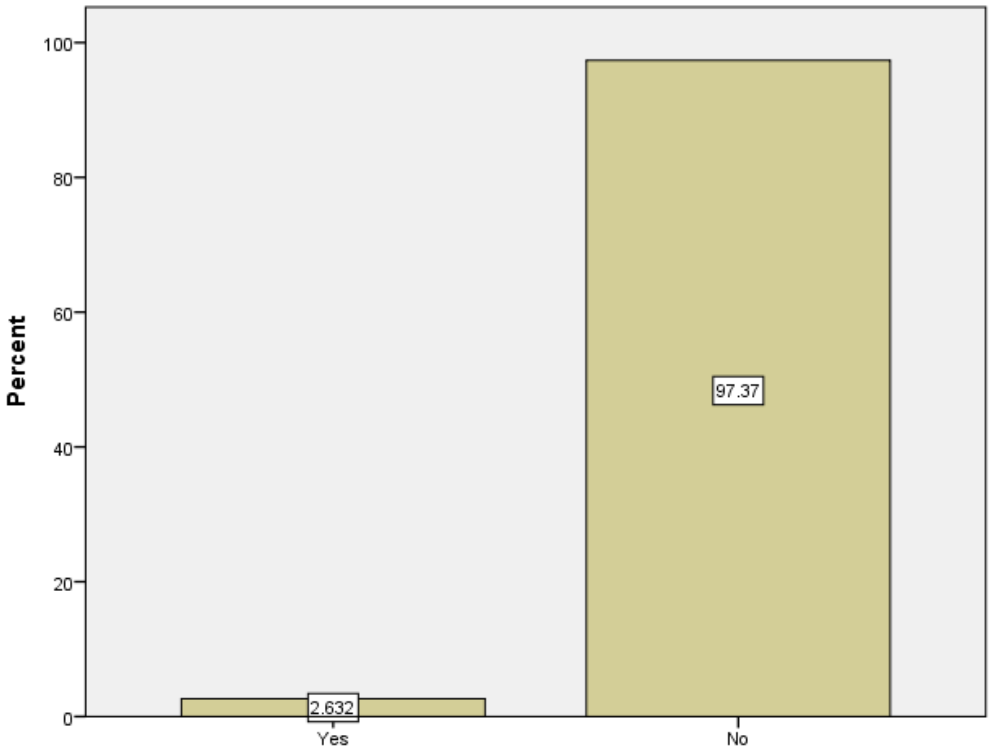
Denominator: 84.2% do not ask information, 15.8% ask about information about the prescribed medicines.

Figure 8. Percentage of the respondents who want information about the dosage of their medicine



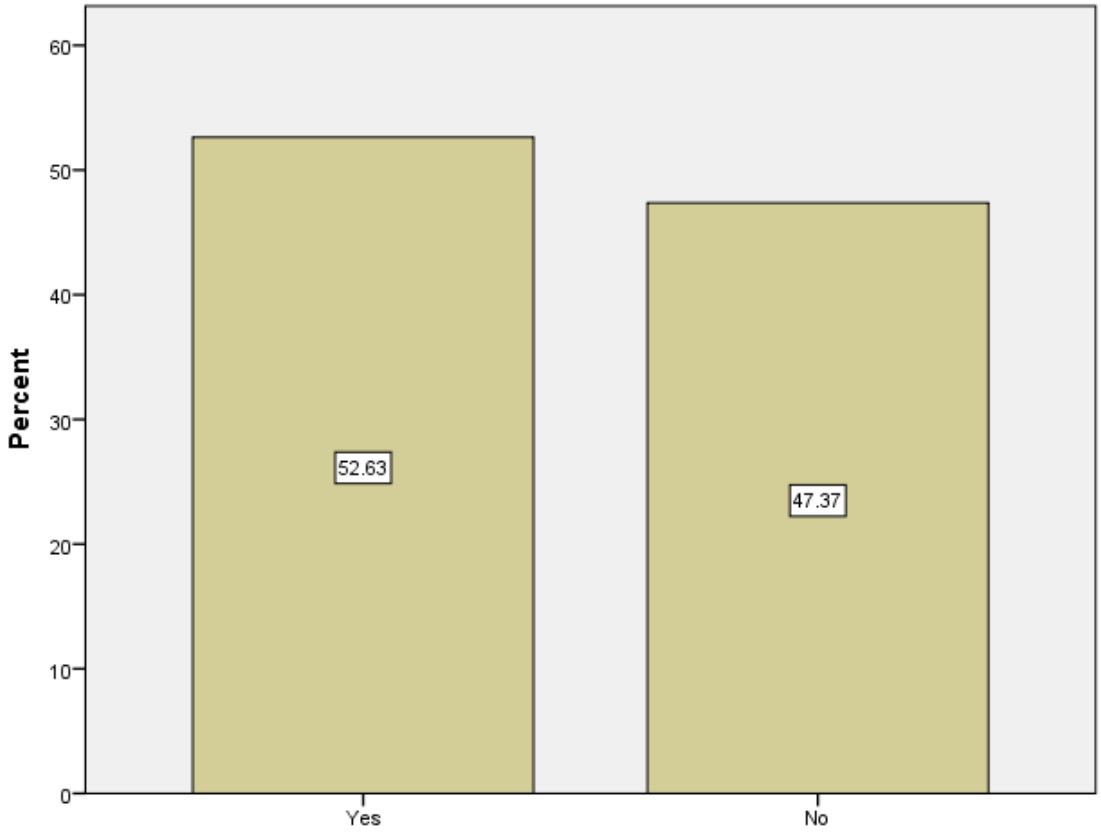
Denominator: 86.8% wanted to obtain information from their pharmacist regarding the dosage of the medicine prescribed, 13.2% did not want to obtain information.

Figure 9. Percentage of the respondents who want information about whether the medicine they take is generic or not



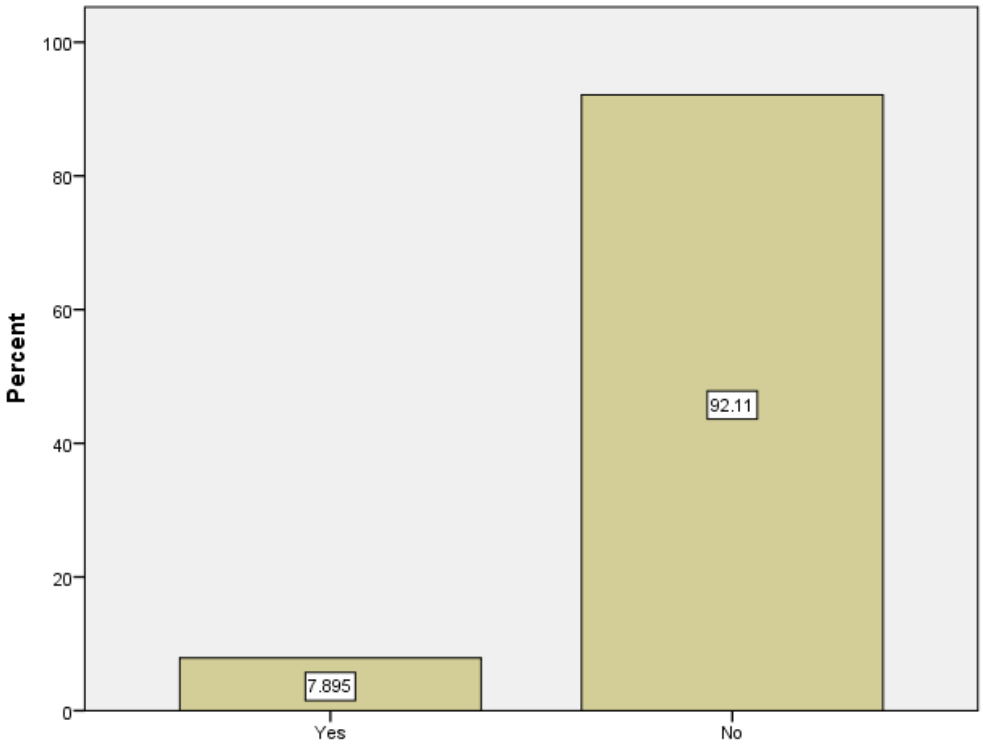
Denominator: 97.4% do not want to obtain information whether the prescribed medicine is generic or not, 2.6% want to know whether the prescribed medicine is generic or not.

Figure 10. Percentage of the respondents who want information about the side effects of their medicine



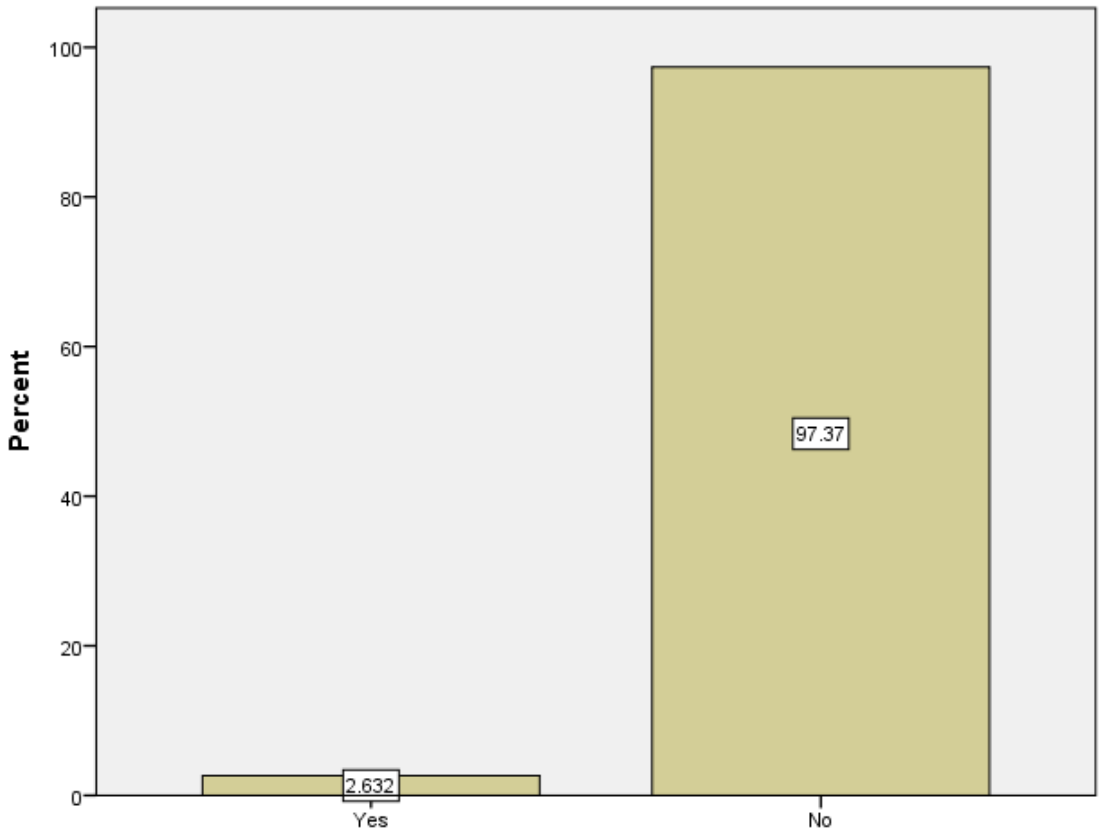
Denominator: 52.6% want to know about the side effects of the medicine they take, 47.4% do not want to know the side effects of the medicine.

Figure 11. Percentage of the respondents who want information about the interaction of their medicines with other medicines



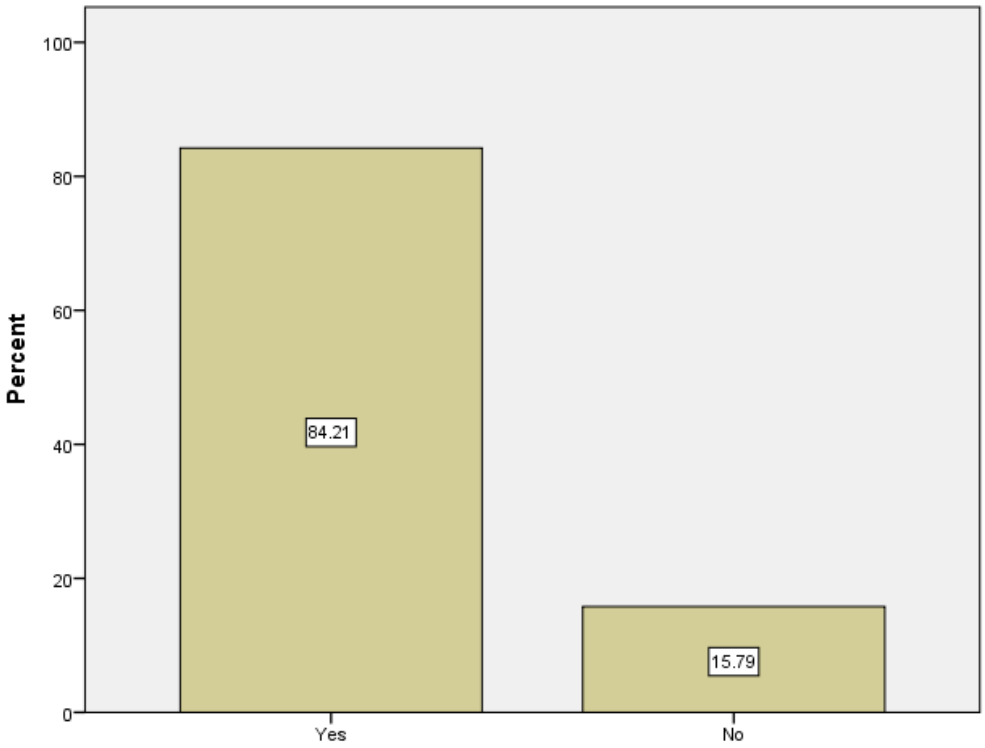
Denominator: 92.1% did not want to obtain information regarding medicine's interaction with other medicines, 7.9% wanted to obtain information regarding medicine's interaction with other medicines.

Figure 12. Percentage of the respondents who want information about the medicine they take while dispensing refill medicine



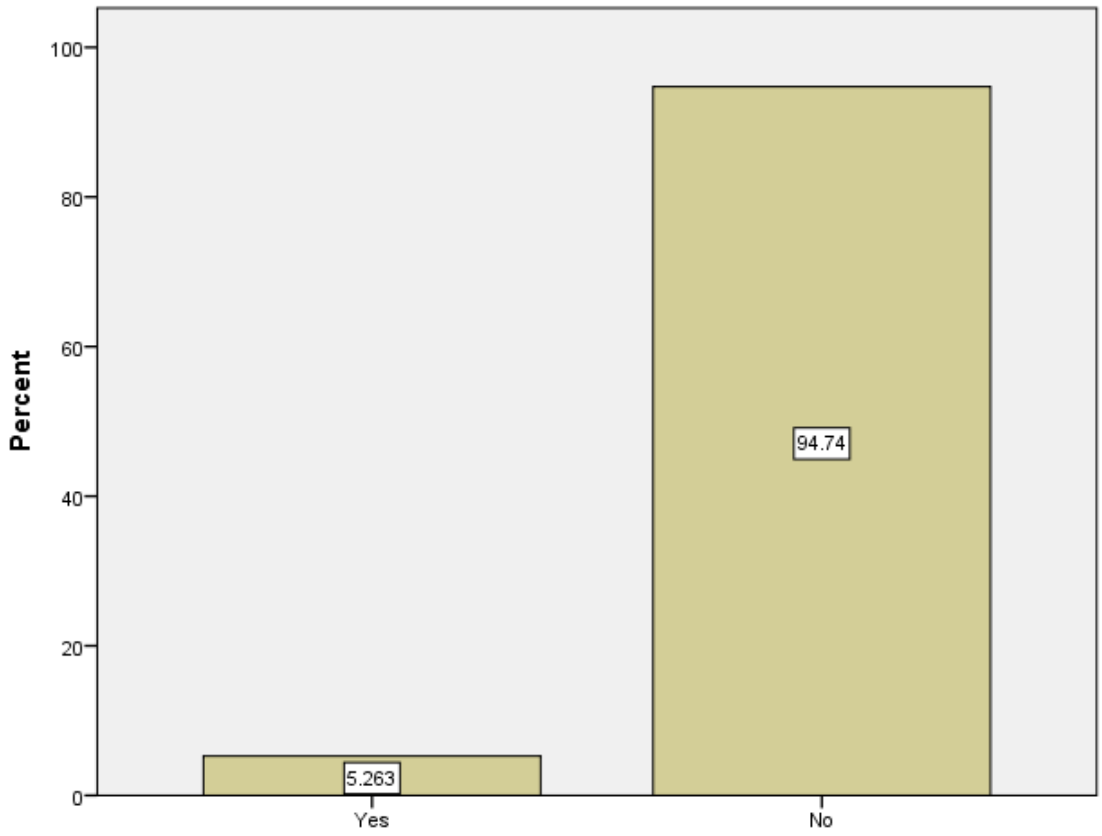
Denominator: 97.4% do not want to obtain information about the kind of medicine their doctor have prescribed them while dispensing refill medicine.

Figure 13. Percentage of the respondents who want information about the dosage of their medicine while dispensing refill medicine



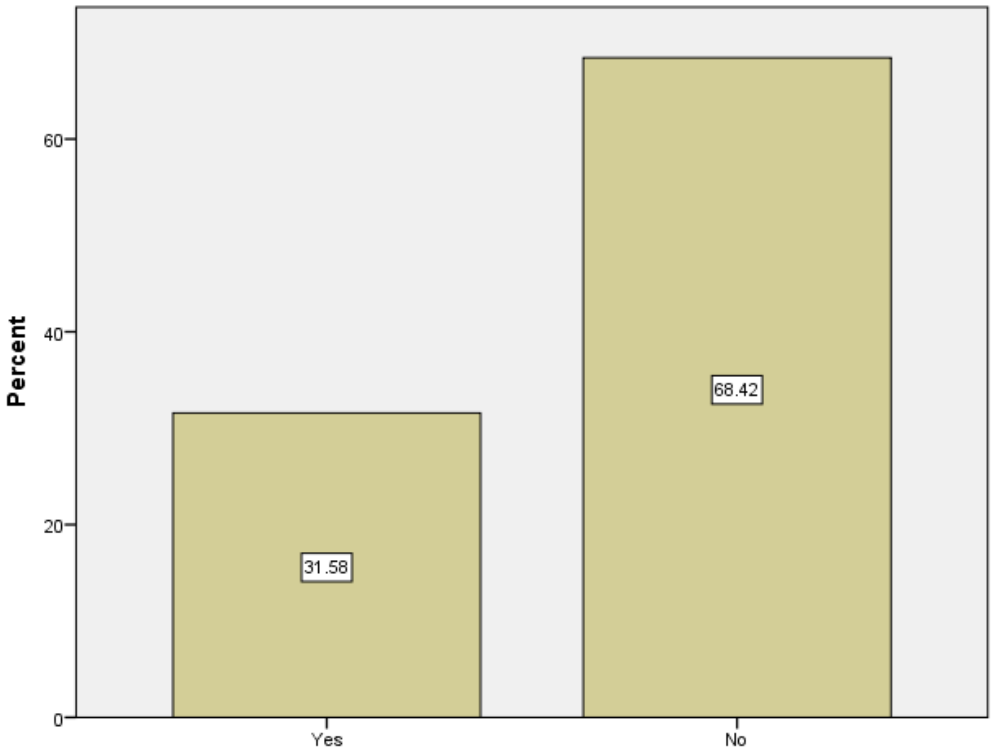
Denominator: 84.2% want to obtain information about the dosage of their medicine while dispensing refill medicine, 15.8% do not want to obtain information about the dosage of their medicine.

Figure 14. Percentage of the respondents who want information about whether the medicine they take is generic or not while dispensing refill medicine



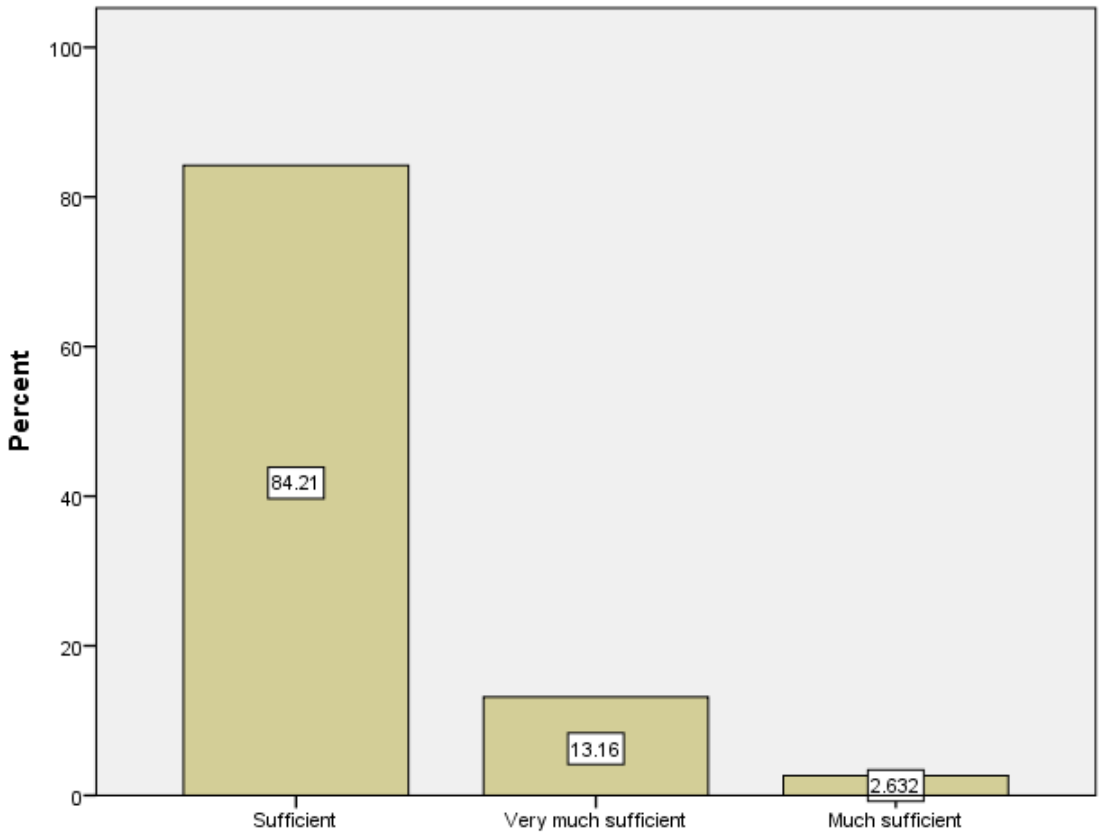
Denominator: 94.7% did not want their pharmacist to provide them with information about whether the medicine they take is generic or not while dispensing refill medicine.

Figure 15. Percentage of the respondents who want information about the side effects of their medicine while dispensing refill medicine



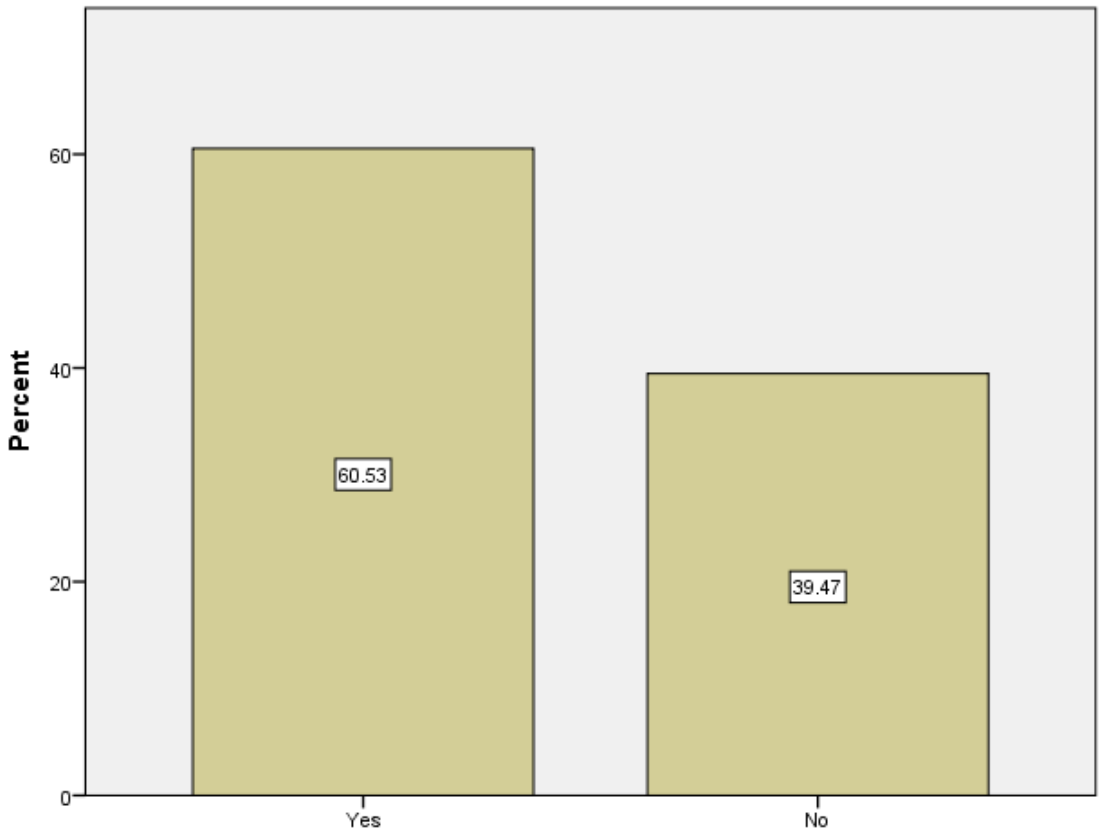
Denominator: 68% did not want to obtain information about the side effects of their medicine while dispensing refill medicine.

Figure 16. Sufficiency of the information provided by the pharmacist to the respondents regarding their medicines



Denominator: 84.2% claimed that the information provided to them by the pharmacist concerning their medicines is sufficient for them, 13.2% is very much sufficient, and 2.6% is much sufficient.

Figure 17. Percentage of the respondents who search additional information on their medicines



Denominator: 60.5% search additional information with regard to their medicines, 39.5% do not search additional information.