

**QUALITY AND FORMS OF MEDICATION INFORMATION
PROVIDED TO PATIENTS BY COMMUNITY PHARMACISTS IN
KHARTOUM NORTH, TOWN CENTER, SUDAN.**

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ABSTRACT

Background: Up to the researchers' knowledge, this study is the first of its kind in Sudan. To use their medications safely and appropriately, patients need up-dated, comprehensive, balanced and understandable medication information. Pharmacists, as medications specialists, are expected to be the main providers of that information. **Objective:** To evaluate the: the quality and forms of medication information provided by Sudanese community pharmacists to patients. **Method:** A structured and pre-piloted questionnaire of (24) closed ended questions, was handed over by one of the researchers, to (130) respondent community pharmacists. **Results:** The majority of the

respondents were young (<35 years), females (65.4%). A majority (92%) of them considered the provision of medication information to patients, a professional responsibility. Medication information provided was (88.2%) and 52.78% for benefits and risk attributes, respectively. The majority of respondents provided medication information in verbal form (61.5%) while only (31.5%) provided a written form. Majority of respondents (59.2%) did use to advise patients to read the medications' leaflets. There was a significant correlation between respondents' gender and their provision of information about medications' doses, indications and administration (P 0.002, 0.044 and 0.002), respectively. There was also a significant correlation between respondents' years of experiences and expression of side effect style, patient satisfaction with provided medication information and the source of medication information (P 0.046, 0.001 and 0.05) respectively. **Conclusion:** Respondents' provision of medication information to patient was just fair, though it was of unbalanced in forms and contents.

KEYWORDS: Medication, information, forms, provision, patients, community pharmacists, Sudan.

INTRODUCTION

To use their medications safely and appropriately, patients need understandable, useful, satisfactory and balanced medication information from health providers' team members, especially the pharmacists. Provision of this essentially and highly needed medication information to patients, is one of pharmacists' professional responsibilities and even have a great contribution to the provision of primary health care, especially in developing countries.^[1,2] Though patients need and deserve as much as possible of medications' information, yet, according to Jin *et al.*, 2008; the level of medication information and knowledge provided by health care professionals to patients is not always adequate.^[3, 4]

Many researchers reported that, patients describe the level of verbal information provided by physicians and / or pharmacists inadequate and sometimes, even, not convincing.^[5-7] Medication information is usually provided to patients in verbal, written and /or visual forms. The verbal message alone can easily be forgotten, misunderstood or not understood.^[8] It also, is criticized for leaving the knowledge and authority in the hands of the care giver, and does not help the patient to refer to information, and he/she may even forget it.^[9] The amount of verbal medication information correctly recalled by patients is strikingly small and half of it is incorrect.^[10] Age, anxiety, stress, disease state and the perceived importance of the information are important determinants in the process of recalling that information.^[11] Accordingly, combining written and verbal forms of information, helps reinforcing both, and provides an ongoing reference to patients. Patients themselves prefer a combination of the verbal and written forms of medication information.^[12,13]

According to Shrank *et al.*, 2007 and Lee *et al.*, 2007; the basic medications information, verbal and written (mainly the medications' package inserts, patients' leaflets),^[14,15] needed by patient is mainly centered on.

The name of the medication (trade and generic), the purpose for taking the medication (indication(s), how much to take each time? How often to take the medication? For how long to take the medication? Best way to take the medication? Which drugs or food nutrients to avoid using concomitantly? Expect side effects, their magnitude, their seriousness and how to cope with? Adverse drug reactions, allergies, missed doses, in-home storage, safe disposal of

unused medication, precautions. Warnings, contraindications, whether the prescription can be refilled, use in special patients' population (e.g. Pregnancy – compromised kidney, neonates, infants and children). In brief, it has to be accurate, up-to-date, comprehensive, balanced, understandable and fitting the individual patient's needs.^[16]

The very important and casting level of patient's understandability and comprehension of the verbal medication information message, is subject to quite numerous factors such as: the patient's health literacy, psychological status, age, number of medicines prescribed, language barriers, terminology level used, type of message and communication skills of provider of the verbal message.^[17] From the other hand, the written medication information, which is mainly represented by the medication package inserts, is criticized for being lengthy, too much detailed, contains much technical terms, written in small font size thus compromising its readability and their majority are written in English, only, which is foreign to Sudanese citizens.^[18] Though Arabic is the main and official language of Sudan and it forms the main communication medium for the different Sudanese ethnic groups and tribes many of which speak other local languages, yet, none of the studied package inserts was written in Arabic only.^[19] Some researchers advised that written medications information in the patients' own native language(s), had been linked to improvement in the health outcomes.^[20-22] But, many studies however, reported the opposite.^[23,24] Moreover, in developing countries, the high general illiteracy levels and/or low health literacy, represent real barriers to patients' understanding and usage of both the verbal and written forms of medication information.^[25, 26] Medication information provision should be tailored to individual patient's needs; and the counseling pharmacist should consider both the general literacy and health literacy levels of the counseled patient.^[27]

Studies in Sudan, and other African countries; reported highly inadequate and poor quantity of medication information, as the dispensing time, itself, is usually, awkwardly short (45 seconds).^[28-31] Ideally patients should receive information about medications from the physicians and pharmacists.^[14]

In fact patients themselves prefer that.^[13] The quality of medication information provided to patients is reported to be poor and less satisfying. Some researchers reported poor satisfaction of patients with the medication information provided by pharmacists.^[32] Others, from the US, Portugal, Canada, Saudi Arabia and Malta, however, reported a high level of satisfaction, possibly because the pharmaceutical care style of pharmacy practice is dominant.^[33-37] One

Sudanese study reported that only 57.8% of patients were provided with medication by pharmacists^[38] Since the level of patient's provision and satisfaction with the medication information provided by the community pharmacists, influences patient's adherence to the prescribed drug regimen which might eventually impact the targeted therapeutic outcome, this study aimed to evaluate the: quality and form(s) of medication information provided by Sudanese community pharmacists to their patients.

RESULTS

The overall response rate was excellent (100%).

Results are expressed as frequencies and percentages.

Table 1: Respondent pharmacists' demographic characteristics.

Age groups		
	Frequency	Valid Percent
21-25	60	46.2
26-30	49	37.7
31-35	15	11.5
> 35	06	4.6
Total	130	100.0
Gender		
MALE	45	34.6
FEMALE	85	65.4
Total	130	100.0
Practical Experience. Groups		
< 1 YR	17	13.1
1-5 YRS	89	68.5
6-10 YRS	16	12.3
> 10 YRS	8	6.2
Total	130	100.0

Most of the respondents (86.2%) had their undergraduate studies in Sudan whereas 13.8% had it abroad.

Table 2: The respondent point of view about the importance of providing medication information to patients.

	Frequency	Valid Percent
YES	126	96.9
NO	4	3.1
Total	130	100.0

Moreover, 92% of the respondent pharmacists considered the provision of medication information to patient as a professional responsibility of pharmacists, while (7.7%) said "did not.

Table 3: The form in which the respondent pharmacists' used to provide medication information to patients.

	Frequency	Valid Percent
VERBAL	80	61.5
WRITTEN	41	31.5
VISUAL	9	6.9
Total	130	100.0

Table 4: Components of Medication information particulars considered, by respondent pharmacists important to patients.

Particulars of considered information important to the patients	Frequency	YES. % age.	NO. % age.
Trade name of medication.	71	54.6	45.4
Generic name.	62	47.7	52.3
Indications.	112	86.2	13.8
Dose.	125	96.6	3.4
Dosage form.	101	77.7	22.3
How to use?	120	92.3	7.7
Contraindications	83	63.8	36.2
Precautions	84	64.6	35.4
Food-Drug interactions	88	67.7	32.3
Drug-Drug interactions	73	56.2	43.8
Storage conditions	100	76.9	23.1
Importance of compliance	82	63.1	36.9
How to react when she/he	60	46.2	53.8 missed doses
How to react in case of	51	39.2	60.8 over-dose
How to react in case of side	66	50.8	49.2 effects
What to do with left-over	44	33.8	66.2 medications

Table 5: The medications' dosing frequencies (whether times per day or hours per day) provided by respondents to patients.

	Frequency	Valid Percent
Times per day	36	27.7
In hours intervals	94	72.3
Total	130	100.0

Almost two third of the respondents? (60.8%) did not inform patients of the type(s) and frequency of side effects, while? (33.1%) mentioned it descriptively, and only? (6.2%) mentioned it numerically.

Sixty six (51%) of the respondent pharmacists were aware of Sudanese food content while sixty four (49%) were not. Regarding dispensing time, it was in average 10 minutes.

Table 6: Respondent Pharmacist response when asked about whether all patients were satisfied with the medication information, they provide.

	Frequency	Valid Percent
YES	54	41.5
NO	76	58.5
Total	130	100.0

Eighty (61.5%) of the respondent pharmacists asserted that not all patients accept to be provided with medication information, while 50 (38.5%) respondents said all patient accept to be provided with medication information.

When asked about the language they usually use when communicating with patients, 56.2% of the respondent pharmacists said according to patients' language while 43.8% use only Sudanese Arabic language.

Ninety seven (74.6%) of the respondents asserted that they usually use paraphrasing when they feel that patients did not understand the verbal message, while 25.4% were not used to using it.

Table 7: Reaction of the respondent pharmacists when patients do not understand the medication information provided.

	Frequency	Valid Percent
Paraphrase	45	34.6
Neglect	5	3.8
Use visual or written aids.	80	61.5
Total	130	100.0

Seventy three (56.2%) of the respondent pharmacists confirmed that they do not usually provide the same detailed medication information when dispensing new prescription, refills or OTC, while (43.8%) said they consistently provide the same details.

Table 8: The respondent pharmacists' attitude toward prescription errors.

	Frequency	Valid Percent
Correct it immediately	40	30.8
Call the prescriber	33	25.4
Dispense as it is	4	3.1
tell the patient about the error and advise to contact the prescriber	53	40.8
Total	130	100.0

When the respondents were asked whether they provide their contact address to their patients, the response of (67.7 %) of them was negative, while (32.3%) asserted that, they usually do.

One hundred and eleven (85.4%) of the respondent pharmacists' did not use to refer to the prescribing doctor before substituting the prescribed brands. While a minority (14.6%) used to do.

Table 9: Respondent pharmacists' answers about whether they secure agreement of the patients before substituting the prescribed branded product with a generic.

	Frequency	Valid Percent
YES	109	83.8
NO	21	16.2
Total	130	100.0

Table 10: Respondent community pharmacists' sources of medication information (guided question).

	Frequency	Valid Percent
Books and journals	57	43.8
Internet	36	27.7
Colleagues	17	13.1
Medical representatives	12	9.2
Drug information centers	8	6.2
Total	130	100.0

When asked whether they know that some excipients' can harm particular patients groups, (76.9%) of the respondent pharmacists said they know that some excipient can be harmful to some patient while (23.1%) of them confirmed that they do not know. However, only (39.2%) of the respondents used to check these excipient's and the majority (60.8%) do not usually check them.

The majority (63.1%) of the respondents used to ask the patients about their medications' history, whereas (36.9%) usually do not. Moreover, 80.8% of the respondent pharmacists used to ask the patients about their complaints while (19.2%) usually do not.

Table 11: Respondent pharmacists' response about advising patients to read medications' package insert, (leaflet) before taking their medications.

	Frequency	Valid Percent
YES	53	40.8
NO	77	59.2
Total	130	100.0

If No, why?! This question was asked to pharmacists and their answers were revolving around the following statements:

- Some patients are scared of the possible side effects.
 - Language barriers, as most of medications' leaflets were written in English scientific terms (jargon), so ordinary lay citizens may not understand it.
 - They provide the patients with the needed information, so no need for reading the leaflets.
- There is a significant correlation between the respondents' years of experience and place of undergraduate studies, where it was found that those who had experience more than 10 years mostly had undergraduate studies abroad, while those with less than 1 year experience had it in Sudan. ($P = 0.001$).

Table 12: Years of experience *Do you express the frequency of side effects to patients, descriptively (eg, very common, common or rare) or numerically (as percentage e.g 10% of population).

			Do you express the frequency of side effects descriptively (very common, common or rare) or numerically (as percentage e.g. 10% of population)			Total
			Descriptively	Numerically	You do not mention	
Years of experience	<	Count	9	1	7	17
	1 yr	% within years of experience	52.9%	5.9%	41.2%	100.0%
		% within expression of side effects' frequency	20.9%	12.5%	8.9%	13.1%
	1-5 yrs	Count	21	7	61	89
		% within years of experience	23.6%	7.9%	68.5%	100.0%
		% within expression of side effects' Frequency	48.8%	87.5%	77.2%	68.5%
	6- 10 yrs	Count	8	0	8	16
		% within years of experience	50.0%	.0%	50.0%	100.0%
		% within expression of side effects' Frequency	18.6%	.0%	10.1%	12.3%
	>	Count	5	0	3	8
10 yrs	% within years of experience	62.5%	.0%	37.5%	100.0%	
	% within expression of side effects' Frequency	11.6%	.0%	3.8%	6.2%	
Total	Count	43	8	79	130	
	% within years of experience	33.1%	6.2%	60.8%	100.0%	
	% within expression of side effects' frequency	100.0%	100.0%	100.0%	100.0%	

($P = 0.046$).

Table13: Years of experience* Are all patients satisfied with medication information provided by community pharmacists.

			Do all patients agree with provided medication information		Total
			YES	NO	
Years of experience	< 1 YR	Count	5	12	
		% within years of experience	29.4%	70.6%	100.0%
		% within patients' agreement with provided information	9.3%	15.8%	13.1%
	1-5 YRS	Count	31	58	89
		% within years of experience	34.8%	65.2%	100.0%
		% within patients' agreement with provided information	57.4%	76.3%	68.5%
	6-10 YRS	Count	10	6	16
		% within years of experience	62.5%	37.5%	100.0%
		% within patients' agreement with provided information	18.5%	7.9%	12.3%
	> 10 YRS	Count	8	0	8
		% within years of experience	100.0%	.0%	100.0%
		% within patients' agreement with provided information	14.8%	.0%	6.2%
Total	Count	54	76	130	
	% within years of experience	41.5%	58.5%	100.0%	
	% within patients' agreement with provided information	100.0%	100.0%	100.0%	

There is a significant correlation ($P = 0.001$) between years of experience of the respondents and the satisfaction of patients with the medication information provided, it is found that an increase in respondents' years of experience is correlated to an increase in patients' satisfaction.

Table 14 (A): Years of experience* What are the sources of medication information you depend on (in order of practical importance.

			what are the sources of medication information you depend on (in order of practical importance					total
			books and journals	colleagues	Medical representatives	internet	Drug information centers	
Year s of Exper ience	< 1 yr	count	6	6	0	5	0	17
		% within years of experience	35.3%	35.3%	.0%	29.4%	.0%	100.0%
		% within source of medication information	10.5%	35.3%	.0%	13.9%	.0%	13.1%

	1-5 yrs	Count	35	9	12	26	7	89
		% within years of experience	39.3%	10.1%	13.5%	29.2%	7.9%	100.0%
		% within source of Medication information	61.4%	52.9%	100.0%	72.2%	87.5%	68.5%
	6-10 yrs	Count	9	2	0	4	1	16
		% within years of experience	56.2%	12.5%	.0%	25.0%	6.2%	100.0%
		% within source of Medication information	15.8%	11.8%	.0%	11.1%	12.5%	12.3%
		% within the source of medication information	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 14 (A): Years of experience* What are the sources of medication information you depend on (in order of practical importance).

		what are the sources of medication information you depend on (in order of practical importance)					total
		books and journals	colleagues	Medical representatives	internet	Drug information centres	
> 10 yrs	Count	7	0	0	1	0	8
	% within years of experience	87.5%	.0%	.0%	12.5%	.0%	100.0%
	% within source of medication information	12.3%	.0%	.0%	2.8%	.0%	6.2%
total	Count	57	17	12	36	8	130
	% within years of experience	43.8%	13.1%	9.2%	27.7%	6.2%	100.0%
	% within the source of medication information	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

A significant correlation between the years of experience of the respondents and their source of medication information ($P < 0.05$).

Table 15: Respondents' gender * Place of undergraduate studies.

		Place of undergraduate studies		Total	
		Sudan	Abroad		
Gender	MALE	Count	35	10	45
		% within Gender	77.8%	22.2%	100.0%
		% within Place of undergraduate studies	31.2%	55.6%	34.6%
	FEMALE	Count	77	8	85
		% within Gender	90.6%	9.4%	100.0%
		% within Place of undergraduate studies	68.8%	44.4%	65.4%
Total	Count	112	18	130	
	% within Gender	86.2%	13.8%	100.0%	
	% within Place of undergraduate studies	100.0%	100.0%	100.0%	

Shows significant correlation between respondents' gender and their place of undergraduate studies ($P = 0.044$).

Table 16: Respondents' gender* Provision of information about medication indications.

		indications		Total	
		YES	NO		
Gender	MALE	Count	35	10	45
		% within Gender	77.8%	22.2%	100.0%
		% within indications	31.2%	55.6%	34.6%
	FEMALE	Count	77	8	85
		% within Gender	90.6%	9.4%	100.0%
		% within indications	68.8%	44.4%	65.4%
Total		Count	112	18	130
		% within Gender	86.2%	13.8%	100.0%
		% within indications	100.0%	100.0%	100.0%

There was a significant correlation between respondents' gender and the provision of information about medication indications ($P = 0.044$).

Table 17: Respondents' gender * Medication administration instructions.

		Administration		Total	
		YES	NO		
Gender	MALE	Count	37	8	45
		% within Gender	82.2%	17.8%	100.0%
		% within Administration	30.8%	80.0%	34.6%
	FEMALE	Count	83	2	85
		% within Gender	97.6%	2.4%	100.0%
		% within Administration	69.2%	20.0%	65.4%
Total		Count	120	10	130
		% within Gender	92.3%	7.7%	100.0%

Table 18: Respondents' gender* Provision of medication information to patients regarding the importance of compliance.

		Importance of compliance		Total	
		YES	NO		
Gender	MALE	Count	22	23	45
		% within Gender	48.9%	51.1%	100.0%
		% within Importance of compliance	26.8%	47.9%	34.6%
	FEMALE	Count	60	25	85
		% within Gender	70.6%	29.4%	100.0%
		% within Importance of compliance	73.2%	52.1%	65.4%
Total		Count	82	48	130
		% within Gender	63.1%	36.9%	100.0%
		% within Importance of compliance	100.0%	100.0%	100.0%

Correlation of respondents' gender and their provision of information about the importance of compliance, ($P = 0.015$).

Table 19: Respondents' gender *Do you explain the medications' dosing in terms of times per day (Once daily, twice daily Etc) or use hours (e.g Every 6 hours)

			Do you explain the medications' dosing in terms of times per day (once daily, twice daily Etc) or use hours (e.g every 6 hours)		Total
			Times per day	In hours intervals	
Gender	Male	Count	20	25	45
		% within gender	44.4%	55.6%	100.0%
		% within do you explain the medications' dosing in terms of times per day or use hours	55.6%	26.6%	34.6%
	Female	Count	16	69	85
		% within gender	18.8%	81.2%	100.0%
Total		% within do you explain the medications' dosing in terms of times per day or use hours	44.4%	73.4%	65.4%
		Count	36	94	130
		% within gender	27.7%	72.3%	100.0%
		% within do you explain the medications' dosing in terms of times per day or use hours	100.0%	100.0%	100.0%

Correlation between participants' gender and expression of dose in daily or hourly frequencies was significant ($P = 0.002$).

DISCUSSION

The demographic characteristics of the respondents (table 1) shows a majority 109 (83.9%) of young respondents population, average age (25.5 years), and a majority (65.4%) of females. According to the Federal Ministry of Health, 2014; females are a majority (55%) among the registered Sudanese pharmacists.^[39] The period from 2004-2014 witnessed the graduation of 10665(74.84%) of the total number of the registered pharmacists. That may be referred to the huge increase in the number of registered pharmacists (2004-2014), could be attributed to the late very big(20)increase in the number of pharmacy colleges, their easy admission standards, bigger students intake, the economical options, and the convenience which is more endorsed by the majority 112(86.2%) of participants, who had their undergraduate studies in Sudan.^[40]

Ninety seven 97 (74.6%) of the respondents believed that it was important to provide patients

with medication information (table 2) and 119(92%) of them felt that it is a basic professional responsibility of the pharmacists. This reflects a high level of respondents' awareness of their professional responsibilities. Eighty (61.5%) of the total respondents used to provide medication information to patients in verbal form (prone to oblivion), while 41 (31.5%) provided it in written form and 9(7%) in visual form (in aratio, 6:3:1) respectively. (table3).^[41,42] Many researchers asserted that, to enhance recall and understanding and increase patients' knowledge about their medications the verbal information or message should be supported by written information or visual material, as patients themselves prefer a combination of verbal and written medicines information. Patients usually prefer a combination of both the verbal and written form.^[43,13]

A barelymarginal majority 66(51.15%) of the respondents agreed to the importance of providing patients with the medication's trade and generic names, first. Both are of top importance for patients to know the names of their medications, as both are the first and most important identificationasked aboutin medication history reporting. This is matching to the findings of Neoh et al., 2010.^[44] The components of the medication information particulars provided to the patients by the respondent pharmacist were as shown in table 4. Thefrequencies of the particulars were higher than whatShah and Chewning, 2007; reported.^[45] As per the results shown in table 4, the respondents provided patients with inadequate and imbalanced medication information in contents and forms. while the average percentage for provision for those particulars of medication benefit was 114(88.2%) the average percentage for the provision forthe medication risks was68(52.78%). This reflects an imbalanced medication information, which is typical of pharmaceutical industry promotional style and effect.^[46,47] The safe disposal of left-over medications is a big public health problem, world-wide^[48] Yet, it is highly neglected by the respondent pharmacists, as only 44(33.8%) of them provided patients with advice about it, though one Sudanese and many other studies pointed to its mounting prevalence.^[49-51] Guidelines for the safe disposal of unwanted pharmaceutical wastes were established in Sudan by Federal Pharmacy and Poisons Board in Directorate General for Drug Inspection and Statistic in 2008, which is adopted from WHO guidelines for the safe disposal of unwanted pharmaceuticals in and after emergencies 1999. But it seems that the respondent Sudanese community pharmacists are not much aware of the seriousness of the problem and are not aware of the Sudanese guidelines in this respect. Most of therespondent pharmacistsstated that, some patients are scared of the possible side effects, so they prefer to avoid mentioning any information that might

intimidate patients and accordingly, might possibly affect their adherence to the drug regimen.^[52] This is unfair to patients, as it's the right of the patients to know all the information regarding their medications and the available alternatives, as well. Sixty one percent 79 (61%) of the respondent did not mention the frequency of occurrence of side effects while 43(33%) used to mention it in details. Only (6%) used to mention the occurrence numerically (1%, 2%, 5%, 10%. etc). Many researchers, reported that when the side effects are mentioned (qualitatively) descriptively (rare, common etc), patients might overestimate the numerical rate of those descriptor terms, and consequently anticipate a higher level of harm by 45% to 60% more than what actually they were which might, accordingly, lead to more patients' anxiety and intimidation, which may compromise patients adherence, greatly.^[53,54] shown in table 5, 35(27.7%) of the respondent said they mention dosing frequencies in terms of times per day while the majority 94(72.3%) used to express it in hours per day. From the researchers' point of view, the pharmacist should mention the dose frequency in the term most conducive to the individual patient understandability, considering the levels of both the prevailing general illiteracy and low health literacy levels. He/she shall make sure that the patient really understood the message. Paraphrasing is most recommended.^[25] Fifty one percent 66 (51%) of the respondents were aware of Sudanese food and its nutrients' contents, while 64(49%) were not. This was an expected result, as Sudan is multi-cultural country with diverse eating habits that make it hard to be aware of the content of different food used. Moreover, food nutrients contents are rarely taught in Sudanese schools of pharmacy, despite its importance.^[55] Regarding the dispensing time in Sudanese pharmacies, it was found to be 10 minutes, in average, which is approximately more than ten folds of what was reported by other researchers from Africa and Sudan.^[28,29,31]

As shown in Table 6, the respondent pharmacists stated that the majority 76(58.5%) of their patients were not satisfied with the medication information they provided, while 54 (41.5%) were satisfied.^[32] This is an expected result, because patients' comprehension and satisfaction with the medication information, differs from each other, as they mostly have different needs, and also some pharmacists need further education about counseling skills. Ideally medication information provision has to be tailored to the needs and level of comprehension of each individual patients.^[56,57] A majority 81(62.3%) of the respondent pharmacists reported that some patients don't accept to be provided with medication information, while 49(37.7%) asserted that all patients do. That refusal of pharmacists'

counseling could be referred to a variety of causes.

- Some patients especially those after refills, may feel that they do not need any more medication information, because they assume that they had it and they know it !,
- Patients' time constraints,
- Stress caused by their illness,
- Language used in counseling is not familiar or poorly understood by patient or caregiver,
- Patients might be satisfied with the medication information provided by the prescribers during the clinical encounter.
- Those who were counseled might be the caregivers and not the patients.
- Old male patients are reported by some researcher to have a higher refusal rate for counseling.
- Patients are illiterate and/or had low health literacy,
- Patients might be suffering hearing impairment,
- The pharmacy might be lacking private counseling area.^[58-63]

In such cases, the responsible community pharmacist shall secure the dated signature of the patient or the caregiver on the detailed refusal act, and keep in records. Seventy five percent 97(75%) of the respondent pharmacists said they use paraphrasing during counseling to rule out any doubts about the patient's understandability of the medication information provided, while 32(25%) usually do not. Paraphrasing represents a genuine movement from the side of the counseling pharmacist to ensure patients understanding; as it helps checking the correctness of the delivered message and rules out any possible misunderstanding.^[64] Eighty (62%) of the respondent pharmacists use visual or written aids, when they feel if they ever felt that the patients did not understand the verbal message, while 45(35 %) asserted that they only use paraphrasing (verbal), and only 10(3%) neglect that, altogether, (Table 7). The use of the visual medication information form, as represented by pharmaceutical pictograms, or symbols, side by side to the verbal and written medication information forms, to complement and reinforce both of them, but not to replace them.; in an endeavor to secure a better understanding of patients for their medications' use instructions and to help them handle their medications more properly; thus increasing their safety, effectiveness and usefulness. A very big group of researchers, supported the use of Pictograms, as they were proven to augment the understanding of medication information by the elderly and low-literacy ordinary patients.^[65-69] This indicates a fairly acceptable level of good pharmacy practice. Pharmacists

are supposed to use all the aids available, under their hands, to ensure that their patients were able to understand the messages they provided. As regards the provision of medication information to holders of new prescriptions, refills and/or O.T.C medications, a majority 73 (56.2%) of the respondent pharmacists, confirmed that they do not usually provide the same detailed medication information when dispensing new prescription, refills or OTC. However, 57 (44%) confirmed that they provide the same details in all cases. Ideally, the pharmacist is supposed to counsel patients on all the new and refill prescriptions and OTC medications. That is simply because the patients might have previously visited different pharmacies, indifferent times, areas, and the level and quality of medication information provided is not known to the most recent one. It is a form of double checking. When non-prescription drugs are indicated, the pharmacist must be able to give a proper and impartial advice, detailed and truthful medication information to the OTC seeker to help him/her use the recommended product safely and effectively, or even refrain.^[70] Table 8, shows that 53 (40.8%) of the respondents, used to inform their patients about any detected prescription errors and advise them to contact their prescribers, while 40 (30.8%) admitted that they immediately correct the detected error(s) and dispense the prescription. Thirty three (25.4%) feel obliged to call the prescriber, while 4 (3.1%) dispense the prescribed medication as it is, without any correction to the detriment of the patient's health. Ideally, from the prescriptive of the researchers, when the community pharmacist doubts the prescription error, he/she must first be sure of that error, and then he/she should try contacting the prescriber and convey that to him/her of his/her and defines it exactly while providing his/her reasons for that. That act in itself is reflective of collaboration and a practice of educating the prescribers who are not supposed to be well knowledgeable about pharmaceuticals, same to the level of the pharmacists. If the prescriber still insists on that "error", the pharmacists should then dispense the medication as prescribed and keep a copy of the prescription and record the details of this communication with the prescriber including date and exact time. If the pharmacist cannot access the prescriber (unreachable, not available or his/her contact address unknown).^[71] Then he/she shall inform the patient about his/her doubts, and advise him/her to reach the prescriber. The pharmacist is not always exposed to the diagnosis of the patient's condition, his/her comorbidities and all the particulars of the medications' history, which are all in the hands of the prescriber. Eighty eight (68%) of the respondent pharmacists don't usually provide patients with their contact address, while 42 (32.3%) usually do. Moreover, many doctors do not provide patients with their contact address, so it becomes almost impossible to reach them.^[71] The prevailing Sudanese, Medicines and Poison Acts (2009), allow free substitution of the

same generic name for the practicing pharmacist, without clearly mandating the pre-endorsement of the prescriber. Accordingly, it is a legal right.^[72] A big majority 108 (83.8%) of the respondents used to secure patients' agreement on substitution, first. This is perfectly logical. The patient is an important member of the healthcare team since he/she is going to implement the treatment plan, monitor his / her health and either enjoys or suffers the results of using, or refraining from using the medications.^[73] The patient refusal of substitution might be related to his/her own individual perception about generics, a previous negative experience with generics, brand loyalty, he/she might have received inadequate or confusing medication information from the community pharmacist, or he/she may be holding low regard to the pharmacist.^[74] Only a small minority 21 (16.2%) of the respondents didn't respect patient's choice, at all ! As regards their sources of medication information, a majority 57 (43.8%) of the respondent pharmacists asserted that they use books and journals as their main sources. Respondent Sudanese pharmacists in one study reported that their main sources of medication information were journals, textbooks (55.1%), industry's promotional literature and representatives (54.14%), colleagues (23.6%) and information centers (17.3%). While 36 (27.7%) use the internet, the rest 12 (9.2%) and 8 (6.2%) depend on medical representatives and drug information center, respectively, Table, 10. In a previous study the Sudanese community pharmacists defined some rather different sources, pattern and magnitudes for the sources of their medication information.^[75] Many researchers from Palestine, Switzerland, USA, Oman, had reported almost similar sources of information for community pharmacists.^[76-80]

Table 11, shows that 77 (59.2%) of the respondents did not usually advise their patients to read the package inserts (PIs), while 53 (40.8%) used to do. This result is far ahead of that reported in a previous Sudanese study, where only (21.7%) of the respondents pharmacists used to advise patients to read the package inserts, before taking their medications.^[81]

This result and rate is almost matching to Ankrah and Ofei, 2010; findings where they reported that only 33% of their studied Ghanaian patients were advised by healthcare providers to read the package inserts.^[82] According to Fuchs et al., 2007, the medications' package insert is the most important, easily accessible and frequently used source of written medication information for patients, prescribers and pharmacists.^[83,84] The respondents explained their negative attitude towards the package inserts, that some patients might get scared of the detailed possible side effects when they read the PIs. But why should

the respondent pharmacists want to down play, or even mask information about side effects from patients many studies had confirmed patients' eagerness to know all the possible side effects of their medications and considered information about side effects as extremely important or very important.^[85-87] More than 60% of the package inserts in Sudan, are only written in English, which is foreign to Sudanese who mainly speak lay Arabic language.^[88] Package inserts reading increases the knowledge of the patient, and that may consequently improve adherence to prescription advice. Moreover, they asserted that, those patients who read the package insert have better health outcomes, become more reliant in dealing with their medications and more likely to avoid medications errors.^[89-93] Some of the respondent pharmacists argue that they do provide the patients with the needed information and accordingly, there shall be no need to provide written information. This is a confiscation of patients' rights! However, the rather poor value given by the respondent pharmacists, in this study to the package inserts in counseling patients, was matching to the opinion of other researchers.^[82]

Table 12, shows a significant correlation between the respondents' years of experience and their preferred mode for the expression of side effects ($P=0.046$). As pharmacists get older and accumulate or acquire more experience, they tend to mention the frequency of side effects descriptively while younger pharmacists, with less experience, tend to either express it numerically or neglect it. Experienced pharmacists know people better and know the suitable way of providing that information. There was a significant relationship between respondents' years of experience and the satisfaction of patient with the medication information provided. It was found that the years of experience come along with patients' satisfaction. This is an expected result as experience enhances knowledge and confidence of the pharmacist, which improve patients' satisfaction with the provided medication information $P=0.001$; Table 13.

A significant correlation between years of experience and the source of medication information was found, where older respondent pharmacists (write both frequency and percentage, please), relied on books as their main source of medication information and the rest of them relied on books, colleagues and internet to varying degrees.

A few of the respondents' pharmacists with practical experience of less than one year, rely on medical representatives. It's easier to get information from a person, than getting it from books or other sources, also the confident way of information expression by medical representatives and the use of pharmaceutical jargon that impresses the fresh pharmacists,

may be the reason why they rely on medical representatives. Moreover, the personal relation is known to be strongly conducive to better understanding, as it rules or at least mitigates barriers to any possible requests for more clarifications, shown in Table 14, $P < 0.05$.^[94,95]

CONCLUSION AND RECOMMENDATIONS.

The results of this study strongly suggest that the quality and forms of medications' information provided by the studied community pharmacists to patients, in Khartoum North, town center, were imbalanced and inadequate information. The patients are denied their basic rights for a proper, adequate, balanced, and comprehensive medication information. One of the important recommendations of this study is the continuous education of the community pharmacists about the importance of providing patients with their needed medication information which shall be comprehensive, balanced and understandable and meeting their individual needs. The pharmacy legislators shall impose the shift of the present out-dated pharmacy practice to the highly needed pharmaceutical care, after securing its various needed provisions and training to the pharmacy staff.

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STUDY LIMITATIONS

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