





# Pharmacists' Medication Counseling Practices and Knowledge and Satisfaction of Patients With an Outpatient Hospital Pharmacy Service

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Yabibal Berie Tadesse, MSc<sup>1</sup> , Ashenafi Kibret Sendekie, MSc<sup>2</sup> ,  
Biset Asrade Mekonnen, MSc<sup>3</sup>, Fentaw Girmaw Denberu, MSc<sup>4</sup> ,  
and Abebe Tarekegn Kassaw, MSc<sup>4</sup> 

## Abstract

The degree of communication between patients and pharmacists has a significant impact on the process of medication counseling. The purpose of this study was to evaluate pharmacists' practices of medication counseling and to assess patients' knowledge of medications and satisfaction with pharmacy services at Woldia Comprehensive Specialised Hospital (WCSH). A cross-sectional study involving 23 pharmacists and 339 patients was carried out between February and May 2022 at WCSH. A self-administered structured questionnaire was used to assess the medication counseling activities of pharmacists, whereas interview-based questionnaires were used to evaluate patients' knowledge of the drugs prescribed to them and their level of satisfaction with outpatient hospital pharmacy services. The Statistical Package for Social Sciences (SPSS) Version 25.0 was used to analyze the data. Around two-thirds of pharmacy professionals (73.9%) agreed that they were satisfied with their counseling activities. But a very low number of them always provided counseling regarding the purpose of medications (13%), major drug-drug interactions (26.1%), possible side effects (30.4%), the importance of compliance (30.4%), storage conditions (34.8%), and drug-food interactions (39.1%). Among the 339 patients involved in the study, less than half (46.3%) of them had sufficient knowledge of their dispensed medication at the exit interview. Only nearly half of the patients (54.3%) agreed that they were satisfied with the pharmacy service. Despite the fact that a significant proportion of the pharmacy professionals agreed that they were satisfied with their counseling practices, their level of involvement in major counseling activities was limited, which impacted the knowledge of patients about their medication and patients' satisfaction with pharmacy services. This might be because of potential barriers in terms of workload and lack of resources. The findings may indicate that pharmacy services need to improve through identifying potential gaps and tackling barriers.

## Keywords

Medication counseling, knowledge, outpatient, satisfaction, pharmacy services, Ethiopia

### What do we already know about this topic?

Dispensing and medication counseling depend on successful communication between patients and pharmacy professionals, which is greatly influenced by pharmacy professionals' experience in the dispensing process. However, no research has been conducted on the medication counseling practice and/or patient satisfaction with outpatient pharmacy services in the study setting.

### How does your research contribute to the field?

The findings showed a clear gap between pharmacy services and pharmacy professionals' engagement in addressing patients' demand in medication dispensing practice.

### What are your research's implications toward theory, practice, or policy?

The finding of the current study will add a body of knowledge for practitioners, patients, and other stakeholders who have been involved in filling the gap in pharmacy service.



## Introduction

The International Pharmaceutical Federation (FIP) and World Health Organization (WHO) guidelines on good pharmacy practice (GPP) define GPP as the practice of pharmacy that responds to the needs of people who receive the pharmacists' services by providing the best, evidence-based treatment.<sup>1</sup> Evidence suggests that pharmacist interventions during dispensing, such as counseling, improve medication adherence and protect people from drug-related problems.<sup>2</sup> Patient counseling is an important service provided by pharmacists because pharmacists in public health institutions play an important role in optimizing drug usage, improving patient outcomes, preventing prescription misuse, and lowering costs.<sup>3</sup> General standards recommend the best ways for pharmacists to inform and counsel patients about prescription and over-the-counter medications. Providing appropriate medications, information regarding the drug's name, description, indications, method of administration, dose and dosage forms, usage instructions, length of therapy, precautions, adverse effects, and contraindications need to be addressed during the dispensing process. All recommendations stress the importance of pharmacists probing patients' comprehension of their prescriptions and tailoring their care to each individual's unique needs.<sup>4</sup>

Pharmacy professionals' services and activities have evolved significantly over the last few decades. Currently, the primary health-related function of a pharmacy practitioner is to ensure the quality of dispensing. The role of pharmacy experts in medication dispensing is critical, and if it is done incorrectly, all resources used in patient care up to that point may be squandered.<sup>5</sup>

Ethiopian pharmacy schools have traditionally focused on products, despite having the ability to provide pharmaceutical counseling. In reality, the primary practice areas were community pharmacies and hospitals. However, due to a lack of best practices and motivation as a result of the public's, health planners, and other healthcare professionals' limited understanding of the pharmacist's role in healthcare, the practice of counseling is insufficient.<sup>6</sup> More than 50% of all medications are prescribed, given, or sold improperly on a global scale. Inappropriate drug use causes increasing medical costs, increases admission rates and the need for emergency consultations, and causes great human harm through suboptimal patient outcomes and unfavorable drug reactions.<sup>7</sup> The biggest challenges include a lack of qualified pharmacists, a lack of

standard practice guidelines for counseling and medication-related issues, and a lack of public understanding of the pharmacist's role in healthcare.<sup>8-11</sup> An earlier study conducted by Asrade et al showed that being busy with pharmacists and the education, experience, and attitudes of pharmacists were found to be obstacles to providing counseling.<sup>12</sup>

Patient satisfaction is influenced by a variety of factors, including the standard of clinical care delivered, the availability of medications, the conduct of medical professionals, the cost of services, hospital infrastructure, physical comfort, emotional support, and consideration of the preferences of the patient.<sup>13</sup> Patient satisfaction studies have a significant influence on healthcare providers' attitudes and behaviors, and as a result, these studies are more likely to inspire clients to provide feedback.<sup>14</sup> Assessing pharmacy professionals' level of counseling practices could be important because it may have a direct impact on hospital pharmacy services and be related to patients' satisfaction with the service. Earlier evidence also reveals that assessment of pharmacists' medication counseling services and patients' satisfaction could be among the vital parameters for predicting the quality of pharmacy services.<sup>15</sup> Therefore, it is crucial to perform relevant studies to evaluate medication counseling practices used by pharmacy experts as well as patients' knowledge and satisfaction with pharmacy services as a crucial part of healthcare. This will make it easier to pinpoint the particular service areas that need to be improved in order to obtain pharmacy services of the highest quality. There hasn't been any research done regarding pharmacists' level of practice in offering medication counseling to patients, as well as the patients' knowledge of the medications dispensed and their satisfaction with Woldia Comprehensive Specialised Hospital's (WCSH) outpatient pharmacy services. This study was aimed at evaluating the medication counseling practices of pharmacists and patients' knowledge of their medications and satisfaction with hospital pharmacy services at WCSH.

## Methods and Materials

### *Study Design, Setting, and Period*

A cross-sectional study was conducted at the outpatient pharmacy in WCSH from February 2022 to May 2022. WCSH is found in the North Wollo zone at Woldia town, which is located 525 km from the capital city of the country, Addis Ababa, and 385 km from Bahir Dar, the capital city of

<sup>1</sup>Department of Medicinal Chemistry, School of Pharmacy, College of Medicine, and Health Sciences, University of Gondar, Gondar, Ethiopia

<sup>2</sup>Department of Clinical Pharmacy, School of Pharmacy, College of Medicine, and Health Sciences, University of Gondar, Gondar, Ethiopia

<sup>3</sup>Department of Pharmacy, College of Medicine and Health Science, Bahir Dar University, Bahir Dar, Ethiopia

<sup>4</sup>Department of Pharmacy, College of Health Science, Woldia University, Woldia, Ethiopia

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### **Corresponding Author:**

Yabibal Berie Tadesse, Department of Medicinal Chemistry, School of Pharmacy, College of Medicine and Health Sciences, University of Gondar, Po. Box: 196, Gondar, Ethiopia.

Emails: yabibalberie@gmail.com; yabibal.berie@uog.edu.et

Amhara regional state. It was established in 1953 E.C. and it serves 2.5 million people with different healthcare services. The hospital has 311 clinical and 91 administrative staff.

### Study Participants and Eligibility Criteria

Pharmacy staff and patients participated in this study as 2 separate study groups. Professionals who worked in an outpatient pharmacy during the study period were contacted. To be included in the study, they could be a pharmacy professional, and they were volunteered to participate. All patients who received pharmacy services and were at least 18 years old were also included in this study. Patients with severe diseases and other neurological and psychological conditions that prevented them from responding were also not included in the study.

### Sample Size Determination and Sampling Techniques

There was no sample size calculation for the pharmacy professionals who filled out the self-administered questionnaire because the study was only conducted in one hospital and the pharmacy professionals practicing in the outpatient pharmacy were limited, so all available ones were considered.

In terms of the patient exit interview, the sample size was calculated using the following general formula for a single population proportion:

$$n = \frac{z \left( \frac{\alpha}{2} \right)^2 * P(1-p)}{d^2}$$

Where, n=the number of clients to be interviewed and/or observed,  $d=0.05$ ; margin of error,  $P=.328$ ; proportion of satisfactory counseling on dispensed medicines which was 32.8% according to a study done in North Western Ethiopia, Bahir Dar.<sup>14</sup>

$$n = \frac{(1.96)^2 \times 0.328 (1-0.328)}{(0.05)^2} = 338$$

Accordingly, considering 10% of possible nonrespondents, a total of 372 subjects were enrolled in the study. To include a study participant, a convenient sampling technique was deemed appropriate given the time frame of data collection and for better management of moderate data.

### Operational Definition

**Patient medication counseling:** a process of giving adequate information in the form of verbal instructions to ensure that the patient has an unequivocal understanding of the instructions for use and any distinguishing characteristics or requirements of the medicine.<sup>16</sup> The information may be provided orally or in written form to clients or their carer with

instructions on use, advice on side effects, precautions, storage, diet, and lifestyle modifications.

**Pharmacy professionals:** in the Ethiopian context, pharmacy professionals are personnel who might be either pharmacists (bachelor degree holders) or druggists (diploma level). Pharmacists have the legal right to provide any pharmaceutical services independently, while druggists are supportive of dispensing for pharmacists and are not allowed to license hospital pharmacies independently, but they have a professional license in drug stores.<sup>17,18</sup>

**Consultation time:** the time at which a pharmacy professional starts transferring information to the patient up to leaving the dispensing table or room.<sup>19</sup>

### Data Collection Instruments and Procedures

A self-administered questionnaire was employed to get information from pharmacy staff regarding their medication counseling practices, perceptions, and barriers, while an interview-based questionnaire was utilized to collect data from patients about their knowledge of medications and satisfaction with pharmacy services. The data collection instrument was adapted from other similar studies so that its usefulness could be validated and modified for this study.<sup>12-14</sup> The questionnaire consisted of the sociodemographic characteristics of the participants and 5 important sections that were grouped into 2 independent groups for pharmacy staff and patients. The data was collected by 3 graduating pharmacy students after receiving half-day training regarding the contents of the questionnaire, data collection methods, and ethical concerns.

### Data Collection Tools for Pharmacy Staff

The first section of the questionnaire consisted of 11 statements used to assess the medication counseling activities of pharmacy professionals. The questionnaire was a Likert scale type (always, usually, often, sometimes, never), and it was assessed for its reliability and found to be acceptable with a Cronbach alpha of .79.

The second section assessed pharmacy professionals' perceptions toward patient counseling and consisted of 5 statements with Likert-type questions (1 = disagree, 2 = not sure, and 3 = agree) with an acceptable reliability test of a Cronbach alpha value of .82. The third section, however, included questions concerning possible self-reported barriers to pharmacists' counseling practices.

### Data Collection Tools for Patient Interview

The first section of the questionnaire consisted of questions to assess the patient's exit knowledge status. It assessed their dispensed drugs using 7 knowledge-related questions about their medications. The patient was considered knowledgeable (sufficient knowledge) if they could correctly answer at

least 5 of the 7 questions and insufficient knowledge if they failed to correctly answer more than 5 of the 7 questions. The questionnaires' reliability was checked and found to be acceptable, with Cronbach alpha values of .78.

The second section of the questionnaire is composed of 5 questions used to assess patients' satisfaction with hospital pharmacy services. It was used to assess the satisfaction of patients with the dispensing area and counters, patient privacy, the dispensing process, personnel services, and overall satisfaction. The questions were on a 3-point Likert-type scale (1=disagree, 2=not sure, 3=agree) at the outpatient pharmacy. If patients reported that they agreed to these questions, they were considered satisfied with the service they received, while those who responded that they were either not sure or disagreed were considered not satisfied. The questionnaires' reliability was checked and found to be acceptable, with a Cronbach alpha values of 0.81.

### Data Quality Control Management

The questionnaire was pretested with around 3 pharmacy professionals and 37 patients (10% of the sample), and feedback regarding its clarity and ease was taken. After modification based on the respondents' feedback, the actual data was collected on a daily basis. The lead investigator reviewed the completed questionnaire each day to ensure it was complete and the checklist was uniform and easy to comprehend. Then, changes were made to the questionnaire to make it more appropriate and suitable. Written consent was obtained from the study participants after clarifying the study objectives.

### Data Processing and Analysis

The collected data was sorted, cleaned, coded, and entered into Epi-data version 4.6.02 and then exported to SPSS version 25 software for analysis. The normality of the data was examined using a histogram and Q-Q plot. Descriptive statistics were used to summarize frequencies, means, and percentages.

## Results

### Sociodemographic Characteristics of Participants

A total of 23 pharmacy professionals returned a filled-out questionnaire, giving a response rate of 100%. Among the respondents, 12 (52.2%) of the pharmacy professionals were male. Less than half (10, 43.5%) of the respondents were between the age groups of 31 and 40 years. Concerning the educational qualifications of pharmacy professionals, around two-thirds (15, 65.2%) were degree holders, and a higher proportion of them (11, 47.8%) had work experience of 5 to 10 years (Table 1).

In this study, 339 patients were interviewed (a response rate of 91.1%). The majority of the patients interviewed

**Table 1.** Sociodemographic Characteristics of Pharmacy Professionals at the Outpatient Pharmacy of Woldia Comprehensive Specialized Hospital, May 2022 (N=23).

Variables	Category	Frequency	Percent (%)
Age (years)	20-30	9	39.1
	31-40	10	43.5
	41-50	4	17.4
Sex	Male	12	52.2
	Female	11	47.8
Religion	Orthodox	11	47.8
	Muslim	5	21.7
	Catholic	3	13.0
	Protestant	4	17.4
Marital status	Married	17	73.9
	Unmarried	6	26.1
Educational qualification	Pharmacist	15	65.2
	Druggist	8	34.8
Work experience (years)	<5	8	34.8
	5-10	11	
	>10	4	17.4

**Table 2.** Sociodemographic Characteristics of Patients at the Outpatient Pharmacy of Woldia Comprehensive Specialized Hospital, May 2022 (N=339).

Variables	Category	Frequency	Percent (%)
Age of the patients (years)	18-25	79	23.3
	26-40	125	36.9
	41-60	91	26.8
	>60	44	13.0
Sex of the patients	Male	155	45.7
	Female	184	54.3
Educational status of patients	Unable to read and write	29	8.6
	Primary school	62	18.3
	Secondary school	110	32.4
	Diploma and above	138	40.7

(184, 54.3%) were female, and 125 (36.9%) were in the age group 26 to 40 years. Regarding the educational status of the respondents, a significant proportion (138, 40.7%) had received higher education (diploma and above) (Table 2).

### Patient Medication Counselling Activities Offered by Pharmacy Professionals

Pharmacy professionals responded regarding their frequency of providing medication counseling practices to the patient. The most frequent drug information to which pharmacy professionals responded as they were always given was frequency of administration (87.0%), route of administration (73.9%), dose of drugs (65.2%), and duration of therapy (60.9%). However, a very low number of them always provided counseling regarding the purpose of medications



**Table 3.** Medication Counseling Activities Offered by Pharmacy Professionals (N=23).

Counseling activities	Always n (%)	Usually n (%)	Often n (%)	Sometimes n (%)	Never n (%)
Tell the purpose of the medication	3 (13.0)	11 (47.8)	1 (4.3)	7 (30.4)	1 (4.3)
Tell the Dose of the drug	15 (65.2)	4 (17.4)	2 (8.7)	2 (8.7)	-
Tell frequency of administration	20 (87.0)	1 (4.3)	1 (4.3)	1 (4.3)	-
Tell the route of administration	17 (73.9)	3 (13)	2 (8.7)	-	1 (4.3)
Demonstrate how to administer in special cases (supp, etc)	12 (52.2)	4 (17.4)	3 (13)	3 (13)	1 (4.3)
Inform food/drink –drug interaction (before/after or with food)	9 (39.1)	8 (34.8)	2 (8.7)	4 (17.4)	-
Duration of use	14 (60.9)	5 (21.7)	2 (8.7)	2 (8.7)	-
Tell possible side effects	7 (30.4)	4 (17.4)	4 (17.4)	7 (30.4)	1 (4.3)
Tell major drug-drug interactions	6 (26.1)	5 (21.7)	4 (17.4)	6 (26.1)	2 (8.7)
Tell the importance of compliance	7 (30.4)	4 (17.4)	6 (26.1)	5 (21.7)	5 (21.7)
Storage conditions	8 (34.8)	9 (39.1)	2 (8.7)	4 (17.4)	-
Average time spent on patient counsel (min)	Category	Frequency (%)			
	<2	12 (52.2)			
	2-3	5 (21.7)			
	3	6 (26.1)			

(13%), major drug-drug interactions (26.1%), possible side effects (30.4%), the importance of compliance (30.4%), storage conditions (34.8%), and drug-food interactions (39.1%). Around half (52.2%) of the participants explained that they spent less than 2 min during medication counseling (Table 3).

### Perception of Pharmacy Professionals Towards Patient Counselling Practice

This study revealed a good attitude among pharmacy professionals toward patient counseling, as 73.9% agreed that they were satisfied with their counseling practice. In addition, the majority (87.0%) of pharmacy professionals agreed that they used all opportunities to clarify patients' understanding of their counseling, and 91.3% of the pharmacy professionals agreed that they confirmed the patient's understanding during their counseling practice. Similarly, 95.7% of the pharmacy professionals agreed that patients were comfortable with their consultation, and 87% of the respondents also agreed that the information they provided was understandable to the patients (Table 4).

### Self-Reported Barriers to Patient Medication Counselling

The majority (82.6%) of the respondents agreed that not having the patient's medical history recorded by pharmacy professionals, 17 (73.9%) being too busy, and lack of up-to-date resources were the most common barriers to patient counseling by the respondents (Figure 1).

### Patients' Knowledge of the Dispensed Drugs

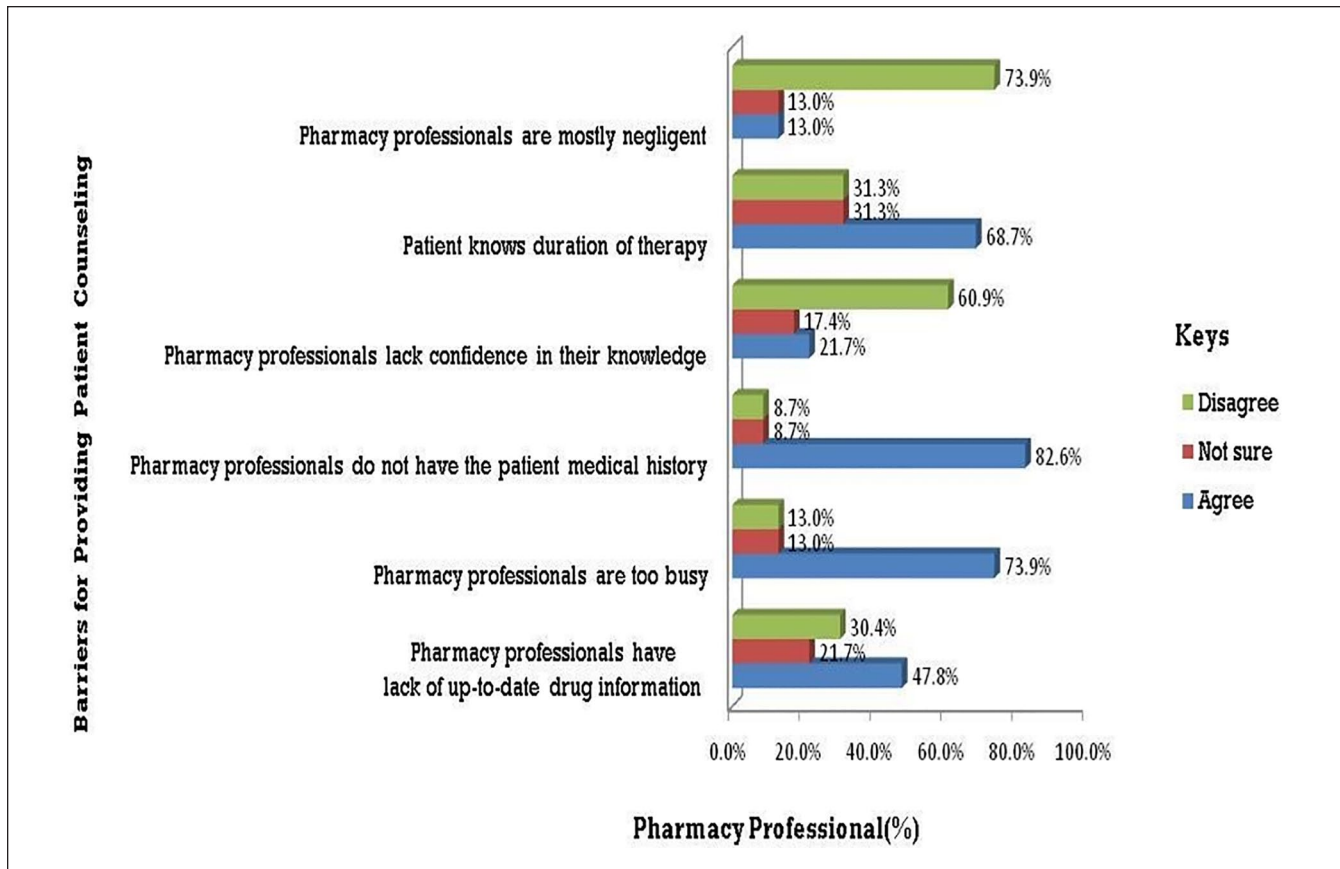
The knowledge status of the patients interviewed on exit from the outpatient pharmacy was assessed. The majority of participants responded that they were aware of the route of administration (330, 97.3%), the dose of drugs (325, 95.9%), frequency of use (259, 76.4%), name of the drug (247, 72.9%), and duration of therapy (233, 68.7%). However, significant numbers of patients failed to know precautions related to the drugs (217, 64%) and proper storage of the medication (210, 61.9%). Overall, less than half (46.3%) of the patients met the defined criteria regarding knowledge of their dispensed medication at the exit interview (Table 5).

### Patients' Satisfaction Level With the Outpatient Pharmacy Service

Out of the interviewed patients, around two-thirds (65.5%) agreed that the dispensing area and counters were very suitable for the service. In addition, 234 (69%) agreed that the dispensing area kept their privacy, and 218 (64.3%) agreed that they enjoyed the dispensing process with a shorter waiting time. Furthermore, the majority (228, 67.3%) of patients agreed that they enjoyed pharmacy professionals' services and understood all advice given to them by pharmacy professionals. The overall satisfaction level of the patients in this study was explained by their level of agreement; accordingly, only about half (184, 54.3%) of the patients agreed that they were satisfied with the overall pharmacy service (Figure 2).

**Table 4.** Perception of Pharmacy Professionals Toward Their Patient Medication Counseling Practice (N=23).

Statements used to assess the perception of pharmacy professionals	Level of agreement		
	Agree n (%)	Not sure n (%)	Disagree n (%)
Patients consult me about their medication/medical conditions comfortably	22 (95.7)	1 (4.3)	-
I use all the opportunities to clarify patients' understanding of my counseling	20 (87.0)	2 (8.7)	1 (4.3)
Patients understand the information I provide them	21 (91.3)	2 (8.7)	-
I confirm and clarify the understanding of the patient	21 (91.3)	2 (8.7)	-
I am satisfied with my counseling practice	17 (73.9)	4 (17.4)	2 (8.7)



**Figure 1.** Pharmacy professionals reported barriers to patient counseling at Outpatient Pharmacy of Woldia Comprehensive Specialized Hospital, May 2022 (N=23).

**Discussion**

The current study assessed the pharmacy professionals’ medication counseling practices, their perceptions and perceived barriers, and the patient’s knowledge of their medications and satisfaction with the pharmacy service. By providing counseling at the point of delivery in the pharmacy, pharmacists can significantly improve medication safety and patient compliance.<sup>20</sup> Patients frequently fail to take their medication as prescribed because they lack knowledge about how to do so.<sup>21</sup> As a result, treatment goals are not met, and quality

of life decreases. Professionals in the pharmacy must be extremely explicit about the crucial tasks they perform on behalf of their patients.

The current study showed that the majority of the participants most frequently provided counseling regarding frequency of administration (87.0%), route of administration (73.9%), dose of a drug (15; 65.2%), and duration of therapy (60.9%). This result is comparable to those of a study carried out in the towns of Bahir Dar and Gondar in Northwest Ethiopia, which found that the most common drug information that pharmacists responded to as they were always

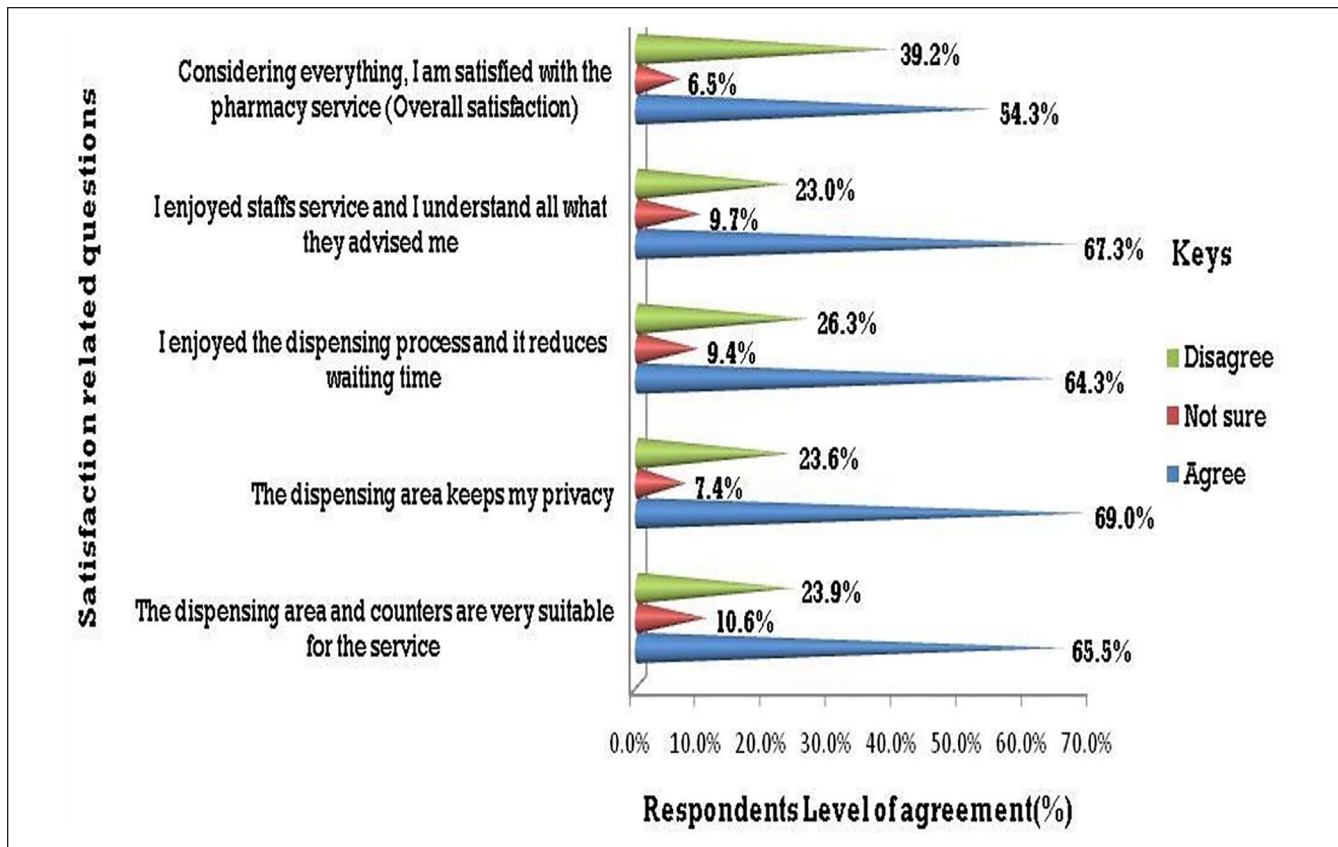
**Table 5.** Knowledge Status of Patients Interviewed for Dispensed Medications (N=339).

Knowledge related questions	Response	Frequency	Percent (%)
The patient knows the medication's name	Yes	247	72.9
	No	92	27.1
The patient knows the dose of the drugs	Yes	325	95.9
	No	114	4.1
The patient knows the medication's route of administration	Yes	330	97.3
	No	9	2.7
The patient knows the medication's frequency of administration	Yes	259	76.4
	No	80	23.6
The patient knows the duration of therapy	Yes	233	68.7
	No	106	31.3
The patient knows the medication's proper storage of the drugs	Yes	129	38.1
	No	210	61.9
The patient knows precautions related to the drugs	Yes	122	36.0
	No	217	64.0
Overall knowledge status	Sufficient knowledge ( $\geq 5$ correct responses)	157	46.3
	Not sufficient knowledge ( $< 5$ correct responses)	182	53.7

given, frequency of administration of drugs, route of administration, the dose of the drug, and duration of therapy, were 98.4%, 96.9%, 100%, and 9.4%, respectively.<sup>14,22</sup> However, a very low proportion of pharmacy professionals always provided counseling regarding the purpose of medications (13%), major drug-drug interactions (26.1%), possible side effects (30.4%), the importance of compliance (30.4%), storage conditions (34.8%), and possible drug-food interactions (39.1%). This could be because pharmacists were overloaded, or it might be because of negligence that pharmacists expect to address these counseling areas with the patient. The findings may implicate a significant gap in pharmaceutical patient counseling. In addition to giving the patient enough information on how to utilize the medications in a way that assures the information acquired from the prescribers, the pharmacy professionals must dispense the appropriate medications throughout the encounter. There are several requirements for these tasks to be effectively accomplished because each step in the process takes time to complete in a suitable manner.<sup>23</sup> This study showed that 52.2% of pharmacy professionals spent no more than 2 min on patient counseling. This result differs from that of a study carried out in Dessie, North East Ethiopia, where 54% of respondents said they spent 1 to 5 min on patient counseling.<sup>12</sup> The difference in consultation time might be related to a different workload and proportion of pharmacy professionals serving clients. In the current study, around three-fourths (73.9%) responded that they were busy, which might be a possible reason for not spending more time with patients. An appropriate amount of attention should be given to optimum communication between the pharmacy professionals and the patients so that the patients have adequate access to information.

This study also demonstrated perceived barriers for pharmacy professionals to provide effective patient medication counseling. The majority of respondents agreed that not having the patient's medical history by pharmacy professionals (82.6%), being too busy (73.9%), and lack of up-to-date resources (47.8%) were the most frequently stated barriers. Lack of time or increased workload and lack of resources were also frequently reported barriers to patient counseling in different studies including in Ethiopian settings.<sup>8-11,18,24</sup> In a study conducted in the Northern Ethiopian town of Mekelle<sup>25</sup> and in Saudi Arabian research, more than half of the pharmacists reported that their workload prevented them from providing patient counseling.<sup>26</sup> The findings may suggest that optimum pharmacy professionals need to be allocated to a proportional number of patients. In addition, pharmacists could be encouraged to utilize evidence from up-to-date resources that need to be presented in each department of pharmacy as much as possible.

The pharmacists' main duty is to make sure that the patient knows how to take their medication. Each patient should be asked to repeat the instructions so that the dispensers may verify their understanding.<sup>27</sup> It has been believed that enhancing a patient's familiarity with their treatment regimen can increase compliance and possibly minimize adverse drug reactions.<sup>25</sup> In the current study, the majority of patients were aware of the route of administration of their medications (97.3%), the dose (95.9%), the frequency of use (76.4%), the name of the medication (72.9%), and the duration of therapy (68.7%). This result was comparable to that of a study carried out in Jimma, South West Ethiopia<sup>28</sup> and Hiwot Fana Specialized University Hospital in eastern Ethiopia.<sup>29</sup> However, contrary to an earlier study



**Figure 2.** Patients' satisfaction level at Outpatient Pharmacy of Woldia Comprehensive Specialized Hospital, May 2022 (N= 339).

conducted at Hiwot Fana Specialized University Hospital in eastern Ethiopia,<sup>29</sup> the majority of patients failed to know about the proper storage of the medications (61.9%) and the precautions related to the medication (64%). This might be because of differences in communication between pharmacists and patients. For instance, in study, the majority of pharmacy professionals were not involved in patient counseling regarding storage conditions, possible adverse effects of the drug, and drug-food and drug-drug reactions. In addition, the majority of them spent a short amount of time counseling their clients, and this may cause a gap in the patients' knowledge regarding their medication storage and precautionary use.

Only 46.3% of ambulatory patients met the criteria for understanding their prescribed medicine at the exit in this study. This finding is similar to one found in an outpatient pharmacy at Hiwot Fana Specialized University Hospital in eastern Ethiopia,<sup>29</sup> where less than half of ambulatory patients (46%) met the requirements for knowledge of their prescribed medication at the exit interview. The majority of patients, according to the findings, have a poor understanding of their medications. It may be critical and necessitate intervention. Patients should be cautious and knowledgeable about their medications, and pharmacists should be encouraged to offer advice.

Approximately half of the patients (54.3%) were satisfied with the pharmacy service in the current study. This finding is consistent with the findings of a study conducted at Wolaita Sodo University Teaching Hospital,<sup>27</sup> which discovered that 54.2% of respondents were satisfied with the pharmaceutical services provided. Similarly, in Mizan-Tepi University Teaching Hospital<sup>30</sup> and Northwest Ethiopia by Debre Tabor,<sup>31</sup> 52.6% and 50.9% of respondents, respectively, were satisfied with the pharmaceutical services provided. Other findings indicated a discrepancy in patient satisfaction with the current study.<sup>32,33</sup> The small difference could be attributed to cultural, social, and demographic factors, as well as client expectations and pharmacy professional service quality. Each of the aforementioned elements varies from institution to institution.

In general, the current study highlighted the extent of pharmacy professionals' medication counseling practice and patients' exit knowledge and satisfaction with the outpatient hospital service of the WCSH, Northeast Ethiopia. The findings showed a clear gap between pharmacy services and pharmacy professionals' engagement in addressing patients' demands in medication dispensing practices. Therefore, stakeholders including healthcare facility managers, and other responsible bodies should be aware of the gaps and barriers and welcome to enhance the quality of pharmaceutical care in



the hospital and improve patients' satisfaction by tackling the reported barriers and challenges.

The current study has some limitations that must be considered. To begin with, the cross-sectional study design makes it impossible to confirm statements about actual practice after data collection, and there is no directionality of the causal relationship. Another limitation was that the study only used one hospital, resulting in a very small number of pharmacy personnel participating in the study and making it difficult to generalize the results to other settings. In addition, patients' knowledge of the medications they received was not assessed and cross-checked for individual medications. Moreover, the self-reported nature of the study findings depended on the trustworthiness of the respondents, so there might be an over- or underestimation of the reports.

## Conclusion and Recommendations

Although a significant proportion of pharmacy professionals agreed that they were satisfied with their counseling practices, more than half of the patients didn't know enough about the medications that had been prescribed. In addition, a significant proportion of patients were not satisfied with the pharmacy services. Thus, responsible stakeholders should be involved to identify gaps and tackle barriers, and they should be welcomed to enhance the pharmacy service and improve patients' satisfaction. Future research would also be welcomed, focusing on exploring barriers and potential factors associated with the medication counseling practices of pharmacists and hospital pharmacy services.

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## Authors' Contributions

YBT contributed to the conception, data curation, formal analysis, investigation, methodology, project administration, resources, and writing of the original draft and reviewed the final manuscript. AKS, BAM, FGD and ATK contributed to the data curation, formal analysis, methodology, supervision, validation, and review of the final manuscript. All authors gave final approval to the version to be published, agreed on the journal to which the article had been submitted, and agreed to be accountable for all aspects of the work. YBT is the guarantor of this manuscript.

## Availability of Data and Materials

The study materials and data are available from the corresponding author upon request.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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## Ethics Approval and Consent to Participate

Ethical approval was obtained from the Woldia University, health science ethical research committee with a reference number WUCS/024/2022. Woldia Comprehensive Specialized Hospital provided official permission to conduct this study. Following a briefing on the study's objectives, participants were informed and given written consent forms. Participants in the study were able to provide informed consent and had a thorough understanding of the study's objectives. All information obtained from the participants was kept confidential and the data were used for research purposes only. All methods were carried out in accordance with relevant guidelines and regulations based on the Helsinki legislation.

## Consent for Publication

Not applicable.

## List of Abbreviations

CP: Community pharmacies, DACA: Drug Administration and Control Authority, FIP: International Pharmaceutical Federation, FMHACA: Food, Medicines and Health Care Administration and Control Authority, GPP: Good Pharmacy Practice, WHO: World Health Organization, WCSH: Woldia Comprehensive Specialized Hospital:

## ORCID iDs

Yabibal Berie Tadesse  <https://orcid.org/0009-0009-9980-4204>  
Ashenefi Kibret Sendekie  <https://orcid.org/0000-0001-5982-853X>  
Fentaw Girmaw Denberu  <https://orcid.org/0000-0003-4167-8152>  
Abebe Tarekegn Kassaw  <https://orcid.org/0000-0001-8715-5352>

## Supplemental Material

Supplemental material for this article is available online.

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