ijlpr 2020; doi 10.22376/ijpbs/lpr.2020.10.3.P1-7

International Journal of Lifescience and Pharma Research

Research Article

Clinical pharmacy for effective treatment

Patients Perception and Knowledge on Dispensed Drugs: A Cross Sectional Study in Riyadh

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Abstract: Patient's knowledge of medicines and perception on health care services are paramount for high quality patient care. Despite their importance, there is lack of credible research reported from Riyadh city of Saudi Arabia to ascertain the present status on these issues. Therefore, current research was designed to elucidate the patients' perception and knowledge on dispensed drugs in Riyadh Hospitals through a cross sectional study. A validated pre-tested questionnaire was used to check the knowledge and perception level of 247 patients visiting outpatient's pharmacies of different hospitals of Riyadh city during September to December 2018. The data obtained was analyzed by appropriate statistical tests using SPSS-IBM 23 statistical application. Most of the participants of the current study were in an age group of 16-35 years (64%) with 57% of them was graduates and (48%) were married. Further, 69% of them were employed and most of them (47%) were earning income ranging from 8000 to 15000 SAR/month. Furthermore, 86% of the surveyors were Saudi nationals, 91% were Riyadh city residents and 99.5% were Arabic speakers. Statistical analysis found a significant association between sociodemographic characteristics and knowledge level as well as their perception on health services such as pharmacists interaction, attitude, politeness and their knowledge. Most of the participants had an average to good knowledge on their dispensed drugs. In addition, we noted that there is a significant association between sociodemographic characteristics of patients and their perception on the health services which influence the patient's overall knowledge on their dispensed drugs. In conclusion, the patient's knowledge on their dispensed medicines depends on factors associated with both patients and health care providers and good interaction between them increases the quality of health care services.

Keywords: Patients' knowledge; dispensed drugs; socio-demographic characteristics; patient's perception; Riyadh; Saudi Arabia.

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Recieved On 09 January 2020
Revised On 11 February 2020
Accepted On 25 February 2020
Published On 01 July 2020

Funding This research did not receive any specific grant from any funding agencies in the public, commercial or not for profit sectors.

Citation Renad Mohammed Sadek1, Razan AL-Faifi1, Muhra Al-qahtani1, Munifah Alanizi1, Arwa Sultan1, Jowharah Awwad1, Syed Mohammed Basheeruddin Asdaq2* , Patients Perception and Knowledge on Dispensed Drugs: A Cross Sectional Study in Riyadh.(2020).Int. J. Life Sci. Pharma Res.10(3), 1-7 http://dx.doi.org/10.22376/ijpbs/lpr.2020.10.3.P1-7

1. INTRODUCTION

Dispensing is defined as the process of preparing and giving medicines to a named person together with clear instructions and good counseling which are required for the use of these medicines. It is one of the vital elements for the rational use of medicines and should be free from any error that can produce a negative effect on the patient care[1]. The inadequate knowledge of the patients regarding their dispensed medicines can be a patient drug safety issue and could produce in some forms of preventable adverse drug events[2]. According to The World Health Organization (WHO), half of all medicines are inappropriately prescribed, dispensed and sold and about half of all patients fails to take their medicines properly[3]. There are many factors that can determine patient knowledge, including the quality of the consultation and the information about the prescribed medicines which is given by consulting health worker[4]. The World Health Organization (WHO) requires the dispenser to be knowledgeable about all the related information of the medicines such as their indications, side effects, contraindications and doses therefore improving patients understanding of their drug regimen[3]. Numbers of studies have found an influence of the patients' knowledge on the therapeutic outcome. Research findings in Eastern Ethiopia have shown that the educational background of patients, positive patient-pharmacist interaction and marital status of patient were the major factors that influenced the exit knowledge of the patients for dispensed drugs[5]. In a similar context study conducted in Pakistan, demonstrated that there are three major factors affecting patient's knowledge which are healthcare professionals related factors, patient related factors and system related factors[6]. Additionally, a cross-sectional study in rural Gambia found that the majority of patient's responses were categorized as having "poor" knowledge of dispensed drugs, and the patient's age and educational levels are good predictors of patient's knowledge about their dispensed medicine[7]. While, a Ghanaian study showed that overall patient knowledge about the dispensed medicines was above average but it still needs to be improved to ensure that patients are aware with all the information needed for safe and effective administration of their medicines[8]. However, there is dearth of any report from Riyadh region of Saudi Arabia on determining factors that influences the knowledge of patients on dispensed drugs. Hence, the current research was designed to elucidate the patients' perception and knowledge on dispensed drugs in Riyadh hospitals through a cross sectional study.

2. MATERIALS AND METHODS

2.1 Study design

A cross-sectional study was conducted where patients from outpatient's pharmacies of different hospitals of Riyadh surveyed using standard validated pre-tested questionnaires to determine their knowledge level on dispensed drugs from September to December 2018. All patients who are severely ill and those who are taking more than four drugs were excluded.

2.2 Data collection

Data were collected using random recruitment of patients visiting Al Watani Hospital, King Fahad medical city, National Guard Hospital, family hospital and typical medical complex centre, Riyadh. The basic structure of the questionnaire was adapted from a research published recently [6]. This validated questionnaire was suitably modified to measure the outcome variables. There were three parts in the questionnaire. The first part documented the socio demographic parameters: gender, age, marital status number of children, level of education, employment status, salary, nationality, location, original language and pharmacy visit frequency. The second part determined the knowledge status about dispensed drugs: name, indications, modality, frequency, treatment duration, possible interactions, major adverse effect, instructions, and actions taken in case of missed dose, storage, label and expected outcomes. The third part measured the perception scale of patients on health care services such as, pharmacist interaction, physician interactions, clearness of pharmacist voice, clearness of instructions, politeness of service provider, pharmacist attitude and pharmacist knowledge. There were twelve questions in the knowledge domain. They are supposed to answer either as yes or no. All questions answered 'yes' considered as 100% knowledge score. Based on the knowledge score, knowledge level was divided into three categories, namely, good for knowledge score between 81 to 100%, average for knowledge score between 40 to 80% and, poor for knowledge score less than 40%.

2.3 Ethical considerations

All procedures performed in this study involving human participants were in accordance with the ethical standards and necessary approvals were taken from Research Committee of College of Pharmacy, Al-Maarefa University, Riyadh prior to the commencement of research (MCST-COP 1807/RC). Participation was completely voluntary, and anonymous. The survey was conducted only after the purpose, procedure, benefits, and potential risks were explained to the respondents, and they consented by checking the "agree to participate" box on the covering page of survey form.

3. STATISTICAL ANALYSIS

Data entry and analysis were performed after completion of interviews in different hospital settings. Descriptive analysis was done to ascertain the profile of participants and their responses. Comparison of demographic features were done with knowledge and perception scale to determine the level of significance using Chi-square test. P value less than 0.05 was considered significant. All statistical analysis was done using SPSS IBM 23 statistical application.

4. RESULTS

4.1 Demographic distribution of study participants

As evident from table 01 below, 52% of the participants in our study were male, while 48% were female. High percentage of surveyors were in an age group of 16-25 and 26-35 years (together 64%) with 57% of them were either college or university graduates. It was found that 36% of them were single and 48% were married, among the married participants, more than 53% have 1-3 children. Further, 69% of them were employed and most of them (47%) were earning in the range of 8000 to 15000 SAR. Furthermore, 86% of the surveyors were Saudi nationals, 91% were city residents and 99.5% were Arabic speakers. Moreover, more than 69% of the surveyors reported for higher frequency (more than two visits per month) of pharmacy visits.

Table 01: Frequency distribution of demographics parameters

Demographics	Frequency	Percentage
Gender		
Male	128	52.04
Female	118	47.96
Total	246	100
Age		
Less than 16	5	2
16-25	75	30.6
26-35	83	33.9
36-45	47	19.2
46-55	26	10.6
More than 56	9	3.7
Total	245	100
Social status		
Single	90	36.4
Married	119	48.2
Separated	16	6.5
Divorced	17	6.9
Widow	5	2
Total	247	100
Children umber		
1-3	72	53.3
4-7	49	36.3
More than 7	14	10.4
Total	135	100
Educational Level		
Not educated	19	7.7
High school	71	28.7
College	60	24.3
University	80	32.4
Masters	15	6.1
PhD	2	0.8
Total	247	100
Employment Status		
Employed	170	69.4
Not employed	75	30.6
Total	245	100
Salary		
Less than or equal 8,000	41	24.3
More than 8,000 and less than 15,000	80	47.3
More than 15,000	48	28.4
Total	169	100
Nationality		
Saudi	213	86.6
Non Saudi	33	13.4
Total	246	100
Living place		
City	224	90.7
Village	23	9.3
Total	247	100
Original language		
Arabic	229	99.5
Non Arabic	1	0.5
Total	230	100
Pharmacy visit frequency		
First visit	36	14.57
Second visit	40	16.19
Frequent visits	171	69.2
Total	247	100

3.2 Comparison of Knowledge level with demographic features

As shown in table 02, a significantly higher percentage of our study participants (both male and female) demonstrated a good knowledge on dispensed drugs. Significant difference was found in the knowledge level of surveyors in an age group of 26-35 years with 66% of them carry good knowledge, while 28% and 5% of them showed average and poor knowledge level. Among the other age groups, 26-35 years and 16-25 years demonstrated a good knowledge with 49% and 43%, respectively. There is a significant difference between knowledge levels of surveyors in an education of PhD with 100% of them carrying good knowledge. Among the other education groups, master and university demonstrated a good knowledge with 66% and 55%. And the only reason for the higher percentage of knowledge in higher education is maybe because most of the patents who participate are highly educated. And the least was for non-educated.

Table 02: Comparison of Knowledge level with demographic features

Demographics	Knowledge level			*P* value
	Good	Average	poor	
Gender				
Male	56.3%	39.8%	3.9%	0.000
Female	40.7%	46.6%	12.7%	
Total	48.6%	42.9%	8.5%	
Age				
Less than 16	20%	60%	20%	
16-25	42.7%	52%	5.3%	0.000
26-35	66.3%	28.9%	4.8%	
36-45	48.9%	46.8%	4.3%	
46-55	23.1%	61.5%	15.4%	
More than 56	22.2%	22.2%	55.6%	
Total	48.6%	43.3%	8.2%	
Social status				
Single	43.3%	52.2%	4.4%	0.002
Married	56.3%	37%	6.7%	
Separated	31.3%	37.5%	31.3%	
Divorced	41.2%	47.1%	11.8%	
Widow	40%	20%	40%	
Total	48.6%	42.9%	8.5%	
Children number				
1-3	59.7%	34.7%	5.6%	
4-7	49%	44.9%	6.1%	0.112
More than 7	21.4%	64.3%	14.3%	
Total	51.9%	41.5%	6.7%	
Educational level				
Not educated	15.8%	57.9%	26.3%	
High school	45.1%	46.5%	8.5%	0.014
College	48.3%	41.7%	10%	
University	55%	42.5%	2.5%	
Masters	66.7%	20%	13.3%	
PhD	100%	0%	0%	
Total	48.6%	42.9%	8.5%	
Employment status				
Employed	57.6%	34.7%	7.6%	0.000
Not employed	28%	62.7%	9.3%	
Total	48.6%	43.3%	8.2%	
Salary				
*Less than or equal 8,000	65.9%	29.3%	4.9%	
*More than 8,000 and less than 15,000	57.5%	37.5%	5%	0.027
More than 15,000*	50%	29.2%	20.8%	
Total	57.%	33.1%	9.5%	
Nationality				
Saudi	51.6%	44.1%	4.2%	0.000
Non Saudi	30.3%	33.3%	36.4%	
Total	48.8%	42.7%	8.5%	
Living place				
City	50%	45.5%	4.5%	0.000
Village	34.8%	17.4%	47.8%	

Total	48.6%	42.9%	8.5%	
Original language				
Arabic	49.3%	43.7%	7%	
Non Arabic	0%	100%	0%	0.635
Total	48.9%	44.2%	6.9%	
Pharmacy visit frequency				
First visit	61.1%	33.3%	5.6%	0.162
Second visit	60%	35%	5%	
Frequent visits	43.3%	46.8%	9.9%	
Total	48.6%	42.9%	8.5%	

3.3 Comparison of sociodemographic features with patients' perception

As shown in table 03, there was a significant association between the pharmacist interaction and the social status of the patients (*P* value, 0.000). Further, social status and the income of the patients were significant factors on physician interaction (*P* value, 0.011) and (*P* value, 0.010), respectively. Furthermore, the clearness of pharmacist's voice was associated significantly with many factors such as the age (*P* value, 0.020), social status (*P* value, 0.001), income (*P* value, 0.002), educational level (*P* value, 0.043) and (*P* value, 0.000) for the nationality and location. Also, significant association was found between the pharmacist politeness and the gender (*P* value, 0.006) likewise in the social status (*P* value, 0.002), salary (*P* value, 0.003), educational level (*P* value, 0.016), nationality and location (*P* value, 0.000). Additionally many factors were significant with pharmacist's attitude these are the gender (*P* value, 0.02), social status (*P* value, 0.000), employment status (*P* value, 0.045), educational level (*P* value, 0.014), nationality and location (*P* value, 0.000). Moreover there was an association between the clearness of the instructions and the gender (*P* value, 0.016) together with the social status (*P* value, 0.015), income (*P* value, 0.011), educations level (*P* value, 0.046), nationality and location (*P* value, 0.000). Finally, there is a significant association between the pharmacist's knowledge and the gender (*P* value, 0.013) , social status (*P* value, 0.06), children number (*P* value, 0.06) as well as nationality (*P* value, 0.000) and location (*P* value, 0.005) .

Table 03: Significant impact of sociodemographic features on patients' perception

Perception Scale	Sociodemographic Features									
	Gender	Age	Social status	Number of children	Employment	Salary	Education level	Nationality	location	Pharmacy visit frequency
Pharmacist interaction	0.271	0.204	0.000	0.404	0.143	0.271	0.000	0.000	0.000	0.162
Physician interaction	0.182	0.727	0.011	0.771	0.874	0.010	0.088	0.000	0.000	0.026
Clearness of pharmacist's voice	0.089	0.020	0.001	0.490	0.760	0.002	0.043	0.000	0.000	0.053
Pharmacist politeness	0.006	0.396	0.002	0.272	0.148	0.003	0.016	0.000	0.000	0.374
Pharmacist attitude	0.02	0.855	0.000	0.389	0.045	0.124	0.014	0.000	0.000	0.026
Clearness of instructions	0.016	0.282	0.015	0.165	0.870	0.011	0.046	0.000	0.000	0.242
Pharmacist's knowledge	0.013	0.289	0.06	0.05	0.874	0.070	0.847	0.000	0.005	0.536

4 DISCUSSION

The current study was designed to elucidate the knowledge level of patients on dispensed medication and also to determine whether there is any impact of patients' perception and sociodemographic features on the development of their knowledge over their medication. The results of this study demonstrated an overall good knowledge level across participants with different socio demographic profiles. As per our study outcome above, surveyors who were younger than 45 years, college or university graduates, urban residents, and married, employed and having good income carry good knowledge on dispensed drugs. A study carried out earlier by (Mario Krammel, 2018)[9] reported that younger people with good educational background are able to recognize and understand the details of drugs taken by them for alleviation of their diseases. Our report and this report are in correlation with each other. Further, our study reiterated the earlier findings where researches have shown a positive association of educational background and their knowledge level on the medicines used by them for therapeutic purposes[10]. Another significant finding of our study revealed that people with social responsibilities such as married individuals, possess good knowledge on dispensed medications. This finding has been corroborated with a study done by Cooper C, et al 2005[11]. This could be due to the possible family support that may increase the adherence of patients on their drugs which eventually results in patients' understanding of the drugs dispensed to them. In

contrast some other study found no association between the marital status and knowledge level of patients (Jin J, 2008) [12] and (Wild MR, 2004) [13], they suggest that single person may become more careful about himself and require more self-responsibility and autonomy (Nigatu Hirko, 2017)[5]. This conflicting evidence was further analyzed and found that singles who are more qualified carry better knowledge than singles with poor educational background. Hence the most important independent factor was educational background rather than social status on the development of knowledge. Besides, our study highlighted that the participants who are employed and having good constant monthly income are more likely to have sufficient knowledge on their dispensed medicines than those who are not working. These findings are consistent with studies done earlier by (Luis Quihui, 2006)[14]. Similar results were also found in an Indian study (Zimmer Z, 2001)[15]. Moreover, our report indicates that the good knowledge level was associated with the resident place of the patients, the urban residents high knowledge compared to rural residents the reasons may be due to low educational level or inadequate health services that provided to them. A study in Western China noted that the health knowledge awareness of rural residents was quite low (Yuan F, 2015)[16], which is correlated to ours. Additionally, perception on pharmacist interaction on counseling and drug use was greater in those who are urbanized and educated. Similar correlation was reported earlier by Saira et., 2009[17]. They reported that the pharmacist able to advise, guide direct and persuade the patient to comply with the correct usage of drug will receive a higher response from the people who live in cities. Our study showed that the people who are adults and married have greater perception responses of pharmacist interaction compared to those who are separated and old. Our findings emphasized the earlier revelation where positive perception on the services offered to them was shown in people who are socially responsible such as married or singles who are educated [18]. Also it was shown in the study that those who are employed with a reasonable income have good responses to pharmacist interaction compared to those who don't have a job or who earn less income. This could be attributed to the financial and mental stress that a patient may undergo due to which their perception changes on the services given by pharmacists in the hospital (Scott, 1993)[19].

5. STUDY LIMITATIONS

The research envisaged has accomplished its task, however, it has some limitations. First, the data generated is only based on the recalling ability of the participants. There is a chance of misunderstanding or wrong reporting. Second, data was generated from different locations; some health centers provide additional information to patient on drug use, while the others are not. The variation in response was estimated based on socio demographic characteristics of patients; however, there is no comparison among different locations.

6. CONCLUSION

In conclusion, the current study found that most of the patients who were visiting different outpatient's pharmacies in Riyadh are within the average and good knowledge level about their dispensed drug. In addition we noted there is a significant association between many sociodemographic characteristics of patients and their perception on the health services which extremely influence the patient's overall knowledge on their dispensed drugs. Finally the patient's knowledge on their dispensed medicines depends on both patients' factors and health care providers and the interactions between them.

7. AUTHORS CONTRIBUTION STATEMENT

Ms. Renad was responsible for gathering data and developing initial draft of the manuscript. Ms. Razan participated in data curation and analysis, Ms. Muhra was tasked to screen the data and filter data with missing information. Ms. Munifah participated in data interpretation and manuscript writing. Ms. Arwa was tasked to do statistical analysis, Ms Jowhara was responsible for doing first review of the manuscript while Dr. Asdaq was responsible for conceptualization, designing, analyzing & interpreting the results as well as final review of manuscript.

8. ACKNOWLEDGMENTS

The authors are thankful to the management of Al-Maarefa University, Riyadh and Dr. Mohammed Al-Yamani, Dean, College of Pharmacy, Al-Maarefa University for providing necessary facilities to carry out the work. The authors would also like to express gratitude to the authorities of Al Watani Hospital, King Fahad medical city, National Guard Hospital, family hospital and typical medical complex centre, Riyadh for facilitating data collection in their facility.

9. CONFLICT OF INTEREST

Conflict of interest declared none.

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