

Assessment of counseling practice in medicine retail outlets in Mekelle City, Northern Ethiopia

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Introduction: Patient counseling can ideally be providing medication information orally or in written form to patients or their attendants, and it helps to form a concordant approach on encouraging patient involvement in the pharmaceutical care process and to explore patient's knowledge and understanding. Lack of adequate knowledge on drugs and up-to-date drug information are the major factor that hinders counseling services. This study assessed counseling practice of pharmacy professionals in Mekelle City.

Methods: A facility-based cross-sectional study was conducted. Professionals who volunteered to participate were involved. Self-administered questionnaires were used as data collecting tool to grasp professionals' practice on patient counseling, and the data were analyzed by using SPSS version 23. One-way analysis of variance and post hoc statistical tests were done to check for association between sociodemographic and other variables of counseling practice. In the statistical analyses, p -value of 0.05 and 95% confidence interval were considered.

Results: The most frequent drug information given by the pharmacy professionals to clients were unit dose (65%), frequency of administration (79%), and duration of therapy (62%). Study participants claimed that lack of knowledge (37%), lack of updated drug information (49%), high patient load (62%), and absence of a private counseling room (51%) were the main factors that prohibit pharmacy professionals from counseling their patients. Those pharmacy professionals whose monthly income was <2000 Ethiopian Birr claimed lack of knowledge ($p=0.007$), limited access for updated drug information ($p=0.009$), and lack of experience ($p=0.039$) as factors for poor counseling practice. Results of the post hoc analysis showed significant difference among the participants with <5 and >10 years of experience in providing information on storage conditions and written materials with p -value of 0.025 and 0.016, respectively.

Conclusion: This study proves that the level of satisfactory counseling is still very low compared to the expected practice. Lack of knowledge, lack of updated drug information, high patient load, absence of private counseling room, and underestimating the importance of counseling were identified as some of the factors that impede counseling services.

Keywords: counseling, medication, pharmacy professionals

Introduction

Patient counseling is a key component of pharmaceutical care process.^{1,2} Counseling may be defined as an interactive one-to-one relation between a pharmacist and a patient and/or a caregiver. It comprises the information to be given and received as intended and that the patient understands how to use the information to create the intended therapeutic outcomes.^{1,3,4} Of all the procedures involved in the patient and pharmacist interaction, patient counseling is the final checking process to ensure the correct medicine is supplied to the correct patient.⁵

Any patient counseling can ideally be providing medication information orally or in written form to patients or their attendants, and it should contain three major parts, namely introduction, process (content and manner), and conclusion. Introduction rules out vital points on how to approach the patient and builds a smooth communication bridge between the pharmacist and the patient to go through the counseling process. After counseling the clients, it is critical to reassure and validate the patients' understanding; this creates opportunity to clarify information that was not clear on the counseling section and helps to verify patients' understanding by feedback.⁶

Lack of counseling due to insufficient knowledge on drugs and updated drug information is a significant contributor during dispensing of medicines.⁵ The goal of patient counseling is to form a concordant approach on encouraging patient involvement in the pharmaceutical care process and to explore patients' knowledge, understanding, and concerns regarding their medicines.^{3,5,7,8}

Lack of adequate knowledge on drugs and up-to-date drug information were major factors that hinder counseling service. Most of the dispensers do not have access to up-to-date drug information. The overall percentage of satisfactory counseling was 32.8%; and lack of knowledge on drugs (76.7%), lack of updated drug information (90%), and high patient load were the main factors that stymie counseling.^{5,9} Most individuals who consume a medical product have no or a little information about the product and simply keep using the product without any supervision from a professional. Generally, use of drugs without the supervision of a professional can lead to wastage of resources and also causes significant harm in terms of adverse drug reactions in patients.¹⁰⁻¹²

Drug dispensers should provide appropriate, understandable, and relevant information to patients about their medication.^{1,2} The pharmacy professionals should appropriately educate patients on the name and description of the medication, duration of therapy, special directions, and precautions for preparing the drugs, common side effects, therapeutic indications and contra-indications, proper storage, refill information, and appropriate actions to be taken in case of missed dose, while dispensing prescribed and non-prescribed drugs, during patient counseling on discharge medication, or while providing recommendation about management of specific drug-related problem. They should also include reassurance of whether the information was received as intended and that the patients understand how to use the information to boost treatment outcomes.^{1,2}

In recent studies, communication between pharmacists and patients is reported to be important for improving appropriate medication use and achieving desired patient outcomes and greater patient satisfaction.^{3,5} A study conducted in Northwest Ethiopia affirmed that 80.7% (agree=40%, strongly agree=40.7%) of clients expect counseling from the pharmacist, but 51.2% of the pharmacist initiated counseling about prescribed medicine without being asked for advice.¹³

Few patients volunteer and contact a professional about their medication; others just use it without any clarified information and seek the professional help only when they face salient and life-threatening risk. The lack of appropriate counseling in many instances fails to achieve the desired therapeutic goals.¹⁴

Poor patient understanding and knowledge is a major factor for insufficient medication adherence, and it can be corrected by patient counseling and education. But in Ethiopia, ~60% of all the professionals provided counseling which is below the standard services.^{15,16} Providing patients with adequate and clear information on drugs is one of the basic services expected to be rendered by the pharmacist, although it gets little attention in Ethiopia. In this study area, there were limited study that assessed counseling services; hence, the aim of this study was to evaluate counseling practice of pharmacy professionals and to identify factors associated with the practice.

Methods

Study area and period

The study was conducted in all medicine retail outlets in Mekelle city. Mekelle is the capital city of Tigray regional state, around 783 km away from Addis Ababa, the capital city of Ethiopia. In Mekelle, there are 3 governmental general hospitals, 1 comprehensive specialized hospital, 32 pharmacies, 47 drug stores, and 3 drug vendors. This study was conducted from April 10, 2016 to May 12, 2016.

Study design

Facility-based cross-sectional study was used to assess the patient counseling practice and associated factors in medicine retail outlets in Mekelle city, Northern Ethiopia.

Population

Source population

The source population was all pharmacy professionals who work in private retail outlets.

Study participants

Those pharmacy professionals working in private retail outlets and those who volunteered to participate in the study were considered as the study participants.

Inclusion and exclusion criteria

This survey-type study involved professionals who volunteered to participate, and those who were not willing to participate were excluded.

Study variables

Independent variables

Sociodemographic characteristics of professionals (age, gender, qualification, salary, and nature of employment) and type of retail outlets where the professionals were working were considered as independent variables.

Dependent variables

Counseling practice and factor associated with counseling practice were considered dependent variables.

Data collection and management

Self-administered questionnaire was used as data collecting tool. The questionnaire comprised questions related to sociodemographic features followed by questions that assessed the counseling practice and factors associated with counseling practice (Figure S1). The collected data were assessed for quality on a daily basis.

Data quality assurance

Pretest of the data collection tool was conducted on 10 pharmacy professionals who were working in Ayder Hospital, because the professionals working in this facility were not included in the normal study. Based on the findings from the pretest, appropriate modifications were done on the data collection tools. Each filled questionnaire was checked for their completeness every day after data collection by the advisor and data collector.

Data entry, analysis, and interpretation

After the data were collected, they were entered into SPSS Version 23 for clearing and analyzing. Descriptive analyses were done by calculating frequency, mean, and standard deviations. One-way analysis of variance (ANOVA) and post hoc statistical tests were done to check for association between sociodemographic and other variables of counseling practice. In the statistical analyses, *p*-value of 0.05 and 95% confidence interval were considered.

Ethical considerations

Ethical clearance was obtained from the ethical review committee of the Department of Pharmacy, Mekelle University. In addition, a letter of request for cooperation was provided to the owners of the retail outlets, explaining the study purpose and seeking permission to conduct the study. Each individual who participated was asked for his/her consent, and they completed a written consent form (Figure S2). In addition, the data collected from each professional were kept confidential and used strictly for the purpose of the study only.

Results

Sociodemographic characteristics of pharmacy professionals

A hundred and twelve pharmacy professionals were approached, and 100 of them returned the completed questionnaires, which were included in the analysis; the response rate was 89.3%. About 81% of the participants were from private facilities; majority of the dispensers (55%) were in the age group of 30–50 years; majority of the professionals (59 [59%]) were male; 22 (22%) of the respondents were part-time employees; and 51 (51%) were with a monthly income of 2000–5000 Ethiopian Birr (ETB). Regarding the years of experience, nearly two thirds of the study participants (64%) had <5 years of experience (Table 1).

The study participants were druggists (30%, diploma holders in pharmacy profession), pharmacists (65%, degree holder in pharmacy profession), and MSc graduates (5%) (Figure 1).

Table 1 Distribution of respondents by sociodemographic characteristics, Mekelle City, Northern Ethiopia, 2016 (n=100)

Demographic profiles	Category	Percentage
Age	<30 years	40
	30–50 years	55
	>50 years	5
Gender	Male	59
	Female	41
Working sector	Private	81
	Public	19
Nature of employment	Full time	78
	Part time	22
Monthly income	<2000 ETB	15
	2000–5000 ETB	51
	>5000 ETB	27
Years of experience	<5	64
	5–10	24
	>10	12

Abbreviation: ETB, Ethiopian Birr.

Descriptive frequency for counseling practice assessment

According to respondents, the most frequent drug information given to clients were unit dose (65%), frequency of administration (79%), and duration of therapy (62%). But 37% of the professionals provide information on what to do if adverse reactions happened and demonstrated the way of administration when it was necessary (38%). However, 40% of the pharmacy professionals rarely asked feedback from the clients (Table 2).

Descriptive frequency for factors associated with the counseling practice

Study participants claimed that lack of knowledge (37%), lack of updated drug information (49%), high patient load

(62%), and absence of private counseling room (51%) were the main factors that prohibit pharmacy professionals from counseling their patients. Only 25% of pharmacy professionals underestimated the benefits of counseling, and on the other hand, 61% of pharmacy professionals considered counseling as their professional duties (Table 3).

Counseling practice of pharmacy professionals

Post hoc analysis was conducted, and significant difference was observed between the participants with <5 and >10 years of experience in providing information on storage conditions and written materials with *p*-value of 0.025 and 0.016, respectively. The one-way ANOVA showed those pharmacy professionals aged <30 years are worthier in telling frequency of administration than the other age groups (*p*=0.047); moreover, professionals aged >50 years showed less practice in providing written materials to their clients than those aged <30 years (*p*=0.000). In addition, pharmacy professionals who had >10 years of experience had significantly higher probability of providing written materials (*p*=0.004), and they told about storage conditions of the medicines than the other groups (*p*=0.015) (Table 4).

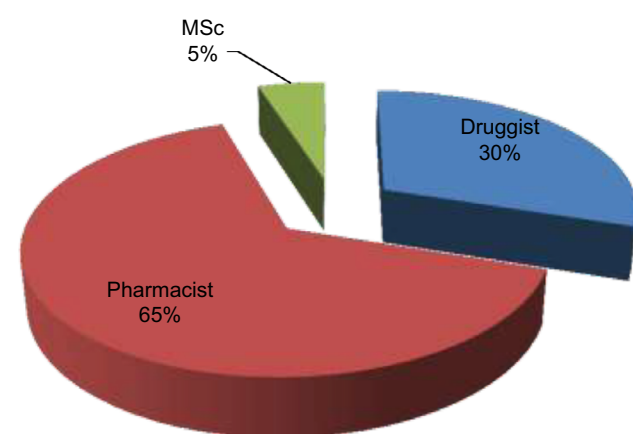


Figure 1 Percentage distribution of respondents regarding their educational status among medicine retail outlets of Mekelle City, Northern Ethiopia, 2016 (n=100).

Factors associated with the counseling practice and independent variables

In the study, difference in monthly income, years of experience, and educational status of the pharmacy professionals were found to be statistically significant predictors of

Table 2 Percentage distribution of respondents' counseling practice in medicine retail outlets of Mekelle City, Northern Ethiopia, 2016 (n=100)

Dependent value	Result				
	Always (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)
Tell the drug unit dose	65	17	11	6	1
Tell the frequency of administration	79	18	1	1	1
Demonstrate the way of administration, if necessary	38	22	33	6	1
Tell duration of therapy	62	20	11	4	3
Tell drug–drug interaction	21	25	40	14	2
Tell drug–food interaction	34	36	24	6	0
Tell drug–drink interaction	36	35	24	4	1
Counsel on major side effect	15	27	47	8	3
Inform clients not to discontinue drugs without consulting healthcare provider	26	34	23	14	3
Ask feedback from the clients	12	13	23	40	12
Discuss lifestyle modifications	6	26	29	32	7
Tell what to do if a patient misses a dose	13	32	32	21	2
Provide information on what to do if adverse reactions happen	37	23	24	14	2
Tell about storage conditions of the medicine	28	22	17	25	8
Give written materials	21	19	15	19	26

Table 3 Percentage distribution of respondents' factors associated with counseling practice in medicine retail outlets of Mekelle City, Northern Ethiopia, 2016 (n=100)

Dependent variables	Result				
	Strongly agree (%)	Agree (%)	Neutral (%)	Strongly disagree (%)	Disagree (%)
Lack of knowledge	14	23	8	29	26
Limited access to updated drug information	11	38	13	28	10
High patient load	26	36	16	13	9
Absence of private counseling room	19	32	24	19	6
Inability to communicate with the patient	15	37	16	22	10
Lack of confidence	12	13	20	39	16
Lack of interest	11	19	26	30	14
Lack of experience	10	26	16	31	17
Underestimation of the benefit of counseling	2	23	20	28	27
Professionals not considered counseling as their professional duties	8	18	13	25	36

counseling practice. In comparison with the other groups on educational status, MSc graduates significantly declared access for updated drug information as a factor associated with a penurious counseling practice than the other groups ($p=0.023$) (Table 5).

Those pharmacy professionals whose monthly income was <2000 ETB claimed lack of knowledge ($p=0.007$), limited access for updated drug information ($p=0.009$), and lack of experience ($p=0.039$) as factors for poor counseling practice. Professionals who has <5 or >10 years of experience reported communication as a contributing factor for patient counseling ($p=0.046$) as depicted in Table 6. The post hoc test revealed that a significant difference was observed between participants with <5 and 5–10 years of experience, on claiming lack of knowledge, lack of confidence, and lack of experience as factors associated with counseling practice with p -value of 0.008, 0.043, and 0.027, respectively, and also a significant difference was observed between participants with <5 and >10 years of experience on affirming lack of interest as a factor that hinders counseling provision.

Discussion

This survey is a representative survey of a specific population to collect information for the assessment of counseling practice and factors associated with the counseling practice among pharmacy professionals in medicine retail outlets of Mekelle City, Northern Ethiopia. From the current study, it was found that the most frequent drug information given by the pharmacy professionals to clients were unit dose (65%) and duration of therapy (62%) which is lower than the findings that reported from Bahir Dar city, Northwest Ethiopia, which divulge 99.2% and 96%, respectively. The current study reported that 79% of professionals claimed that they provide

information on frequency of administration which is higher than the report announced from Bahir Dar study that reveal 74%, the reason for these differences might be the difference in sample size, study population, and the way that data were collected. The study conducted in Bahir Dar was an observational study, and the current study was conducted by using self-administered questionnaires and data were collected as professionals claimed.⁹ This study depicted that 13% of the participants claimed that they always tell what to do if a patient misses a dose, but reports of Northwest Ethiopia published 7.8% and the current study delineate that only 6% of professionals always discussed with clients on lifestyle modification which is much lower than the reports of Northwest Ethiopia that documents 76.6% and 57%; the reason for this low score report might be, pharmacists' consider, clients' discussion on lifestyle modification with their physicians.^{5,17}

The current study observed no difference in counseling practice in different age groups of the professionals; this is similar to the findings reported from Finland, which shows no such difference between age groups and they also publicize that it is not easy for young pharmacists to change the traditional communication culture in the pharmacy.¹⁸ A study conducted in India depicted that 89.95% of professionals considered counseling as their professional duty, and in a study conducted in North Western Ethiopia, only 60% of all professionals considered counseling as their professional duty.^{9,19} In this study, 61% of pharmacy professionals consider counseling as their professional duty which is lower than the result reported from India and comparable with that of North-western Ethiopia, the similarity with Northwest Ethiopian study might indicate that there is similar awareness status throughout the country, and it needs improvement in order to escalate professionals' awareness on their duty, but it is

Table 4 Statistical test (one-way analysis of variance) of differences among categories of respondents on counseling practice in medicine retail outlets of Mekelle City, Northern Ethiopia, 2016 (n=100)

Dependent variable										
Factors										
	Age			Gender			Nature of employment			
	<30	30–50	>50	Male	Female	p-value	Fulltime	Part time	Mean	p-value
Tell duration of therapy	1.70	1.58	2.20	1.66	1.65	0.41	1.51	2.18		0.02
Tell drug–drug interaction	2.45	2.63	2.00	2.64	2.36	0.35	2.41	3.00		0.02
Tell drug–food interaction	1.92	2.12	1.60	2.08	1.92	0.32	1.81	2.77		0.00
Tell drug–drink interaction	1.95	2.05	1.60	1.89	2.12	0.54	1.80	2.68		0.00
Counsel on major side effect	2.60	2.52	2.80	2.59	2.53	0.80	2.46	2.95		0.08
Tell what to do if a patient misses a dose	2.62	2.65	3.20	2.76	2.53	0.48	2.49	3.27		0.00
Dependent variables										
	Monthly income (ETB)			Working sector			Years of experience			
	<2000	2000–5000	>5000	Private	Public	p-value	<5	5–10	>5	p-value
Tell about the storage conditions of the medicine	2.42	2.50	3.14	2.52	2.65	0.07	2.37	2.87	3.50	0.01
Give written materials	3.13	3.03	3.66	2.94	3.13	0.19	2.75	3.54	4.08	0.00

Abbreviation: ETB, Ethiopian Birr.

lower than that of India; this discrepancy is probably due to the difference in healthcare policy and regulatory strategies in the two countries.

The current study delineated that 55% of professionals have had awareness regarding the importance of counseling. A study conducted in India revealed that almost 98.4% of the professionals were aware of the importance of counseling; similarly, the study conducted in Nigeria reported that almost all of the professionals have a positive attitude about the importance of counseling.^{19,20} The findings of this study were unsatisfactory compared to the results obtained from the two studies, and this might be due to the pharmacists' inclination to deeply rooted traditional practice of dispensing and lack of organized teaching panels for the professionals to motivate and create awareness regarding counseling practice specifically, for those practicing in private outlets.

Although in a study conducted in India, 73.02% pharmacists recommend separate patient counseling cabin as necessary,¹⁹ in our survey, only 51% of the professionals considered private counseling room. Still the results obtained from this study were relatively lower than that conducted in India. This might be due to a weakness from the legal bodies in ensuring the presence of a private counseling area, insufficient space in the facilities and financial constraints to construct a private counseling room. Reports from Gondar revealed that 42.7% of clients would not be convenient with waiting area and that 58.5% were not satisfied with the counseling area.¹³ It is preferred to provide patient counseling in an isolated room that ensures comfort, confidentiality, and safe environment; that can establish a good relationship between patient and pharmacist; and it is indispensable that the regulatory bodies make sure that all the establishments are following the criteria provided to construct a medicine retail outlets before launching their services.

According to the study conducted in Nigeria, 97.5% of all the professionals have knowledge on pharmaceutical care services, and on the survey conducted in North Western Ethiopia, it was reported that 43.8% lack knowledge and only 29.7% have access for updated drug information.^{5,20} In the current study, it was found that 55% of the professionals claimed that they have knowledge to practice and that only 38% of the professionals have access to updated drug information. Result of our study is better than the report of Northwest Ethiopia, but yet it is lower than that of Nigeria; the findings of this study reveals that providing professional development or training for pharmacy professional is a cardinal activity to perk up their knowledge. Findings from Saud Arabia depicted that 24.8% of pharmacist lack confidence in

Table 5 Statistical test (one-way analysis of variance) of differences among categories of different educational status in medicine retail outlets of Mekelle City, Northern Ethiopia, 2016

Dependent variables	Factors			
	Educational status			p-value
	Diploma Mean	First degree Mean	MSc Mean	
Inform clients not to discontinue drugs without consulting healthcare provider	2.66	2.15	2.80	0.67
Ask feedback from the clients	3.43	3.18	3.40	0.62
Discuss lifestyle modifications	3.26	3.01	2.80	0.46
Tell what to do if a patient misses a dose	3.13	2.41	3.20	0.00
Provide information on what to do if adverse reactions happen	2.26	2.15	2.60	0.67
Tell about storage conditions of the medicine	2.83	2.50	3.00	0.45
Give written materials	3.33	2.95	3.60	0.34

Table 6 Statistical test (one-way analysis of variance) of factors associated with the counseling practice and independent variables among pharmacy professionals in medicine retail outlets of Mekelle City, Northern Ethiopia, 2016

Dependent variables	Factors										
	Monthly income (ETB)				Working sector			Years of experience			
	<2000	2000–5000	>5000		Private	Public		<5	5–10	>5	
	Mean	Mean	Mean	p-value	Mean	Mean	p-value	Mean	Mean	Mean	p-value
Lack of knowledge	2.93	3.03	4.00	0.00	3.39	2.89	0.17	2.92	3.95	4.00	0.00
Inability to communicate with the patient	2.33	2.64	2.77	0.51	2.74	2.63	0.88	2.56	3.29	2.66	0.04
Lack of confidence	3.00	3.15	3.81	0.03	3.39	2.78	0.36	3.06	3.79	3.91	0.01
Lack of interest	2.80	3.11	3.44	0.21	3.20	3.10	0.50	2.90	3.54	3.83	0.01
Lack of experience	2.66	3.00	3.59	0.03	3.30	3.00	0.05	2.93	3.75	3.41	0.02

Abbreviation: ETB, Ethiopian Birr.

their knowledge to practice counseling which is lower than our findings.²¹ From this study, among public and private facilities, no significant differences were observed regarding counseling practices however, the study from Bahir Dar depicted higher counseling practice in private facilities than the public sector.⁹

Those professionals whose monthly income was <2000 ETB reported lack of confidence, interest, and experience as significant factors that hinder them from counseling, and it was statistically significant with a *p*-value of 0.03, 0.21, and 0.03, respectively. On the other hand, those pharmacy professionals whose years of experience was <5 years claimed lack of knowledge as a major factor with a significant *p*-value of 0.00. Respondents whose monthly income was >5000 ETB disagreed to accept lack of knowledge as a major factor with a significant *p*-value of 0.00. In addition, MSc graduates admitted that limited access for updated drug information is a factor associated with a poor counseling practice than the other groups (*p* 0.023).

Conclusion and recommendation

WHO drug use indicators stated patient counseling as a mandatory patient care activity that should be practiced in dispensary. This study proves that the level of satisfactory

counseling is still very low compared to the expected practice. High patient load, absence of private counseling room, lack of updated drug information, lack of knowledge, and lack of experience were identified as some of the factors that impeded counseling services.

Therefore, from our findings, we recommend that medicine retail outlets should give attention to create a strong skill development system, increasing manpower and implementation of regular monitoring for the application of dispensing ethics to improve their patient counseling practice and regulatory bodies like FMHACA, and health bureaus need to develop and implement standard guidelines for the provision of patient counseling practice, and furthermore, all pharmacy professionals would take responsibility in order to ensure quality pharmaceutical services.

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Disclosure

The authors report no conflicts of interest in this work.

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Supplementary materials

Part I Questionnaire related to sociodemographic characteristics of the practitioners

1. Age _____ (in years)
2. Gender Male ☐ Female ☐
3. Educational status Diploma ☐ First degree ☐ MSc ☐
4. Monthly income _____ (ETB)
5. Years of experience _____ (year)
6. Working sector Private ☐ Public ☐
7. Nature of employment part time ☐ Full time ☐

Part II. Questions related to assessing the patient counseling practice

1, always 2, often 3, sometimes 4, rarely 5, never

S. N	Question related with counseling practice	1	2	3	4	5
1.	Tell drug unit dose					
2	Tell frequency of administration					
3	Demonstrate way of administration if necessary					
4	Tell duration of therapy					
5	Tell drug–drug interaction					
6	Tell drug–food interaction					
7	Tell drug–drink interaction					
8	Counsel on major side effect					
9	Inform clients not to discontinue drugs without consulting healthcare provider					
10	Ask feedback from the clients					
11	Discuss lifestyle modifications					
12	Tell what to do if a patient misses a dose					
13	Provide information on what to do if adverse reactions happen					
14	Tell about storage conditions of the medicine					
15	Give written materials					

Part III. Factor associated with counseling practice

1, strongly agrees 2, agree 3, neutral 4, disagree 5, strongly disagree

S.N	Reasons that hinder professionals from providing Counseling	1	2	3	4	5
1	Lack of knowledge					
2	Limited access for updated drug information					
3	High patient load					
4	Absence of private counseling room					
5	Inability to communicate with the patient					
6	Lack of confidence					
7	Lack of interest					
8	Lack of experience					
9	Underestimation of the benefit of counseling					
10	Professionals not considered counseling as their Professional duties					

Figure S1 Questionnaire

Dear sir/madam, I am _____. I am from Mekelle University, Department of Pharmacy. Currently I am conducting my directed study for the partial fulfillment of bachelor degree with the title of “**patient counseling practice in medicine retail outlets, Mekelle city, Northern Ethiopia.**” This questionnaire is part of the research, and the information you provide will be a very important input in the understanding of the topic at hand and will help the investigators to suggest solutions to solve possible problems to be discovered from the study. The interview will take only 10 to 15 minutes, and you have a right not to answer any question that you do not want to respond. You can also stop your participation at any time if you want to do so. If you have any questions about this study, you can ask at any point in the interview.

So, are you willing to participate in this study? Yes ☐ No ☐

Figure S2 Consent form

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