



# Assessment of Community Pharmacy Professionals' Attitude and Perception Towards Ethical Issues in Amhara Region, Ethiopia: A Cross-Sectional Survey 2020


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**Purpose:** The objective of this study was to assess the attitude and perception of community pharmacy professionals' towards ethical issues.

**Methods:** We have undertaken a cross-sectional study among community pharmacy professionals in three selected towns (Gondar, Bahir Dar, and Debra Markos) of Amhara region in Ethiopia from February to March 2020. All community pharmacy professionals who were giving services during the data collection period were the study population. We used a pretested, semi-structured questionnaire developed from a review of previous study. Epi-info 7.1 was used for data entry, and SPSS version 20 was used for data analysis. Logistic regression was done, and a variable with a p-value < 0.05 with 95% confidence interval was considered to be associated with outcome variable.

**Results:** A total of 305 community pharmacy professionals participated in the study with a response rate of 95.3%. About 252 (82.6%) of respondents received education regarding professional ethics. Majority (89.8%) of the participants had ever accessed ethical information at their work site. Only 145 (47.5%) participants had ever recorded ethical issues in their working site. The most common reasons that obstruct to explain ethical issues to customers were shortage of time (85.9%), unavailability of reliable resources (40.0%), and poor ethical knowledge (37.7%). The reporting rate of respondents is less than 50% for most ethical scenarios. Sex, age, educational status, work experience, number of customers per day, working site, information about ethics, and training about ethics were observed to have a significant association with attitude and perception of community pharmacy professionals towards ethical issues.

**Conclusion:** Community pharmacy professionals had poor attitude and perception towards ethical issues. Interventions should be devised to uphold ethical awareness of community pharmacy professionals. A large-scale study is also recommended.

**Keywords:** attitude and perception, community pharmacy professionals, ethical issues, ethical scenarios

## Introduction

Community pharmacy professionals are the most accessible professionals with multifaceted pharmaceutical services.<sup>1-4</sup> While disposing of their responsibility, they need to adhere to national regulations or standards of good pharmacy practice<sup>3-5</sup> and abide by professional ethics<sup>6,7</sup> Pharmacy professional ethics is the values and ethical principles governing pharmacy practice that encourage the right

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professional conduct. It guides pharmacy professionals for tolerant care behind moral obligations and virtues.<sup>8,9</sup>

There is a significant change in pharmacy practice over the past 5 decades.<sup>10</sup> Globally, the main focus of pharmacy professionals is shifting from product-oriented to patient-centered practice. Patient-centered practice requires the identification of the concerns and needs of patients and collaborating with other health professionals closely to ensure safe and effective utilization of medicines.<sup>11–13</sup> This evolving practice together with ever-increasing complexity of cases, medications, and other contributing factors brings a rise of additional ethical dilemmas for pharmacy professionals.<sup>6,14–17</sup> An “ethical dilemma” is operationalized as a “situation in which there is a choice between at least two courses of action, neither of which is morally correct”.<sup>18</sup>

Community pharmacy professionals in different countries are experiencing frequent and complex ethical dilemmas which compromise ethical pharmacy practice.<sup>6,8,15,19–21</sup> They often run a commercial matter nearby their work sites which further augment the dilemmas.<sup>22,23</sup> Community pharmacy practice results many ethical conflicts because of the advertisement flora and fauna of pharmacy,<sup>23</sup> arising from conflicting personal, professional, institutional or societal values of the different parties involved.<sup>24–27</sup> Moreover, the consumerist birds of community pharmacy and the co-modification of medicines have led to experiencing several conflicts.<sup>28</sup>

As far as Ethiopia is concerned, there are reports of malpractices in pharmaceutical services by community pharmacy professionals.<sup>29,30</sup> However, there is no study that specifically assessed the overall ethical considerations of such professionals. Therefore, the purpose of the current study was to assess the attitude and perception of community pharmacy professionals towards ethical issues in selected towns of Amhara region. In Ethiopia, the term community pharmacy professional designates druggists or pharmacy technicians and pharmacists. Druggists or pharmacy technicians are diploma holders who completed a three years long pharmacy training. Pharmacists include those who had a bachelor degree and above certification, which according to the current nationally harmonized curriculum, is obtained after completion of a five years long pharmacy education for first degree and a follow-up post-graduate training.

## Methods

### Study Setting, Design, and Period

A cross-sectional survey was conducted among community pharmacy professionals in three towns of Amhara

region (Gondar, Bahir Dar, and Debre Markos). Amhara regional state is located in the Northwest of Ethiopia. The region has 11 zones, 139 woredas (districts), and 3422 kebeles. It is the second-most populous region in the country. Bahir Dar is located approximately 565 km away from Addis Ababa, the capital city of Ethiopia. About 25 community pharmacies and 38 drug stores were found in Bahir Dar town. Gondar town is located about 738 km away from the capital. There were 20 community pharmacies and 35 drug stores in the town. Debre Markos is located 299 km away from Addis Ababa. There were 15 community pharmacies and 21 drug stores in the town. In Ethiopia, pharmacy and drug store differ in the range of medications allowed to stock or dispense and qualification of the professionals who run the retail outlets. Pharmacy is run by a licensed pharmacist with a minimum qualification of bachelor degree in pharmacy and drug store is run by licensed druggist or pharmacy technician with a minimum qualification of diploma in pharmacy. The community drug retail outlets give patient-centered services such as responding to symptoms, filling prescriptions, and patient counseling. The data was collected from February to March 2020.

### Population

All community pharmacy professionals working in the three towns of the Amhara region and who were giving service during the data collection period were the study population.

### Inclusion and Exclusion Criteria

All community pharmacy professionals who were present at the time of data collection were included. Those who had less than one year of work experience were excluded because, in the Ethiopian situation, they serve under close supervision of senior professionals and might not have a chance of getting ethical dilemmas on their own.

### Sampling

No sampling was done as we used all three hundred and twenty actively serving pharmacy professionals in the three towns. The questionnaires were distributed to all community pharmacy professionals who were available at the working site during the study period.

### Data Collection Procedure

A semi-structured, pretested self-administered questionnaire was used to collect the required data. The

questionnaire was adopted from a previous study related to ethical issues in community pharmacy.<sup>22</sup> A draft of the questionnaire was piloted on 15 pharmacy professionals out of the study area to check for understanding, questionnaire design, and the length of the questionnaire. After the pre-test, slight modifications were done on some components of the questionnaire to make it easily understandable by respondents.

The survey questionnaire consisted of closed-ended, multiple-choice, fill-in short answers, and statements (dilemmas). The questionnaire was constructed to include three sections. The first section included demographic information and close-ended questions about whether they received previous continuing education on ethics in pharmacy practice, or have accessed ethical information at the practice site. The second section included information about the frequency with which ethical issues are discussed with patients, whether they discuss ethical issues and how often the discussion was conducted in the pharmacy, the barriers that limit community pharmacy professionals from explaining ethical issues to their patients, available ethical information resources at practice sites, and perceived resources that would help care for patients. The third section included questions related with the frequency of occurrence of each possible ethical dilemma faced by the community pharmacy professionals. Nineteen different scenarios involving issues related to pharmacy professionals-patient and pharmacy professionals-colleague interaction which specifically cover scenarios including drug abuse, confidentiality and privacy, disruptive behaviors, self-prescription, dispensing without prescription and others were used in the survey (Table 1). Study participants were considered to have a positive attitude for specific scenario if they reported they have encountered a particular ethical dilemma irrespective of the frequency.

The data was collected by three trained pharmacists. A total of 320 questionnaires were distributed to all community pharmacy professionals during the study period. Non-respondents were telephoned and visited to return their questionnaire. Finally, we had collected the data from three hundred and five respondents (72 respondents in Gondar, 164 respondents in Bahir Dar, and 69 respondents in Debre Markos).

## Variables of the Study

The dependent variable is attitude and perception towards ethical consideration. The independent variables are sex, age, marital status, work site, educational level, work experience, number of customers per day, ever received

previous continuous education about ethics, ever accessed ethical information at the practice site, ever recorded ethical concerns, barriers that prevent from explaining ethical issues with customers, and availability of ethical references in drug retail outlets.

## Data Entry, Analysis and Interpretation

We used Epi-info 7.1 for data entry. SPSS version 20 was used for further analysis. Mean with standard deviation, frequency of occurrence, and percentage were computed. Logistic regression was done to identify factors associated with the dependent variable. A bi-variable analysis was done to determine the crude association between the scenarios and each independent variable. Independent variables with a p-value < 0.2 were selected for multivariable logistic regression. A variable with a p-value < 0.05 with 95% confidence interval was considered to be associated with outcome variable.

## Data Quality Control

Data quality was assured through the whole process starting from questionnaire design up to analysis and generating output. Pre-test was done before the actual data collection. Data collectors were rehearsed with the overview of the study and the process of data collection in such a way to come up with quality data.

## Results

### Socio-Demographic Characteristics of Study Participants

In this study, three hundred and five (305) respondents participated with a 95.3% response rate. The mean age of study participants was 27.8 years ( $\pm 5.42$ ) ranged from 20 to 65 years. One hundred and sixty-three (53.4%) participants were males and one hundred and sixty-four (53.8) were married. Among the total of the study participants, above half of them were druggists or pharmacy technicians (56.7%) and the majority of them were working in private pharmacies (69.5%) (Table 2).

### General Information on Ethical Issues

Two hundred and fifty-two (82.6%) participants received previous continuous education on ethics. Majority of the participants (89.8%) had ever accessed ethical information at the practice site. One hundred and forty-five (47.5%) participants had ever recorded ethical issues in their working site. Significant of them (69.5%) discussed ethical

**Table 1** Scenarios Used for Assessment of Ethical Issues Among Community Pharmacy Professionals in Amhara Region, Ethiopia, 2020 (n=305)

Scenario Number Assigned	Scenarios
1	A customer asks for an over-the-counter treatment. After talking to the patient you conclude that s/he does not need the treatment, though it would do no harm for him/her to use it
2	The prescription states a specific brand of drug. You do not have this in stock but you have a generic clinically equivalent brand in stock
3	A patient comes in for his/her controlled drug prescription but it is the day after the date specified on the prescription
4	After questioning, a patient makes it known s/he is going to use the medication she/he is asking to buy against guidelines (eg hydrocortisone cream for his/her face)
5	A customer wants to buy an over-the-counter medicine you suspect s/he might be abusing (maybe this appears likely after speaking to him/ her about it) and the customer does not want an alternative
6	The husband or wife, or another close family member (other than the parent of a child) of a patient asks for confidential information about that patient's treatment
7	Someone comes into the pharmacy/phones you asking you to identify a particular tablet that does not belong to him/her. You can identify the tablet
8	You believe that withholding the truth from, or deliberately misleading, a patient would mean s/he would be compliant with a treatment you believe is very important to him/her
9	A female comes in and asks for hormonal contraception. She says she is married, but you suspect she is not
10	You feel something a colleague has done is unethical
11	You feel something a colleague has done is unethical and you talk to your colleague, but still s/he does not change his/her behavior
12	A parent of a patient asks for confidential information about his/her son/daughter's treatment
13	A doctor is prescribing, on private scripts, medication you suspect s/he is abusing. You have already talked to him/her about it but s/he has ignored you
14	You Suspect a child, who is one of your patients, may be subject to abuse at home
15	You suspect a pharmacist you work with is using prescription medicine from the controlled drugs cabinet without a prescription. You already talked to him/her about it but s/he clearly ignored you
16	A pediatric consultant has asked you to dispense, for a child, a dose of medicine that is outside the country national formulary limits, but is still not at a toxic level. You speak with the consultant about it who confirms these are his/her wishes
17	A consultant asks you to dispense a drug for an unreported indication and tells you s/he knows it is used for this indication with great effect in the USA
18	A member of the public comes to the pharmacy and asks for some medication for someone else who is waiting at home (eg his wife, who is in great distress). S/he tells you that the person for whom the medication is for has used the medicine several times before and is very familiar with it for example digoxin
19	A terminally ill patient asks you for a diagnosis or prognosis, telling you s/he does not feel the doctor is telling the whole truth. You know the full case history

issues when patients initiated the conversation. Most of the respondents reported that lack of time as the major barrier (85.9%) that limits them from explaining ethical issues to

their customers followed by lack of reliable resources (40%) and gap in ethical knowledge (37.7%). About 78.7% revealed that books were the primary ethical

**Table 2** Sociodemographic Characteristics of Study Participants, Amhara Region, Ethiopia, 2020 (n=305)

Variable	Categories	Frequency	Percent
Sex	Female	142	46.6
	Male	163	53.4
Age in years	20–25	204	66.9
	26–35	24	7.9
	36–40	40	13.1
	40–65	37	12.1
Marital status	Married	164	53.8
	Unmarried	141	46.2
Site of work	Private drug store	78	25.6
	Private pharmacy	212	69.5
	Red cross community pharmacy	15	6.9
Education level	Diploma (Pharmacy Technicians)	173	56.7
	Bachelor degree (Pharmacist)	113	37.0
	Masters and above (Pharmacist)	19	6.2
Work experience in years	1–2	27	8.9
	2–5	118	38.7
	6–10	110	36.1
	>10	50	16.1
Number of customers per day	10–50	82	26.9
	51–70	82	26.9
	71–100	75	24.6
	>100	66	21.6

reference materials available in their pharmacy or drug store followed by internet (29.8%) (Table 3).

## Response to Ethical Scenarios

The reporting rate of respondents is less than 50% for most scenarios. The most frequent scenarios reported were confidentiality related to identifying a drug used by someone else (Scenario 7, 66.6%), withholding truth and deliberately misleading a patient for compliance to treatment the pharmacist believed as important (Scenario 8, 57.7%), dispensing generic clinically equivalent drug (Scenario 2, 56.7%), disclosing confidential information for a parent (Scenario 12, 56.4%) and dealing with an over-the-counter medication request which is not needed and result no harm (Scenario 1, 55.7%). The least frequent scenarios encountered by the community pharmacy professionals were dispensing a prescription for an unreported indication (Scenario 17, 14.1%), suspected child abuse (Scenario 14, 15.7%), filling an overdose medication prescription against standard treatment guideline recommendation (Scenario 16, 22.6%) and a colleague suspected of taking controlled drug without prescription (Scenario 15, 25.6%) (Table 4).

## Factors Associated with Response to Scenarios

Sex, age, educational status, work experience, number of customers per day, working site, information about ethics and training about ethics were observed to have significant association with attitude and perceptions (scenarios) of community pharmacy professionals. Male sex (AOR = 0.44, 95% CI (0.26–0.74)), having ten years and above work experience (AOR = 2.41, 95% CI (1.42–4.08)), diploma educational status (AOR = 0.22, 95% CI (0.08–0.63)), training about ethics (AOR = 0.40, 95% CI (0.17–0.91)), and working in private pharmacy (AOR = 0.20, 95% CI (0.06–0.62)) were significantly associated with confidentiality (Scenario 19). Having ten years and above work experience (AOR = 0.27, 95% CI (0.14–0.50)), number of customers (10–50 patients per day) (AOR = 5.18, 95% CI (2.30–11.71)), working in private pharmacy (AOR = 4.46, 95% CI (1.02–19.53)), and having information about ethics (AOR = 0.23, 95% CI (0.08–0.68)) were determinant factors for prescribing generic clinically equivalent drug (Scenario 2). Number of customers (10–50 patients per day) (AOR = 2.62, 95% CI (1.09–6.31)), working in private drug store (AOR = 0.09, 95% CI (0.03–0.34)), working in private pharmacy (AOR = 0.23, 95% CI (0.08–0.70)), and having information about ethics (AOR = 0.30, 95% CI (0.13–0.64)) were significantly associated with about dispensing controlled drugs (Scenario 3). Having ten years and above work experience (AOR = 2.87, 95% CI (1.64–5.05)), ten up to fifty number of customers (AOR = 0.26, 95% CI (0.12–0.56)), diploma educational status (AOR = 10.23, 95% CI (1.26–83.24)), and having information about ethics (AOR = 0.27, 95% CI (0.19–0.81)) were significantly associated to behavioral change of friends to unethical act (Scenario 11) (Table 5A and B).

## Discussion

This study assessed ethical issues of community pharmacy professionals in an Ethiopian setting, the first of its kind in the country. It identified important baseline ethical concerns and paves the way for a wider and advanced investigation in the future. Our study revealed that two hundred and fifty-two (82.6%) respondents received previous continuous education on ethics which is relatively higher than the result reported from a study conducted in Central Saudi Arabia (72.3%).<sup>22</sup> A higher report of ever received ethics education in our study is not surprising because

**Table 3** General Information on Ethical Issues Among Community Pharmacy Professionals, Amhara Region, Ethiopia, 2020 (n=305)

Variable*	Categories*	Frequency	Percent
Ever received previous continuous education on ethics	Yes	252	82.6
	No	53	17.4
Ever accessed ethical information at practice site	Yes	274	89.8
	No	31	
Ever record ethical concerns in your pharmacy?	Yes	145	47.5
	No	160	52.5
If you record, how often do you discuss ethical issue with your customer?	Never	4	2.6
	Rarely	32	22.0
	Sometimes	60	41.3
	Often	22	15.7
	Very Often	27	18.4
The discussion of ethical issue is?	Self-initiated	121	39.7
	Patient-initiated conversation	212	69.5
	One time discussion	32	10.5
	Ongoing discussion	42	13.8
What are the barriers that limit you from explaining ethical issues with your customers?	Lack of time	262	85.9
	Lack of reliable resources	122	40
	Not interested in subject	68	22.3
	Lack of ethical knowledge	115	37.7
Which ethical reference is readily available in your pharmacy (if any)?	Books	240	78.7
	Brochures	68	22.3
	Internet web sites	91	29.8
	Computer databases	34	11.1
Which of the following ethical resources would be helpful in caring for your customers (check all that applies)?	Books	268	87.9
	Brochures	129	42.3
	Internet web sites	119	39.0
	Computer databases	95	31.1

Notes: \*Adapted from: Al-Arifi MN. Community pharmacist perception and attitude toward ethical issues at community pharmacy setting in central Saudi Arabia. *Saudi Pharm J.* 2014;22(4):315–325.<sup>22</sup> With permission from Elsevier. Creative Commons CC BY-NC-ND 3.0 (<https://creativecommons.org/licenses/by-nc-nd/3.0/legalcode>).

pharmacy law and ethics course is given in undergraduate education of pharmacy professionals. Educational intervention appeared to positively influence graduates' professional practice.<sup>31,32</sup> However, significant proportion of the participants (37.7%) in this study indicated lack of ethical knowledge as a barrier to discussing ethical issues with customers. This informs the adequacy and teaching approaches of ethics course in our country may be questionable and needs further investigation. A one-time and early exposure to ethical concepts might not also be enough. Whilst the foundation of ethical reasoning can be established in university studies, continuous professional development and practical exposure is needed to advance the skill.<sup>20,23</sup>

In the current study, two hundred and seventy-four (89.8%) participants had accessed ethical information at

the practice site. This is higher than the finding from Central Saudi Arabia (64.8%).<sup>22</sup> Al-Qudah et al (2019), in their study on community pharmacy ethical practice in two cities of Jordan, reported 56.6% and 24.3% of community pharmacists had ever accessed ethical information in their practice site in Amman and Irbid respectively.<sup>33</sup> One hundred and forty-five (47.5%) of our study participants had ever recorded ethical concerns in their working site. This is very much low in comparison with the study by Al-Arif MN (2014) where only 1.9% community pharmacists never recorded ethical issues.<sup>22</sup> Ethical concern recording in this study was also quite inferior to a study in Jordan.<sup>33</sup>

In our study, majority of the participants had reported that “lack of time” was the major barrier (85.9%) which hinder them to discuss ethical concerns with the customers

**Table 4** Response to Ethical Scenarios Among Community Pharmacy Professionals, Amhara Region, Ethiopia, 2020 (n=305)

Scenarios	Do Not Know N (%)	Never N (%)	Hardly Ever N (%)	Every Few Months N (%)	Once or Twice a Month N (%)	Once or Twice a Week N (%)	At Least Once a Day N (%)	Positive Respondents N (%)	Negative Respondents N (%)
1	41(13.4)	65(21.3)	29(9.5)	85(27.9)	24(7.9)	29(9.5)	32(10.5)	170(55.7)	135(44.3)
2	32(10.5)	63(20.7)	37(12.1)	52(17.0)	23(7.5)	35(11.5)	63(20.7)	173(56.7)	132(43.3)
3	40(13.1)	109(35.7)	44(14.4)	51(16.7)	47(15.4)	3(1.0)	11(3.6)	112(36.7)	193(63.3)
4	71(23.3)	80(26.2)	37(12.1)	45(14.8)	30(9.8)	8(2.6)	34(11.1)	117(38.4)	188(61.6)
5	63(20.7)	71(23.3)	45(14.8)	54(17.7)	22(7.2)	24(7.9)	26(8.5)	126(41.3)	179(58.7)
6	61(20.0)	68(22.3)	42(13.8)	53(17.4)	25(8.2)	25(8.2)	31(10.2)	134(43.9)	171(56.1)
7	25(8.2)	40(13.1)	37(12.1)	65(21.3)	41(13.4)	45(14.8)	52(17.0)	203(66.6)	102(33.4)
8	32(10.5)	56(18.4)	41(13.4)	44(14.4)	62(20.3)	15(4.9)	55(18.0)	176(57.7)	129(42.3)
9	91(29.8)	78(25.6)	30(9.8)	41(13.4)	24(7.9)	18(5.9)	23(7.5)	106(34.8)	199(65.2)
10	68(22.3)	86(28.2)	53(17.4)	51(16.7)	5(1.6)	22(7.2)	20(6.6)	98(32.1)	207(67.9)
11	73(23.9)	74(24.3)	66(21.6)	25(8.2)	21(6.9)	22(7.2)	24(7.9)	92(30.2)	213(69.8)
12	24(7.9)	80(26.2)	29(9.5)	62(20.3)	33(10.8)	41(13.4)	36(11.8)	172(56.4)	133(43.6)
13	59(19.3)	100(32.8)	45(14.8)	39(12.8)	24(7.9)	9(3.0)	29(9.5)	101(33.1)	204(66.9)
14	123(40.3)	109(35.7)	25(8.2)	26(8.5)	7(2.3)	3(1.0)	12(3.9)	48(15.7)	257(84.3)
15	103(33.8)	98(32.1)	26(8.5)	35(11.5)	22(1.7)	8(2.6)	13(4.3)	78(25.6)	227(74.4)
16	65(21.3)	126(41.3)	44(14.4)	20(6.6)	25(8.2)	17(5.6)	8(2.6)	70(22.9)	235(77.1)
17	61(20.0)	152(49.8)	49(16.1)	16(5.2)	13(4.3)	3(1.0)	11(3.6)	43(14.1)	262(85.9)
18	51(16.7)	81(26.6)	45(14.8)	58(19.0)	23(7.5)	22(7.2)	25(8.2)	128(42.0)	177(58.0)
19	51(16.7)	83(26.6)	45(14.8)	59(19.0)	20(7.5)	22(7.2)	25(8.2)	126(41.3)	179(58.7)

followed by “lack of reliable resources” (40.0%) and “poor ethical knowledge” (37.7%). This finding is similar with other studies in Jordan,<sup>33</sup> Saudi Arabia<sup>22</sup> and Scotland.<sup>34</sup> However, in another study conducted in Iran poor experience with ethical issues and absence of trust were reported to be major barriers against explaining ethical issues.<sup>35</sup> The majority of the participants (78.7%) reported that books were the primary ethical reference materials available in their pharmacy followed by internet (29.8%). The preferred resources for referring ethical information were comparable to a study in Saudi Arabia.<sup>22</sup> Contrary to this, according to the study in Jordan, pharmacist mostly use internet websites to help them in resolving ethical issues concerning their patients.<sup>33</sup>

Out of the 19 ethical scenarios, for only 5 scenarios, more than 50% of the community pharmacy professionals reported ever encountered such cases. This could be due to the ethical inattentiveness of the professionals which makes it difficult to recall ethical issues in their work. Cooper et al (2007) revealed ethical passivity presents a formidable challenge to ethical pharmacy practice. It is expressed in the form of inability to identify and recount ethical problems, failure to articulate value concepts,

giving concern to legal prosecution or disciplinary action in relation to how an ethical problem should be dealt, and hesitation from acting upon one has decided.<sup>24</sup> Irrespective of how frequent the encounter is, Scenario 7, 8, 12, 1 and 2 were the most commonly detected ethical issues by our respondents in decreasing order. On the other hand, Scenario 17, 14, 16 and 15 were least commonly detected ethical issues in increasing order. There is discrepancy in the frequency of detection for each scenarios in our study and what was reported in previous studies elsewhere.<sup>14,22</sup> This could be attributed to difference in focus area of ethical training, code of ethics, legal framework, religious and cultural values, and financial concerns in the countries. Although recalling ever facing of the ethical scenarios does not mean community pharmacy professionals expressed their agreement with a specific decision or action, indirect implications can be inferred. Scenario 7 and 12 may indicate lack of concern to confidentiality of patient information. Patient autonomy was also found to be compromised as in the case of Scenario 8. Based on Scenario 1, financial pressure and customer satisfaction outweighed ethical values. In Ethiopia, generic substitution is legally permitted for pharmacy professionals and this may be a driving factor for Scenario 2 to be within the

**Table 5** Factors Associated with Response to Ethical Scenarios Among Community Pharmacy Professionals (Part A- Scenario 1 to 10) and (Part B- Scenario 11 to 19), Amhara Region, Ethiopia, 2020 (n=305)

<b>(A) Factors Associated with Ethical Scenarios 1 to 10 Among Community Pharmacy Professionals Amhara Region, Ethiopia, 2020 (n=305)</b>										
Case Scenarios										
Variables	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Sex										
Male		1.59(0.87, 2.93)		0.39(0.22,0.68) ***	0.60(0.38,0.96) *					0.53(0.31,0.89) *
Female	I	I	I	I	I					I
Age (years)										
20–25		1.12(0.43,2.89)					0.23(0.08,0.62) **	0.23(0.09,0.61) **		
26–35		1.19(0.33,4.24)					0.18(0.05,0.60) **	0.27(0.07,1.01)		
36–40		0.97(0.30,3.11)					0.55(0.17,1.81)	0.25(0.08,0.81) *		
>40	I	I	I	I	I		I	I		
Educational status										
Diploma		1.69(0.56,5.12)		1.26(0.42,3.72)				2.05(0.70,6.02)		
Bachelor degree		0.38(0.12,1.06)		0.91(0.31, 2.66)				1.09(0.39,3.03)		
Masters and above	I	I	I	I	I			I		
Information about ethics										
Yes		0.23(0.08,0.68) **	0.30(0.13,0.64) ***		0.50(0.24,1.08)			0.51(0.17,1.58)	0.38(0.17,0.83) *	
No	I	I	I	I	I			I	I	
Training about ethics										
Yes							0.48(0.18,1.28)	5.40(2.25,12.98) ***		5.60(2.24,14.05) ***
No	I	I	I	I	I		I	I		I
Work experience										
<10 years	I	I	I	I	I					I
≥10 years	1.39 (0.88,2.20) ***	0.27(0.14,0.50) ***		1.71(1.00,2.91)						0.82(0.49,1.36)
Work site										
Private drug store		4.46 (1.02,19.53) *	0.09(0.03,0.34) ***	0.39(0.10,1.60)				0.74(0.16,3.34)		
Private pharmacy		0.80(0.23,2.72)	0.23(0.08,0.70) *	1.15(0.36,3.71)				0.52(0.12,2.14)		
Red cross community pharmacy	I	I	I	I	I			I		



<b>(B) Factors Associated with Ethical Scenarios 11 to 19 Among Community Pharmacy Professionals Amhara Region, Ethiopia, 2020 (n=305)</b>														
Case Scenario Part 2														
Variables	Categories	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q18	Q19	Q18	Q19
Sex	Male		0.62(0.38,1.01)	0.59(0.34,1.01)	0.34(0.18,0.67) **	0.23 (0.13,0.41) ***	0.29 (0.16,0.52) ***	0.15(0.06,0.33) ***	0.75(0.45,1.23)	0.44(0.26,0.74) **				
	Female													
Age (years)	20-25					0.29 (0.13,0.65) **			0.85(0.40,1.83)					
	26-35					0.68 (0.18,2.55)			1.23(0.42,3.67)					
	36-40					0.82 (0.30,2.29)			0.18(0.06,0.56) **					
Educational status	>40													
	Diploma	2.54 (1.29,4.87) **	2.62(1.09, 6.31) *	5.18(2.30,11.71) ***	0.20(0.09,0.44) ***			1.44(0.67,3.09)	0.35(0.17,0.70) **	0.64(0.32,1.29)				
	Bachelor degree	2.26 (1.17,4.40) *	0.45(0.21,0.98) *	2.86(1.34,6.11) ***	0.63(0.31,1.28)			0.86(0.41,1.79)	0.52(0.26,1.01)	0.46(0.22,0.95) *				
Masters and above	71-100	1.75 (0.89,3.42)	0.50(0.23,1.07)	1.16(0.53,2.59)	0.23(0.11,0.49)			0.44, (0.20,0.93) *	0.51(0.26,1.02)	0.39(0.18,0.82) *				
	>100													

(Continued)

**Table 5 (Continued).**

Information about ethics	Yes	0.27 (0.19,0.81) *					0.73 (0.24,2.24)	7.20(0.94,55.32)	0.74(0.25,2.15)	1.74(0.60,5.07)
	No	I					I	I	I	I
Training about ethics	Yes	1.04 (0.43,2.48)		1.75(0.86,3.56)			0.69 (0.28,1.70)		0.32(0.14,0.73) *	0.40(0.17,0.91) *
	No	I		I			I		I	I
Work experience	<10 years	I	I			I				I
	≥10 years	2.87 (1.64,5.03) *	1.68(1.04,2.71) *			2.53(1.29,4.98) *				2.41(1.42,4.08) ***
Work site	Private drug store		0.42(0.10,1.64)	3.69(0.78,17.46)						0.37(0.10,1.32)
	Private pharmacy		0.24(0.07,0.89) *	1.54(0.38,6.22)						0.20 (0.06,0.62) ***
	Red cross community pharmacy		I	I						I
Number of customers	10–50	0.26 (0.12,0.56) **		0.99(0.43,2.31)			0.29 (0.13,0.64) **		1.72(0.84,3.54)	
	51–70	0.42 (0.20,0.88) *		2.33(1.06,5.11) *			0.52 (0.24,1.12)		1.67(0.82,3.41)	
	71–100	0.23 (0.10,0.50) ***		2.47(1.12,5.47) *			0.37 (0.16,0.84) *		1.11(0.52,2.35)	
	>100	I		I			I		I	

**Notes:** I = reference, S-scenario \*p-value<0.05, \*\*p-value<0.01 and \*\*\*p-value<0.001, S= scenario, S6 was empty as no factor was associated. The indicated odds ratio and confidence intervals are for the adjusted odds ratio and confidence limits at final regression models.

top five encountered issue and the most frequent daily detected of all 19 scenarios.

Several factors contributed to the occurrence of poor attitude and perception towards different scenarios. Sex, age, educational status, work experience, number of customers per day, working site, information about ethics and training about ethics were observed to have significant association with attitude and perceptions (scenarios) of community pharmacy professionals. In the current study, female community pharmacy professionals encountered more ethical issues regarding confidentiality (Scenario 19) as compared to male participants. This finding is the same with other study.<sup>36</sup> Work experience was also another significant factor impacting attitude and perception of ethical issue. In the current study, experienced study subjects (more than 10 years) encountered ethical dilemma regarding confidentiality than those with lesser experience. This is against previous findings.<sup>36,37</sup> Those who received training about ethics were less likely to encounter ethical dilemma as compared to those with no training. This is not surprising as training will help pharmacy professionals on how to handle ethical dilemma. Educational status was found inconsistently associated with different ethical questions. For example, it was inversely associated with confidentiality (Scenario 19) where as it was positively associated with Scenario 11. It was not associated with other case scenarios. Similar to these finding, several previous studies indicated variation about association of educational status with attitude and perception.<sup>38-40</sup> In this study, number of customers who visit the particular pharmacy, prior information about ethics and working in either of the public or private pharmacy were also factors identified to have an impact on attitude and perception.

This study has its own limitations. The study is confined to selected towns in Amhara region. So, our finding cannot be generalized to community pharmacy practice in the whole region or country level. Recall bias among community pharmacy professionals is also one of the drawbacks of the study. We assessed whether and how frequent community pharmacy professionals encountered selected ethical scenarios as a reflection of attitude and perception. However, had we used a Likert scale questionnaire concerning their agreement with specific decision on ethical scenarios, the attitude and perception of the pharmacy professionals would have been clearly identified. The options provided as barriers preventing ethical discussion with customers are limited which narrowed down multitude of factors affecting ethical decision-making.

The adequacy of undergraduate ethical education and the practical application of the Ethiopian code of ethics for pharmacy professionals were not assessed. We could not get a similar study from western countries for comparison purpose.

## Conclusion

Most study participants had taken continuous education and ever accessed ethical information at their practice site. Community pharmacy professionals poorly recorded ethical problems they encountered. Lack of time was the major barrier that limits them to discuss ethical concerns with their customers followed by absence of reliable resources and poor ethical knowledge. Response to scenarios implied poor attitude and perception towards ethical issues. Interventions should be devised to uphold ethical awareness of community pharmacy professionals. A large-scale study is recommended to investigate the adequacy and teaching approaches of ethics course in undergraduate pharmacy education, practical application of pharmacy professionals' code of ethics, and ethical decision-making.

## Data Sharing Statement

The dataset of this research is found at the primary author (Wudneh Simegn) and it can be provided up on request.

## Ethical Consideration

We have obtained ethical approval and letter of cooperation from the School of Pharmacy, University of Gondar. All the study participants were included voluntarily after getting informed consent. Written consent was obtained from the participants. All respondents were informed the confidentiality of information (no identifiers), the purpose of the research and its importance. They were also told not to respond to unwanted questions, or not to participate totally.

## Acknowledgments

The authors acknowledged the University of Gondar, study participants, and study facilitators.

## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to

which the article has been submitted; and agree to be accountable for all aspects of the work.

## Funding

This research was not funded by any agent.

## Disclosure

All authors declare no conflicts of interest for this work.

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