Original Article

TRUSTING THE PHARMACIST IN DELIVERING MEDICATION INFORMATION: A COMMUNITY-BASED PERSPECTIVE

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ABSTRACT

Objective: Optimal disease management is influenced by a solid patient-health provider relationship; which includes trust in the provider. The study compares respondents' trust in pharmacists and physicians for the delivery of drug information.

Methods: Residents of 3 rural communities in Lebanon, aged 40 and above, were invited to participate in the study, 760 accepted. Participants were asked who they trust the most with information about their medication: their physician or their pharmacist.

Results: Of the total sample, 154 chose the pharmacist as their most trusted source of medication information (20%). Characteristics associated with choosing the pharmacist were: being a male (29.3% vs 16.2% $p<.001$), of younger age (31.5% among<50 y, 18.8% among 50-64 y, and 14.6% among 65+years $p<.001$), single (31.6% vs 21.9% married and 9.3 others, $p=0.023$), working (39.2% vs15.7% $p<.001$), and insured (2.3% vs 16.4% $p=0.048$). The multivariate logistic regression model revealed that having a family member with hypertension (OR=1.86 95% 1.23-2.82), or cardiovascular (OR=3.39 95%CI 1.55-7.45) increased the likelihood of trusting pharmacists over medical doctor. On the other hand, a self-report of cardiovascular disease (OR=0.34 95% CI 0.12-0.95) and taking medication (OR=0.41 95% CI 0.25-0.67) were associated with a decrease in the trust in the pharmacist in favor of the physician.

Conclusion: Although pharmacists are the drug specialists, the majority of the Lebanese rural community residents reported higher trust in their physicians with information about their medication(s).

Keywords: Pharmacists, Physicians, Healthcare, Community pharmacy, Drug information, Counseling, Trust

INTRODUCTION

Optimal disease management is strongly influenced by a solid patient-health provider relationship [1, 2]. Trust significantly impacts medical care outcomes [3]. Trust can be defined as a psychological state which consists of a relational notion between two people, such as the patient and their physician, pharmacist, or nurse; or between a person and an organization, such as the patient and a hospital, or a national health service [4].

The roles of physicians and pharmacists can be clearly defined and differentiated in the healthcare system. While the physician's role consists mainly of assessing, diagnosing, and prescribing drugs, the pharmacists' role has evolved over the years from drug dispensing and compounding to a patient-centered service. The modern role of pharmacists involves identifying potential drug interactions, allergic reactions, contraindications, and providing patient education and counseling tips [5]. However, some patients still lack a clear understanding of the pharmacist's extended services and continue to view the pharmacist as a drug supplier with a role limited to dispensing [6]. To note, more patients are still placing their trust in physicians rather than pharmacists with regard to medications. In a study comparing older adults' trust in different healthcare providers, 80% of respondents reported trusting physicians "a lot" with drug effectiveness compared to 66.4% for trusting pharmacists [7]. Similarly, in a study assessing patients' barriers to asking pharmacists medication-related questions, 70% of respondents said they were unfamiliar with pharmaceutical care monitoring and screening services, and 45% said that their higher trust in their physician acted as a barrier towards asking their pharmacist drug-related questions [8].

This high level of patients' trust in their physicians is thought to be the result of a solid relationship built over a long period of time [9], whereas the less consistent relationship that patients have with their pharmacists is compounded by the perception that physicians know more about their patients' medical history. This perception can largely be attributed to preset hierarchies on the part of patients, who viewed physicians as having authority over other health practitioners, besides their vast years of education, as an indicator of their pristine judgment, in contrast to a lower certainty about pharmacists' education [10].

Therefore, the aim of this study was to identify factors that explain why individuals prefer either physicians or pharmacists for the delivery of information about medication.

MATERIALS AND METHODS

Study design

This study was part of a larger study that employed a community mapping approach where adults residing in several rural areas of Lebanon were screened for chronic disease(s) and consequently referred to primary healthcare centers [11, 12].

The design was cross-sectional, with data collected from 3 rural areas in Lebanon: Kfarkila, Shehabiyah, and Jleela. A questionnaire was administered by trained community health workers during the summer of 2015. The questionnaire was made of multiple sections including general demographic information (age, sex, marital status, etc.), family medical history (hypertension, diabetes, high cholesterol, or cardiovascular disease), bio-physiological measurements (height and weight used to calculate BMI), medications (categorized into 4 groups: Antihyperglycemics,

Antihypertensive, Antihyperlipidemics and Antiplatelets). Finally, the questionnaire asked participants to state a trust preference. Permitting a single choice, a questionnaire item asked participants whom they trust the most for information about medication from among physicians, pharmacists, nurses, family or friends, or others.

Statistical analysis

Data collected were coded and entered into SPSS V.23. Frequency and percentage were used to summarize the variables. A small percentage of respondents preferred sources other than physicians or pharmacists for information about medication, and so were excluded from the study's bivariate and multivariate analyses. The bivariate analysis compared differences in proportion in trust preference across socio-economical and health factors (i.e. age, gender, etc.). The difference in proportion was tested using Pearson's chi-square. Multivariate logistic regression was used to determine factors that independently predict preferential trust in pharmacists over physicians. Coefficients produced by the logistic regression were exponentiated to produce Odds Ratios (OR), and Standard Errors (SE) were used to calculate 95% Confidence Intervals (CI). All analyses were carried out at the 0.05 significance level.

Ethical approval

This study was partially funded by the International Development Research Center (IDRC) and was approved by the Institutional Review Board of the American University of Beirut (AUB-IRB) (Protocol number: FHS. SS. 11).

RESULTS

A total of 760 participants age above 40 were surveyed. The majority were female (60.5%) and were equally distrusted among the 3 age groups (31% 40-49 y, 38.2% 50-64 y, and 30.5% 65 and above). The majority were married (87.5%), did not work (75.0%), and were uninsured (73.8%). Roughly half had an elementary education, and only a minority had secondary or higher education (7%). Hypertension was the most prevalent chronic condition reported (44.0%), followed by diabetes (30.0%), high cholesterol (10.0%), and cardiovascular disease (7.5%). In regard to which health provider respondents trusted most in giving them information about medication, the majority chose physicians (74.1%) followed by pharmacists (20.3%). These results are summarized in table 1. Only 5.7 percent of participants chose other sources for information about medication. These individuals were excluded from the study's bivariate and multivariate analyses, for which the study sample numbered 717.

Table 1: Descriptive characteristics of the sample

	N	%
Age groups		
<50	238	31.3%
50-64	290	38.2%
65+	232	30.5%
Gender		
Female	460	60.5%
Male	300	39.5%
Marital Status		
Single	39	5.1%
Married	665	87.5%
Other	56	7.4%
Education		
Illiterate	185	24.3%
Elementary	385	50.7%
Intermediate/tech	138	18.2%
Second/university	52	6.8%
Employment status		
Doesn't work	578	76.1%
Work	182	23.9%
Insurance status		
Not insured	561	73.8%
Gov related	147	19.3%
Armed Forces	40	5.3%
Private	12	1.6%
Health Status		
DM	231	30.4%
Hypertension	335	44.1%
Cholesterol	79	10.4%
Cardiovascular	57	7.5%
Who do you trust the most regarding information about your medications		
Pharmacist	154	20.3%
MD	563	74.1%
Others*	43	5.7%

*respondents who reported trusting nurses, family, and friends or other sources for information were excluded from bivariate and multivariate analyses.

Table 2 illustrates that age, gender, marital status, employment, and insurance status all affected trust preference between pharmacists and physicians.

The younger age group (40-50 y) had a higher trust preference for pharmacists than their older counterparts (31.5% among 40-50 y, 18.8% among 50-64 y, and 14.6% among 65+years *p*<.001). Males were more likely to express a trust preference for pharmacists over physicians compared to females (29.3% vs 16.2% *p*<.001), as well as

unmarried respondents compared to those who were married (31.6% vs 21.9%, *p*=0.023). Additionally, those who were employed had higher levels of trust in pharmacists compared to those who were unemployed (39.2% vs. 15.7%, *p*<.001). Finally, respondents without insurance were more likely to report trust towards pharmacists than those with insurance plans (16.4% vs. 2.3% *p*=0.048). Table 2 shows the medication trust information (pharmacist or physician) by general socioeconomic characteristics.

Table 2: Trust preference (pharmacists vs. physician) by respondents' demographic characteristics (n=717)

	Most trust in				
	Pharmacist		MD		*p*-value
	N	%	N	%	
Gender					
Female	70	16.3%	360	83.7%	
Males	84	29.3%	203	70.7%	**<0.001**
Age group					
<50	70	31.5%	152	68.5%	
50-64	52	18.8%	224	81.2%	
65+	32	14.6%	187	85.4%	**<0.001**
Marital status					
Single	12	31.6%	26	68.4%	
Married	137	21.9%	488	78.1%	
Others	5	9.3%	49	90.7%	**0.028**
Educational level					
Illiterate	33	19.1%	140	80.9%	
Elementary	77	21.1%	288	78.9%	
Intermediate/tech	35	26.5%	97	73.5%	
Second/uni	9	19.1%	38	80.9%	0.430
Employment					
Doesn't work	85	15.7%	456	84.3%	
work	69	39.2%	107	60.8%	**<0.001**
Insured					
No	123	23.3%%	405	76.7%%	
Yes	31	16.4%	158	83.6%%	**0.048**

Table 3 illustrates that respondents who reported having any of the four chronic diseases listed in the survey (Cholesterol, Cardiovascular Disease, Diabetes, Hypertension) demonstrated less trust preference for pharmacists than for physicians. Specifically, respondents with high cholesterol were the least likely to trust their pharmacists (7.4% vs. 23.0% of those without, *p*<.003), followed by those reported to have cardiovascular diseases (9.3% vs. 22.5%, *p*<.023), diabetes (11.2% vs. 25.9%, *p*<.001), and hypertension (15.3% vs. 26.5%, *p*<.001). Additionally, respondents with a higher Body Mass Index (BMI) were less likely to trust pharmacists over physicians when compared to those with a lower BMI (15.9% for the obese group, 27.0% for the overweight group and 35.1% for the normal weight group, *p*<.001).

Table 3: Trust preference (pharmacists vs. physician) by respondents' health characteristics

	Most trust in				
	Pharmacist		MD		*p*-value
	N	%	N	%	
Reported having					
Diabetes					
NO	130	25.9%	372	74.1%	
YES	24	11.2%	191	88.8%	<0.001
Hypertension					
NO	105	26.5%	291	73.5%	
YES	49	15.3%	272	84.7%	<0.001
High Cholesterol					
NO	149	23.0%	500	77.0%	
YES	5	7.4%	63	92.6%	0.003
Cardiovascular					
NO	149	22.5%	514	77.5%	
YES	5	9.3%	49	90.7%	0.023
Weight group					
Normal	53	35.1%	98	64.9%	
Overweight	64	27.0%	173	73.0%	
Obese	34	15.9%	180	84.1%	<0.001

Table 4 shows that similar to chronic diseases, respondents who reported taking medications were less likely to report trust in pharmacists over physicians. Specifically, respondents taking antihyperglycemics were the least likely to trust their pharmacist compared to those who do not take these medications (9.0% vs. 24.6%, *p*<.001), followed by respondents who reported taking antihypertensives (10.1% vs. 26.1%, *p*<.001). Differences in trust preference observed among those taking antihyperlipidemic and antiplatelet medications were not statistically significant.

Conversely, table 5 shows that having a family member with a chronic disease fortifies a trust preference for pharmacists for the provision of medication information. This was most prominently observed among participants who reported having a family history of cardiovascular disease (56.8% vs. 19.6% of those without a family history of cardiovascular disease, *p*<.001), followed by a family history of cholesterol (43.3% vs. 20.5% without, *p*=.003), hypertension (30.3% vs. 16.9%, *p*<.001), and diabetes (28.7% vs. 18.9%, *p*=.005).

Table 4: Trust preference (pharmacists vs. physician) by respondents' medication use

	Most trust in				
	Pharmacist		MD		*p*-value
	N	%	N	%	
Antihyperglycemic					
NO	141	24.6%	432	75.4%	
YES	13	9.0%	131	91.0%	**<0.001**
Antihypertensive					
NO	133	26.1%	377	73.9%	
YES	21	10.1%	186	89.9%	**<0.001**
Antihyperlipidemic					
NO	151	21.9%	537	78.1%	
YES	3	10.3%	26	89.7%	0.136
Antiplatelet					
NO	148	22.1%	521	77.9%	
YES	6	12.5%	42	87.5%	0.117
Any of the above					
NO	126	28.8%	312	71.2%	
YES	28	10.0%	251	90.0%	**<0.001**

Table 5: Respondents most trust pick by family history

	Most trust in				
	Pharmacist		MD		*p*-value
Family history of:	N	%	N	%	
Diabetes					
NO	100	18.9%	429	81.1%	
YES	54	28.7%	134	71.3%	**0.005**
Hypertension					
NO	80	16.9%	393	83.1%	
YES	74	30.3%	170	69.7%	**<0.001**
Cholesterol					
NO	141	20.5%	546	79.5%	
YES	13	43.3%	17	56.7%	**0.003**
Cardiovascular					
NO	133	19.6%	547	80.4%	
YES	21	56.8%	16	43.2%	**<0.001**

All factors that were statistically significant at the bivariate level were included in the logistic regression, and only those that remained statistically significant in the model were retained (table 6). Males were twice as likely as females (OR=1.98, 95%CI 1.33-2.95, *p*=0.001) to prefer pharmacists over physicians as their source for information about medications. Reporting having cardiovascular disease was the only chronic disease that retained significance in the model, with respondents reporting the disease 66% less likely to trust pharmacists over physicians (OR=0.34, 95%CI 0.12-0.95, *p*=0.040). Likewise, respondents taking any of the 4 major classes of medications (antihyperglycemics, antihypertensive, antihyperlipidemic, and antiplatelets) were 59% less likely to trust pharmacists over physicians (OR=0.41 95%CI 0.25-0.67 *p*<.0010). However, having a family history of hypertension increased the likelihood of trusting pharmacists over physicians by 86% (R=1.86% 95%CI 1.23-2.82 *p*=0.019), whereas those with a family history of cardiovascular diseases were more than 3 times likely to trust pharmacists over physicians (OR=3.39, 95%CI 1.55-7.45 *p*=0.002). Finally, obese people were 54% less likely than normal-weight people (OR=0.46, 95%CI 0.25-0.84, *p*=0.010) to trust pharmacists over physicians with drug information.

Table 6: Multivariate logistic regression for trust preference in pharmacist over a medical doctor

Determinants of trust in pharmacist over MD with medication info	OR	95% CI	*p*-value
Gender			
Female (ref)	1.00		
Male	1.98	(1.33–2.95)	**0.001**
Reported having Cardiovascular D.			
NO (ref)	1.00		
YES	0.34	(0.12–0.95)	**0.040**
Taking Medications*			
NO (ref)	1.00		
YES	0.41	(0.25–0.67)	**<0.001**
Family History of:			
Hypertension			
NO (ref)	1.00		
YES	1.86	(1.23–2.82)	**0.019**
Cardiovascular Disease			
NO (ref)	1.00		
YES	3.39	(1.55–7.45)	**0.002**
Weight group			
Normal (ref)	1.00		
Overweigh	0.67	(0.42–1.08)	0.099
Obese	0.46	(0.25–0.84)	**0.010**

*Any of anti-Hyperlipidemic, anti-hyperglycemic, antihypertensive, and antiplatelet

DISCUSSION

Trust is a crucial characteristic of the patient-health professional relationship. Indeed, patients who report low levels of trust in their physicians were found to be less satisfied with their therapy, less likely to follow their physicians' advice, and showed less symptomatic improvement after weeks of treatment [13]. Overall, participants of this study were more likely to trust physicians over pharmacists when providing drug information. This was consistent with findings from Gidman *et al.* [10]who found that public trust in physicians is greater than public trust in pharmacists. Physicians create a solid relationship with their patients through communication and interpersonal skills including therapeutic guidance and counseling tips [14]. However, other studies have suggested that patients tend to trust their pharmacists more with drug information, approaching them prior to contacting their physicians with cost or adherence concerns [15]. Likewise, pharmacists can play an important role in safe and efficient use of medication, especially for patients with chronic diseases [16, 17], such as the use of insulin pen in elderly diabetic patients [18].

This study identified specific factors that significantly impacted trust preference. For example, older adults, patients who had one or more chronic diseases and thus took prescription medications for hypertension, hyperlipidemia, diabetes mellitus and/or cardiovascular disease, and individuals who were overweight or obese, trusted their physician more than their pharmacist with drug information. This was consistent with findings from Donohue *et al.* who found that 79.9% of adults aged 65 and above trust physicians to provide information about drug effectiveness, compared to 66.4% reporting trusting pharmacists [7]. One reason could be the frequent visit chronically ill patients pay to the physician clinic. Østbye *et al.* stated that 828 h per year, or 3.5 h a day, were required to provide care for chronic diseases. Furthermore, according to the Joint National Commission 7 guidelines, patients with uncontrolled hypertension are recommended to schedule monthly visits with their physicians [19]. Individuals with high BMI are more likely to have chronic conditions associated with obesity [20], and this study found that obese individuals were more likely than those of normal weight to express a trust preference for physicians as their source of medication information. In fact, older adults, patients with chronic disease(s), taking chronic medications, and overweight or obese individuals need more intense monitoring and regular visits with their physician. Therefore, they will develop a close relationship with their physician, ultimately leading to higher levels of trust [21].

The previous result seemingly contrasts with another finding from this study. Individuals with a family history of hypertension and cardiovascular disease but who are not personally affected by those diseases express higher trust preference for pharmacists. According to the Association for Psychological Science, perception regarding an illness emerges out of beliefs related to its cause, duration, impact on self and family members, and how it can be controlled or cured [22]. So, it is possible that people see others' disease as less severe compared to when the disease affects them directly; this is why they prefer to stick to the pharmacist rather than the physician when they need drug information.

In addition, patients with chronic disease(s) need a continuous supply of medication(s). Although these patients have routine contact with physicians, family members may obtain their medications, and in the process have frequent contact with pharmacists [23, 24], therefore developing a strong relationship that leads to trusting the pharmacist over the physician when it comes to drug information.

Furthermore, based on the multivariate analysis, the study found that males trust pharmacists more than physicians to provide drug information when compared to females. This could be due to findings that males tend to delay seeking help when becoming ill and exhibit "traditional masculine behaviors" of independence and assertiveness [25]. In general, males are less likely to admit experiencing medical problems and avoid seeking help from their doctor [25, 26]. This avoidance behavior may explain why males are more likely to trust pharmacists over physicians.

LIMITATIONS

The present study has a number of limitations. Firstly, this is a cross-sectional study where results are only generalizable to rural population adults above 40 y of age, as data collection took place among rural areas of Lebanon and excluded individuals below 40 y of age.

Secondly, by giving respondents a forced-choice question between only pharmacists and physicians, the findings from this study only pertain to trust in pharmacists when delivering medication information compared to physicians, and not irrespective of physicians. The low percentage of respondents who express a trust preference for pharmacists does not imply low trust in pharmacists.

Finally, there wasn't any tool used to measure trust within healthcare professionals such as the Trust in Physician Scale [27, 28], the Wake Forest Physician Trust Scale [13], the TRUST-Ph scale, or the 3-dimensional scale of Benevolence, Technical Competence, and Communication [29].

As this study is a preliminary analysis based on a previous data-set, future research should expand the sample size to include younger age groups and those living in urban areas. Furthermore, examining the underlying reasons as to why individuals trust pharmacists over physicians with medication information could further explain the differences seen between various groups (males vs. females, those taking medication vs. those who are not, etc.).

CONCLUSION

To conclude, this study offers insights regarding factors that influence trust preference for pharmacists, compared to physicians, for receiving medication information. ...While the majority of participants were more likely to trust physicians over pharmacists, demographic variables, health status, medication, and family history were shown to significantly affect these levels of trust. In particular, a family history of previous diseases was found to most significantly reverse this trend. These findings of this study could be of use in facilitating and ameliorating patient-pharmacist trust towards receiving medication information. Education about pharmacists' role and expertise targeted towards the general public as well as to physicians is highly recommended.

LIST OF ABBREVIATIONS

BMI-Body Mass Index, OR-Odds Ratio, SE-Standard Error, CI-Confidence Interval, IDRC-International Development Research Center.

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Not Applicable.

CONSENT FOR PUBLICATION

All participants provided written informed consent before participating in the study, which included consent to publish aggregate data which assures the anonymity of participants.

AUTHORS CONTRIBUTIONS

HD formulated the research questions, provided supported in managing data collection and data entry, carried out the data analysis, participated in results interpretation, supervised the literature review, and participated in writing the manuscript. MM participated in results interpretation, carried out a literature review, and participated in writing the manuscript. JK participated in results interpretation, carried out part of the literature review, and participated in writing the introduction. SS conceptualized the design, managed the data collection, and participated in writing the manuscript. MS participated in analyzing and writing results. All authors reviewed the final version.

CONFLICT OF INTERESTS

None of the authors of this paper have a financial or personal relationship with other people or organizations that could inappropriately influence or bias the content of the paper. On behalf of all authors, the corresponding author states that there is no conflict of interest.

REFERENCES

1. Guirguis LM, Alghurair SA, Simpson SH. What elements of the patient-pharmacist relationship are associated with patient satisfaction? Patient Prefer Adherence 2012;6:663-76.
2. Gilson L. Trust and the development of health care as a social institution. Soc Sci Med 2003;56:1453-68.
3. Goold SD. Trust, distrust and trustworthiness. J Gen Intern Med 2002;17:79-81.
4. Weitzl W. Review of literature and theoretical background. Measuring Electronic Word-of-Mouth Effectiveness; 2017. p. 19–94.
5. Worley MM, Schommer JC, Brown LM, Hadsall RS, Ranelli PL, Stratton TP, *et al*. Pharmacists' and patients' roles in the pharmacist-patient relationship: Are pharmacists and patients reading from the same relationship script?. Res Soc Adm Pharm 2007;3:47-69.
6. Schommer JC. Patients' expectations and knowledge of patient counseling services that are available from pharmacists. Am J Pharm Educ 1997;61:402-6.
7. Donohue JM, Huskamp HA, Wilson IB, Weissman J. Whom do older adults trust most to provide information about prescription drugs? Am J Geriatr Pharmacother 2009;7:105-16.
8. El-Hajj MS, Mansoor H, Salem S. Public's attitudes towards community pharmacy in qatar: a pilot study. Patient Prefer Adherence 2011;5:405-22.
9. Kao AC, Green DC, Davis NA, Koplan JP, Cleary PD. Patients' trust in their physicians: effects of choice, continuity, and payment method. J Gen Intern Med 1998;13:681-6.
10. Gidman W, Ward P, McGregor L. Understanding public trust in services provided by community pharmacists relative to those provided by general practitioners: a qualitative study. Br Med J Open 2012;2:e000939. Doi:10.1136/bmjopen-2012-000939.
11. Saleh S, Alameddine M, Farah A, El Arnaout N, Dimassi H, Muntaner C, *et al*. eHealth as a facilitator of equitable access to primary healthcare: the case of caring for non-communicable diseases in rural and refugee settings in lebanon. Int J Public Health 2018;63:577-88.
12. Saleh S, Farah A, El Arnaout N, Dimassi H, El Morr C, Muntaner C, *et al*. mHealth use for non-communicable diseases care in primary health: patients' perspective from rural settings and refugee camps. J Public Health (Oxf) 2018;40 Suppl 2:ii52–ii63.
13. Bachinger SM, Kolk AM, Smets EMA. Patients' trust in their physician-psychometric properties of the dutch version of the "Wake Forest Physician Trust Scale". Patient Educ Couns 2009;76:126-31.
14. Ha JF, Longnecker N. Doctor-patient communication: a review. Ochsner J 2010;10:38-43.
15. Tarn DM, Paterniti DA, Wenger NS, Williams BR, Chewning BA. Older patient, physician and pharmacist perspectives about community pharmacists' roles. Int J Pharm Pract 2012;20:285-93.
16. Achankunju B, Thomas J, Alexander R, Varughese SA, Sam GK. Assessment and evaluation on knowledge, attitude, and practice towards medication therapy management among the community of davangere city. Asian J Pharm Clin Res 2017;10:380-3.
17. Sauriasari R, Sakti RM. Impact of a pharmacist-led patient education initiative on glycemic control of patients with type 2 diabetes mellitus: a single-center experience in West Jakarta, Indonesia. Int J Appl Pharm 2018;10:252-6.
18. Forough AS, Esfahani PR. Impact of pharmacist intervention on appropriate insulin pen use in older patients with type 2 diabetes mellitus in a rural area in Iran. J Res Pharm Pract 2017;6:114-9.
19. Østbye T, Yarnall KS, Krause KM, Pollak KI, Gradison M, Michener JL. Is there time for management of patients with chronic diseases in primary care? Ann Fam Med 2005;3:209–14.
20. Sullivan PW, Morrato EH, Ghushchyan V, Wyatt HR, Hill JO. Obesity, inactivity, and the prevalence of diabetes and diabetes-related cardiovascular comorbidities in the U. S., 2000-2002. Diabetes Care 2005;28:1599-603.
21. Wrede Sach J, Voigt I, Diederichs Egidi H, Hummers Pradier E, Dierks ML, Junius Walker U. Decision-making of older patients in the context of the doctor-patient relationship: a typology ranging from "self-determined" to "doctor-trusting" patients. Int J Family Med 2013;2013:478498.
22. Mind Over Matter: Patients' Perceptions of Illness Make a Difference [Internet]. Association for Psychological Science. Available from: https://www.psychologicalscience.org/news/releases/mind-over-matter-patients-perceptions-of-illness-make-a-difference.html [Last accessed on 05 Sep 2019].
23. Whitty JA, Kendall E, Sav A, Kelly F, McMillan SS, King MA, *et al*. Preferences for the delivery of community pharmacy services to help manage chronic conditions. Res Social Adm Pharm 2015;11:197-215.
24. Mahmudah RL, Ikawati Z, Wahyono D. A qualitative study of perspectives, expectations and needs of education in chronic obstructive pulmonary disease (COPD). Int J Curr Pharm Res 2017;9:32-5.
25. Galdas P, Cheater F, Marshall P. Men and health help-seeking behaviour: a literature review. J Adv Nurs 2005;49:616-23.
26. Ammanath AB, SR, Kg R, Mattumal S, Ug U. Assessment of correlation in gender and age with lipoprotein levels in hyperlipidemia patients. Asian J Pharm Clin Res 2016;9:197-9.
27. Leisen B, Hyman MR. An Improved scale for assessing patients' trust in their physician. Health Mark Q 2001;19:23-42.
28. Thom DH, Ribisl KM, Stewart AL, Luke DA. Further validation and reliability testing of the trust in physician scale. Med Care 1999;37:510-7.
29. Ngorsuraches S, Lerkiatbundit S, Li SC, Treesak C, Sirithorn R, Korwiwattanakarn M. Development and validation of the patient trust in community pharmacists (TRUST-Ph) scale: results from a study conducted in Thailand. Res Social Adm Pharm 2008;4:272-83.