

Assessment of Adherence to the Code of Ethics and Related Determinants Among Healthcare Professionals in Public Hospitals of Central Gondar Zone, Northwest Ethiopia, 2021: A Mixed-Methods Study

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Abstract

Ethics examines the principles that distinguish right from wrong in human conduct, and in healthcare, ethical practice is a core part of daily professional activities. Ensuring consistent and standardized ethical behavior among healthcare workers is essential. This study aimed to investigate the adherence to the code of ethics and the factors influencing it among health professionals in public hospitals of Central Gondar Zone, Northwest Ethiopia, in 2021. A cross-sectional study using a mixed-methods design was carried out among 631 health professionals from public hospitals in Central Gondar Zone. Quantitative data were collected via pre-tested self-administered questionnaires, and qualitative insights were obtained through key informant interviews using a semi-structured guide. Variables with a p-value <0.2 in binary logistic regression were further analyzed using multivariable logistic regression, with p-value <0.05 and adjusted odds ratio (AOR) used to determine significance. Thematic content analysis was applied to qualitative data. Findings showed that only 286 (46.7 percent) of participants demonstrated satisfactory adherence to the code of ethics. Factors positively associated with ethical practice included strong ethical knowledge (AOR = 1.95, 95 percent CI: 1.37–2.77), a supportive attitude toward ethical standards (AOR = 1.55, 95 percent CI: 1.11–2.16), and higher job satisfaction (AOR = 1.45, 95 percent CI: 1.04–2.04). The practice of healthcare ethics among professionals in Central Gondar Zone public hospitals was generally inadequate. Enhancing ethical practice will require hands-on training, consistent supervision, access to necessary medical tools, a conducive work environment, and improvements in professional recognition mechanisms.

Keywords: Ethics, Healthcare, Public hospitals, Ethiopia, Central Gondar Zone

Introduction

Ethics is the study of moral principles guiding human behavior, aiming to determine what actions are right or wrong [1]. It encompasses not only what ought to be done but also emphasizes performing duties with compassion, respect, and care [2, 3]. The Geneva Declaration of the

World Medical Association and the International Code of Medical Ethics require physicians to act in the best interest of their patients, highlighting the importance of understanding patients' physical and psychological conditions during care [4].

Healthcare settings frequently present ethical dilemmas. Professionals often encounter challenges related to end-of-life decisions, resuscitation, informed consent, patient competence, treatment planning, and overall organizational healthcare management [5, 6]. Ethical practice is considered an integral component of daily responsibilities for healthcare workers [6].

Healthcare ethics is a critical aspect of professional conduct for health providers. Poor adherence to ethical

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standards, inadequate management, and mishandling of cases can compromise service quality. Unethical behaviors have been reported among medical students, residents, and nurses across various settings [7]. Although ethical principles in healthcare are globally recognized, countries may adapt and interpret these standards according to their cultural, philosophical, and spiritual perspectives [8].

In Ethiopia, the professional Code of Ethics was established through Regulation No. 299/2013 to safeguard client welfare. Following this, the Federal Health Professionals Ethics Committee (FHPEC) was created in 2014. Together with the Ethiopian Food, Medicine, and Healthcare Administration and Control Authority (EFMHACA), the committee is responsible for investigating complaints, assessing professional competence, and addressing ethical issues among health workers [9].

Rising public awareness of healthcare professionals' responsibilities has led to more complaints and heightened scrutiny of healthcare services. Changes in patient-provider relationships and healthcare service delivery have further influenced ethical practice [10]. Poor adherence to ethical standards, inadequate management, and failure to address errors can harm patient-provider relationships and reduce service quality [7, 11].

For example, a study in Nepal among 1,600 resident doctors and frontline healthcare leaders found that 95% routinely faced unethical or disruptive behaviors, including verbal abuse, disrespect, and neglect of duties, affecting nurses, physicians, and administrators alike [12]. Limited knowledge of healthcare ethics contributes to unethical practices in daily professional activities [13], and grievances against healthcare practitioners have become increasingly concerning [10, 14]. Job dissatisfaction and poor working conditions are additional factors that can lead to unethical behaviors [15]. Despite the existence of codes and regulations, reports of unethical conduct remain common [1]. Contributing factors include insufficient access to healthcare information, inadequate supervision, and weak compliance mechanisms [16].

In Ethiopia, nurses frequently report dissatisfaction due to low salaries, lack of incentives and continuing education, heavy workloads, lack of respect from colleagues or society, and insufficient insurance coverage, all of which negatively impact adherence to ethical standards [17]. Physicians and nurses, despite

differences in training, responsibilities, and perceived professional norms, are central to healthcare delivery. Therefore, standardization and consistency in ethical practice across all healthcare providers is a critical and urgent need [18-20].

In practice, whether intentional or unintentional, many healthcare workers, particularly frontline staff, have committed unethical actions [6, 21, 22]. Scientific evidence and guidance are essential to address these issues. Overall, there is limited research on how the code of ethics is applied by health professionals in real-world healthcare settings. This study aims to assess the level of adherence to ethical codes and identify associated factors among health professionals in public hospitals of Central Gondar Zone, providing recommendations to improve ethical practice and enhance quality healthcare delivery.

Materials and Methods

Study design, setting, and participants

A facility-based cross-sectional study combining quantitative and qualitative methods was carried out from March to April 2021 to evaluate adherence to the code of ethics among healthcare professionals in public hospitals of the Central Gondar Zone, Ethiopia. The zone is situated 738 km northwest of Addis Ababa (the national capital) and 180 km from Bahir Dar, the capital of Amhara Region. At the time, the zone comprised 94 health centers, 154 health posts, and ten public hospitals, staffed by 430 physicians and 772 nurses, serving a catchment population of approximately 7 million people as referral, treatment, and teaching facilities.

The source population included all physicians and nurses employed in public hospitals across the Central Gondar Zone for both quantitative and qualitative components. The study population consisted of those working in the selected hospitals, excluding professionals with less than six months of work experience.

Sample size determination and sampling procedure

The sample size for assessing ethical practice was calculated using the single population proportion formula, assuming a 95% confidence level, a 45.6% proportion of ethical practice (derived from a previous study in Bale Zone, Oromia Region [23]), a 5% margin of error, a design effect of 1.5, and a 10% non-response rate. This yielded an initial sample of 573, which increased to 631 after adding the non-response adjustment.

A multistage sampling approach was employed. First, five hospitals (50% of the total) were selected using simple random sampling [24]. Next, a comprehensive list of eligible physicians and nurses was obtained from each selected hospital's human resource records to serve as the

sampling frame. The calculated sample size was then proportionally allocated to each hospital according to the number of eligible staff. Finally, participants from each hospital were chosen through simple random sampling using OpenEpi Random Program version 3 (**Figure 1**).

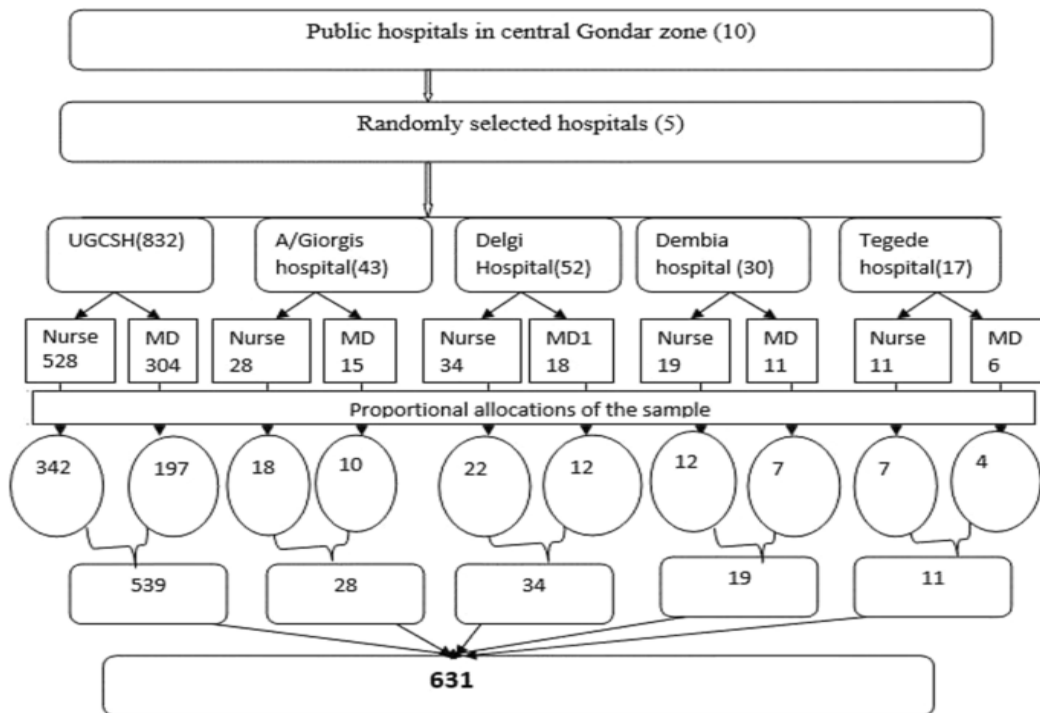


Figure 1. Schematic presentation of the sampling procedure for health professionals in public hospitals of Central Gondar Zone, Ethiopia, 2021.

Key: UGCSH – University of Gondar Comprehensive Specialized Hospital; A/Giorgis – Amba Giworgis General Hospital; MD – Medical Doctors.

For the qualitative component, sample size was determined by the principle of data saturation. Participants were purposively selected based on their years of experience and leadership roles in the hospitals. Accordingly, medical directors, matron nurses, and case managers were recruited for key informant interviews (KIIs).

Variables and measurement

The dependent variable was the level of practice of the healthcare ethics code. It was assessed using a standardized questionnaire consisting of 26 items answered on a 5-point Likert scale (**Table 1**). Respondents who scored $\geq 75\%$ of the total possible points were classified as having “good practice,” whereas those scoring $< 75\%$ were categorized as having “poor practice” [8].

Table 1. Questions used to assess the practice of the code of health care ethics among health professionals in public hospitals of Central Gondar Zone, Northwest Ethiopia, 2021

No.	Question	Response options (5-point Likert scale)
1	How frequently do you show interest in updating your knowledge of healthcare ethics?	

2	How often do you obtain informed consent from patients before providing any medical service?	
3	How often do you believe health professionals should serve remote and underserved communities?	
4	How often is consent required only for surgical procedures and not for diagnostic tests or medications? (Reverse scored)	
5	How often should children be treated only with parental consent?	
6	How often should health professionals provide care regardless of the patient's own views or preferences? (Reverse scored)	
7	How often is it acceptable for health professionals to refuse to treat a violent patient?	
8	How often do you uphold patient confidentiality, privacy, autonomy, and dignity?	
9	How often should close relatives always be informed about a patient's condition without patient consent? (Reverse scored)	
10	How often is ethical behavior important only to avoid legal consequences? (Reverse scored)	5 = Always; 4 = Very often; 3 = Sometimes; 2 = Rarely; 1 = Never
11	How often do you provide services primarily for your own benefit rather than the patient's needs? (Reverse scored)	
12	How often do you collaborate with or support unlicensed health practitioners? (Reverse scored)	
13	How often do you deliver the same standard of care during overtime as during regular hours?	
14	How often do you give preferential treatment to patients based on personal relationships formed at other facilities? (Reverse scored)	
15	How often do you use secret or undisclosed remedies when treating patients? (Reverse scored)	
16	How often do you use only medical devices, technologies, or interventions that have been scientifically validated?	
17	How often do you refuse to provide legally permitted services (e.g., contraceptives, legal abortion, blood transfusion) because of personal beliefs? (Reverse scored)	
18	How often do you properly sign and record your name on all official patient-related documents (lab requests, prescriptions, certificates, medical records, etc.)?	
19	How often is it acceptable to document procedures or actions that were not actually performed, as long as documentation is complete? (Reverse scored)	
20	How often do you issue accurate and complete sick-leave certificates or medical certificates?	
21	How often do you prescribe medications whose composition and pharmacological effects you do not fully know? (Reverse scored)	
22	How often do you prescribe medicines not included in the National Medicines List without strong justification? (Reverse scored)	
23	How often should a patient who wishes to die be actively helped to do so, regardless of their condition? (Reverse scored)	
24	How often do you report observed impairment in colleagues to the appropriate authority?	
25	How often do you self-report your own impairment to the appropriate authority if you are aware of it?	

- 26 How often do you report unethical or unprofessional conduct by another health professional to the relevant body?

The study considered several independent variables, including socio-demographic characteristics (age, gender, religion, occupation, education level, monthly income, and work experience), factors related to the institution (such as training received, type of healthcare facility, existence of policies, and guideline accessibility), personal factors (knowledge, attitudes,

work experience, and job satisfaction), and elements tied to professional ethics (ethical dilemmas and ethical issues). Participants' understanding of the code of ethics was measured through nine yes/no questions regarding its application (**Table 2**), with those scoring 75% or higher deemed knowledgeable, and those below 75% regarded as lacking sufficient knowledge [8].

Table 2. Knowledge-related questions of health professionals regarding the practice of health care ethics in public hospitals in Central Gondar Zone, Northwest Ethiopia, 2021

No.	Item (Knowledge Assessment Questions)	Response Options
1	Are you aware of the existence of a professional code of ethics for health professionals?	1. Yes 2. No
2	(If yes to Q1) Do you consider professional ethics an important topic in health care practice?	1. Yes 2. No
3	Should the rights of patients always be respected and upheld?	1. Yes 2. No
4	Is it important to disclose a patient's medical information to a third party only with proper authorization?	1. Yes 2. No
5	Is establishing a trusting and friendly relationship with patients important?	1. Yes 2. No
6	Does the patient have the right to be fully informed about his/her health condition and diagnosis?	1. Yes 2. No
7	Can unethical professional conduct result in legal consequences?	1. Yes 2. No
8	Should health professionals assist patients who express a desire to end their lives (euthanasia)?	1. Yes 2. No
9	Should medical errors be disclosed to patients only when they cause serious harm?	1. Yes 2. No

Attitude toward the code of ethics was evaluated using 14 questions rated on a 5-point Likert scale. Participants who correctly responded to at least 75% of these items

were considered to have a favorable attitude, whereas those scoring below 75% were classified as having an unfavorable attitude (**Table 3**) [8].

Table 3. Questions assessing healthcare professionals' attitudes toward health care ethics in public hospitals, Central Gondar Zone, Northwest Ethiopia, 2021

Questions	Response Categories
Acting ethically is the only way to prevent legal issues	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
The preferences of patients should always be followed	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
Health professionals should prioritize what is best, even if it goes against the patient's choice	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
Patients should always be informed if an error or problem occurs	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
Confidential patient information may only be shared with the patient's explicit permission	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
In modern medical practice, confidentiality is irrelevant and can be disregarded	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
Family members should always be informed about the patient's condition	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
Consent is required only for surgeries, not for tests or medications	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree

Always obtain parental consent before treating a child	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
Health professionals should not tolerate violence toward patients	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
It is acceptable to prioritize socially influential patients over others	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
Reporting a colleague's unethical behavior is the correct action	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
Patients refusing treatment for personal or religious reasons should be advised to seek care elsewhere	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
Health professionals should actively resolve conflicts with other healthcare providers	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree

Job satisfaction was measured using nine items addressing various aspects of work, with participants considered satisfied if they scored 50% or higher, and unsatisfied if their score was below 50% [25].

Health professionals were defined as individuals who had completed their medical or nursing degrees from accredited universities or colleges.

Ethical dilemmas were described as challenges that interfere with effective decision-making and create strained working relationships among staff, often arising from resource limitations, negative staff attitudes, conflicts between ethical principles, personal values, or religious beliefs.

Data collection

Both quantitative and qualitative data were gathered simultaneously. Two BSc nurses conducted the quantitative survey, while a health officer supervised the process. All data collectors and the supervisor had prior experience in data collection, and the principal investigator conducted the qualitative interviews.

Data quality assurance

Data collectors received two days of training on proper data collection procedures. A pre-test involving 5% of participants was conducted at a nearby hospital to refine the tools. During data collection, the principal investigator and supervisor reviewed completed questionnaires daily to ensure completeness. For qualitative data, the principal investigator transcribed recordings and verified consistency with interview notes. Key informant interviews (KIIs) continued until no new insights emerged.

Data processing and analysis

Quantitative data were entered into Epi-Info version 7.0 and analyzed in SPSS version 20, with thorough cleaning to identify and correct errors or missing values.

Qualitative recordings and notes were manually transcribed, reviewed, and analyzed thematically to identify major patterns. Descriptive statistics were summarized in tables and text. Binary logistic regression was used to explore associations, with model adequacy checked via the Hosmer–Lemeshow test and multicollinearity assessed through the variance inflation factor. Variables with a p -value ≤ 0.05 in multivariable logistic regression, presented with adjusted odds ratios (AOR) and 95% confidence intervals (CI), were considered statistically significant.

Results and Discussion

Socio-demographic characteristics of participants

A total of 613 health professionals participated, yielding a 97.15% response rate. Of these, 332 (54.2%) were male, and 376 (61.9%) were aged between 30 and 39 years. The majority (88.4%) held a first degree, and 226 (36.9%) reported 4–8 years of professional experience (Table 4).

Table 4. Socio-demographic characteristics of health professionals (n = 613)

Variable	Category	Percentage (%)	Frequency (n)
Sex	Male	54.2	332
	Female	45.8	281
Religion	Orthodox	78.8	483
	Muslim	14.4	88
	Protestant	6.4	39
	Catholic	0.5	3
	20–29	30.5	187
Age (years)	30–39	61.9	376
	40–50	8.2	50
Marital status	Married	46.7	286
	Single	46.7	286
	Divorced	6.2	38
	Widowed	0.3	2

	Separated	0.1	1
Education level	Diploma	5.1	31
	First degree	88.4	542
	Master's	2.4	15
	Specialist	3.4	21
	Subspecialist	0.7	4
Profession	Medical doctors	36.4	223
	Nurses	63.6	390
Work experience (years)	<4	31.5	193
	4–8	36.9	226
	>8	31.5	194
Monthly income (ETB)	3,000–5,000	7.5	46
	5,001–7,000	26.6	163
	7,001–26,000	65.9	404

Profession-related factors

Among the participants, 515 (84 percent) reported being satisfied with their current profession, and 549 (89.6 percent) indicated that they had chosen their profession at the time of university enrollment. The majority (80.9%) expressed willingness to recommend their profession to others. Notably, 188 (30.7 percent) of respondents were unaware of the presence of an ethics committee in their hospitals. Among those who were aware of the ethics committee, 207 (48.7 percent) identified “positive corrective measures” as the committee’s main responsibility, while 11 (2.6 percent) and 173 (40.7 percent) cited training and advisory roles,

respectively; the remaining 34 (8 percent) indicated that the committee’s duty involved punishment.

Regarding sources of information about professional ethics, 486 (79.3 percent) reported learning primarily from their college or university, while the remaining 127 (20.7 percent) gained knowledge through training programs, workplace exposure, or professional discussions. Concerning ethics education as part of the curriculum, 507 (82.7percent) felt the instruction was insufficient, 97 (15.8 percent) considered it adequate, and 9 (1.5 percent) could not recall its adequacy.

In terms of professional conduct, 147 (24 percent) of participants had been accused of unethical behavior. Truth-telling was reported as the most frequent ethical challenge, affecting 229 (62.4 percent) respondents. Among perceived unethical practices, 253 (41.3 percent) attributed them to inadequate salaries. Only 162 (26.4 percent) stated that hospital administrators emphasized professional ethics as a priority, and 317 (51.7 percent) believed that promotion decisions did not account for ethical conduct.

Regarding workplace relationships, 443 (72.3 percent) indicated that interactions with managers negatively influenced ethical practice, and 172 (28.1 percent) frequently experienced conflicts with colleagues. Substance use was reported by 170 (27.7 percent) of participants, among whom 82 (48.2 percent) chewed khat and 49 (28.8 percent) consumed alcohol (**Table 5**).

Table 5. Professional and work-related characteristics of healthcare providers in public hospitals of Central Gondar Zone, 2021 (n = 613)

Variables	Categories	Percentage (%)	Frequency (n)
Satisfaction with current profession	Satisfied	84	515
	Not satisfied	16	98
Was the current profession your first choice?	Yes	89.6	549
	No	10.4	64
Would you recommend your profession to others?	Yes	80.9	496
	No	19.1	117
Primary source of knowledge about the code of ethics	University/college	79.3	486
	Other sources*	20.7	127
Awareness of the existence of an ethics committee	Yes	69.3	425
	No	30.7	188
Perceived main role of the ethics committee (among those aware, n=425)	Taking corrective measures	48.7	207
	Imposing punishment	8	34
	Providing advice	40.7	173
	Offering training	2.6	11
Perception of ethics curriculum adequacy during training	Adequate	15.8	97
	Inadequate	82.7	507

	Don't remember	1.5	9
Ever encountered ethical issues in practice	Yes	67.4	413
	No	32.6	200
Main perceived causes of unethical practices (multiple responses possible)	Heavy workload	38.8	338
	Negligence	10.8	66
	Lack of knowledge	9.1	56
	Low salary	41.3	253
Ever been accused of an ethical violation	Yes	24	147
	No	76.0	466
Ever faced an ethical dilemma in practice	Yes	59.9	367
	No	40.1	246
Most common types of ethical dilemmas encountered (among those who faced dilemmas, n=367)	Religious/confidentiality conflicts	1.6	6
	Inappropriate discharge	31.6	116
	Truth-telling issues	62.4	229
	End-of-life decisions	4.4	16
Promotion decisions take ethical conduct into account	Yes	51.4	315
	No	48.6	298
Poor relationships with managers adversely affect ethical practice	Yes	72.3	443
	No	27.7	170
Hospital administration clearly communicates ethics as a priority	Yes	26.4	162
	No	73.6	451
Frequent conflicts with colleagues	Yes	28.1	172
	No	71.9	441
Experienced harassment from patients or families	Yes	45.5	279
	No	54.5	334
Ever accepted a gift from a patient	Yes	6.4	39
	No	93.6	574
History of substance use	Yes	27.7	170
	No	72.3	443
Type of substance used (among users, n=170)	Alcohol	28.8	49
	Khat	48.2	82
	Cigarette	12.9	22
	Illicit drugs	10.1	17
Overall job satisfaction	Satisfied	51.7	317
	Dissatisfied	48.3	296

Knowledge and attitude regarding health care ethics

The assessment of health professionals' understanding and perspective on health care ethics revealed that 392 (63.9%) demonstrated good knowledge of healthcare ethics, while 319 (52%) exhibited a positive attitude toward professional ethical practices (Table 6).

Table 6. Knowledge, attitude, and practice of the code of ethics among health professionals in Central Gondar Zone Public Hospitals, 2021 (n = 613)

Variables	Percentage (%)	Frequency (n)
Knowledge		

Adequate	63.9	392
Inadequate	36.1	221
Attitude		
Positive	52.0	319
Negative	48.0	294
Practice		
Proper Practice	46.7	286
Improper Practice	53.3	327

Knowledge and practice of health care ethics

Key informants highlighted that, although health professionals were aware of the code of healthcare ethics,

they often failed to apply it correctly in practice. All health professionals had received foundational knowledge about health care ethics during their college or university education. However, instead of implementing this knowledge scientifically, many tended to follow traditional practices from their surroundings, often performing tasks carelessly.

(30-year-old male, Medical Director, one of the selected hospitals)

While knowledge can be subjective and difficult to measure without formal assessment, it was generally believed that all health professionals had prior exposure to health care ethics through their formal education and subsequent training on the code of ethics.

(28-year-old female, Case Manager, one hospital)

Practice toward health care ethics

The proportion of health professionals demonstrating actions aligned with ethical health care practices was 46.7% (95% CI: 42.7, 50.6) (**Table 6**). Key informants noted that, despite minor improvements in ethical practice, significant implementation challenges persisted. Major gaps included insufficient information, guidance, and supervision; lack of respect for patient rights and autonomy; inadequate explanation and documentation of informed consent; and instances of prescribing medication or conducting physical examinations without patient consultation, except in surgical contexts. Additionally, some health professionals failed to provide services at the appropriate location or time within the hospital.

Obtaining patient consent and providing adequate information about health services were reported as the most commonly violated ethical principles. Many departments did not consistently obtain consent from patients, with exceptions mainly limited to pre-surgical procedures.

(33-year-old matron nurse, one selected hospital)

Institutional-related factors

Among the study participants, 423 (69%) worked in the specialized hospital. A total of 573 (93.5%) health professionals were aware of the existence of healthcare ethics-related documents within their institutions. Compliance with professional standards and regulations was reported by 391 (63.8%) participants, while 389 (63.5%) were aware of these guidelines. Moreover, participants confirmed that those who adhered to hospital rules and standards were more successful, with 469 (76.5%) following institutional policies and regulations (**Table 7**). These findings were further corroborated by key informant interviews.

Despite a generally positive attitude toward ethical practice, health professionals expressed frustration due to political interference in hospital management and inadequate medical equipment. Recognition and promotion often depended on personal rapport with managers rather than actual responsibilities and performance. Health professionals with longer work experience tended to implement the principles of health care ethics more effectively.

(38-year-old male, Matron Nurse, one of the selected hospitals)

Table 7. Institutional Factors Influencing Adherence to Ethical Codes among Health Professionals (n = 613)

Variables	Categories	Percentage (%)	Frequency (n)
Type of health facility	Specialized	80.8	495
	Primary	19.2	118
Availability of a health ethics document/policy in the facility	Yes	63.5	389
	No	36.5	224
Prioritizing compliance with laws and professional standards	Yes	63.8	391
	No	36.2	222
Laws and professional ethical codes are the primary guiding factors	Yes	70.3	431
	No	29.7	182
Strict adherence to legal and professional standards is expected	Yes	66.6	408
	No	33.4	205
Decisions that involve violating any law are unacceptable	Yes	61.8	379

	No	38.2	234
Following hospital rules and procedures is considered very important	Yes	71.9	441
	No	28.1	172
All health professionals are expected to strictly follow hospital rules	Yes	70.1	430
	No	29.9	183
Successful professionals in the facility strictly follow the rules (“go by the book”)	Yes	65.3	400
	No	34.7	213
Staff in this facility strictly adhere to hospital policies	Yes	76.5	469
	No	23.5	144

Determinants of adherence to the code of ethics

Variables considered for the multivariable logistic regression included knowledge, attitude, job satisfaction, monthly income, work experience, societal expectations of legal and professional norms, manager relationships, promotion linked to ethical behavior, and previous accusations related to ethics. Among these, three factors—knowledge of healthcare ethics, attitude toward ethical principles, and job satisfaction—were significantly associated with proper practice of the code of ethics.

Specifically, participants possessing strong knowledge of the healthcare ethics code were nearly twice as likely (AOR 1.95; 95% CI 1.37–2.77) to follow ethical practices compared with those with limited knowledge. Similarly, health professionals holding a positive attitude toward ethical standards were 1.55 times more likely (AOR 1.55; 95% CI 1.11–2.16) to implement ethical practices than those with an unfavorable attitude. Moreover, those satisfied with their jobs had a 1.45-fold higher likelihood (AOR 1.45; 95% CI 1.04–2.04) of adhering to ethical guidelines compared to unsatisfied staff (**Table 8**).

Table 8. Bivariable and multivariable analyses of factors associated with the practice of the code of ethics among health professionals (n = 613)

Variables	Category	Practice of Code of Ethics	Adjusted Odds Ratio (AOR, 95% CI)	Crude Odds Ratio (COR, 95% CI)
Knowledge	Good	206 (33.6%) Good / 186 (30.3%) Poor	1.951 [1.374–2.770] **	1.952 [1.392–2.738]
	Poor	80 (13%) Good / 141 (23%) Poor	1	1
Attitude	Favorable	164 (26.7%) Good / 155 (25.3%) Poor	1.547 [1.106–2.163] *	1.492 [1.084–2.053]
	Unfavorable	122 (19.9%) Good / 172 (28%) Poor	1	1
Monthly Income (ETB)	< 5000	30 (4.9%) Good / 16 (2.6%) Poor	1.836 [0.932–3.615]	2.176 [1.150–4.116]
	5000–7000	69 (11.3%) Good / 94 (15.3%) Poor	0.820 [0.540–1.246]	0.852 [0.590–1.230]
	> 7000	187 (30.5%) Good / 217 (35.4%) Poor	1	1
Work Experience	< 4 years	104 (17%) Good / 89 (14.5%) Poor	1.483 [0.959–2.294]	1.467 [0.983–2.190]
	4–8 years	96 (15.7%) Good / 130 (21.2%) Poor	0.933 [0.600–1.452]	0.927 [0.630–1.366]
	> 8 years	86 (14%) Good / 108 (17.6%) Poor	1	1
Job Satisfaction	Satisfied	165 (26.9%) Good / 152 (24.7%) Poor	1.453 [1.037–2.036] *	1.570 [1.140–2.162]
	Unsatisfied	121 (19.7%) Good / 175 (28.4%) Poor	1	1
Public Expectation of Strict Professional Standards	Yes	205 (33.4%) Good / 203 (33.1%) Poor	1.417 [0.989–2.030]	1.546 [1.100–2.173]

	No	81 (13.2%) Good / 124 (20.2%) Poor	1	1
Relationship with Manager Affects Practice	Yes	196 (32.0%) Good / 247 (40.3%) Poor	0.725 [0.491–1.070]	0.705 [0.495–1.006]
	No	90 (14.7%) Good / 80 (13.0%) Poor	1	1
Promotion Linked to Ethical Practice	Yes	146 (23.8%) Good / 169 (27.6%) Poor	1.137 [0.796–1.624]	0.975 [0.710–1.339]
	No	140 (22.8%) Good / 158 (25.8%) Poor	1	1
Accused Regarding Ethical Issue	Yes	54 (8.8%) Good / 93 (15.2%) Poor	0.635 [0.426–0.948]	0.586 [0.400–0.858]
	No	232 (37.8%) Good / 234 (38.2%) Poor	1	1

* $p < 0.05$; ** $p < 0.01$

The present study revealed that the overall adherence to healthcare ethics among health professionals was low, with only 46.7% (95% CI: 42.7–50.6) demonstrating good practice. Qualitative findings further highlighted that, although minor improvements in ethical practice were observed, significant challenges remained in implementing healthcare ethics effectively.

These results align with studies conducted in Pakistan, Egypt, and the Bale zone of Ethiopia, where 50%, 48%, and 45.6% of health professionals, respectively, exhibited poor practice of healthcare ethics [1, 21, 23]. Conversely, the proportion of poor practice reported in this study was higher than findings from Mekelle, Ethiopia, among nurses [17], which may be attributed to differences in CRC training, more supportive relationships with hospital management, and safer working conditions [26].

Qualitative data indicated several barriers to ethical practice, including insufficient information and counseling, lack of respect for patient rights and autonomy, inadequate explanation of consent processes, and failure to obtain proper informed consent. Overall, deficiencies in information sharing, communication, and consideration for patient rights were significant obstacles to practicing healthcare ethics.

Knowledge of professional codes of ethics emerged as a key factor influencing ethical practice. Participants with good knowledge were 1.95 times more likely to demonstrate proper ethical behavior compared to those with poor knowledge (AOR 1.95; 95% CI 1.37–2.77). This finding is consistent with studies from Bale zone and Addis Ababa [8, 23] and can be explained by the fact that health professionals who understand the code of ethics are better able to distinguish correct from incorrect practices. The qualitative data supported this, as

respondents noted that those with greater knowledge implemented ethical standards more effectively.

Similarly, a favorable attitude toward healthcare ethics was significantly associated with better practice, with professionals holding positive attitudes being 1.54 times more likely to apply the code of ethics than those with negative attitudes (AOR 1.54; 95% CI 1.11–2.16). Positive attitudes appear to enable professionals to comprehend the importance of ethical practice and anticipate potential outcomes correctly, a trend also observed in studies from Ghana, Gondar, and North Shewa [22, 26, 27].

Job satisfaction was another determinant, as health professionals satisfied with their work were 1.45 times more likely to engage in proper ethical practices compared to those dissatisfied (AOR 1.45; 95% CI 1.04–2.04), in line with studies from Gondar Comprehensive Specialized Hospital and Western Amhara [25, 28]. Job satisfaction may enhance adherence to ethical standards by reflecting good management practices and fostering a positive work environment, functioning as a form of reinforcement for ethical behavior.

Overall, fewer than half of the health professionals demonstrated good ethical practice, indicating that a majority, especially frontline providers, may engage in unethical or improper behaviors, whether intentionally or inadvertently. This highlights the need for targeted interventions to improve ethical conduct among healthcare workers.

Strengths and limitations

This study has several limitations. First, environmental and infrastructural factors in specialized and primary hospitals may have influenced health professionals' ability to practice healthcare ethics, and separate analyses

by facility type could provide additional insights. Second, the findings are specific to frontline medical doctors and nurses and may not generalize to other healthcare providers such as midwives, health officers, laboratory technicians, or pharmacists. Third, social desirability bias could have affected responses; self-administered questionnaires were used to mitigate this. Finally, the cross-sectional design limits the ability to infer causal relationships between variables.

Conclusion

The practice of healthcare ethics among health professionals in public hospitals of the Central Gondar Zone was generally poor. Key factors significantly associated with ethical practice included knowledge of the professional code, positive attitudes toward healthcare ethics, and job satisfaction. Qualitative findings also identified inadequate knowledge, unfavorable attitudes, unsupportive work environments, and low job satisfaction as critical barriers. Policymakers, hospital managers, and administrators should prioritize training, supportive supervision, and continuous evaluation to strengthen ethical practices among health professionals.

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Ethics Statement: Ethical approval for the study was obtained from the University of Gondar, College of Medicine and Health Sciences, Ethical Review committee (Ref No IPH/1980/2013). An official letter from Public Health Institute was written to the Central Gondar Zone health department to get permission to carry out the study. After the purpose, benefit, risk and

method of the study have been explained, informed consent was taken from each participant. The respondents participated voluntarily and refusal to respond to some questions or withdrawal from the study was possible at any time if needed. The written consent form was attached to each questionnaire and the participants read and give their consent before the actual data collection. Personal identification in the questionnaire was removed to protect the privacy and confidentiality of the respondents. All the methods in this research were conducted according to the Helsinki Declaration [29].

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