

Perspectives, Understanding, and Practical Encounters with Ethics among Pediatric Specialists in Ethiopia's Tertiary Hospitals

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Abstract

Pediatricians working in low-resource environments encounter ethical problems that differ from those seen in wealthier healthcare systems. Only a small number of studies from developing nations have examined how pediatricians understand, perceive, and navigate the ethical challenges inherent to such settings. To contribute to this limited body of evidence, we investigated the clinical ethical knowledge, attitude, and experience of physicians employed in the Department of Pediatrics and Child Health (DPCH) at St Paul's Hospital Millennium Medical College (SPHMMC) in Addis Ababa, Ethiopia. The study included all pediatric consultants and pediatric resident doctors serving in the DPCH of SPHMMC during December 2020. Between December 15 and 27, 2020, we administered a pretested, structured, self-completed questionnaire to all 79 eligible participants. The tool evaluated the respondents' knowledge (23 items), attitude (9 items), and experiences (9 items) concerning multiple aspects of bioethics. Data analysis was conducted using SPSS version 20.0 for Windows, and descriptive statistics—including means, medians, standard deviations, and interquartile ranges—were calculated. Comparisons were made using Fisher's exact test. Fifty-nine of the 79 physicians (75%) returned completed questionnaires. Participants had a mean age of 30.7 ± 4.1 years, and 36 (61.0%) were female. More than half (57.6%) had less than five years of clinical practice. The average ethics knowledge score was 12.3 ± 2.34 out of 23, with individual scores ranging from 8 to 19. Respondents demonstrated the strongest knowledge in areas related to confidentiality (94.9% correct), whereas topics on genetic testing and diagnosis yielded the lowest scores (13.6% correct). Only 13 physicians (22.4%) endorsed the statement that children should never receive treatment without parental consent. Pediatricians working in this tertiary care setting in Ethiopia demonstrated limited familiarity with current bioethics standards. These findings underscore the need to strengthen ethics education within this clinical environment.

Keywords: Ethics, Ethiopia, Hospital, Pediatric specialists

Introduction

Ethical questions are a routine component of pediatric care. Clinicians must draw upon moral principles and value frameworks to determine what course of action supports the best interests of both the child and the family

[1], ultimately contributing to improved patient care. Acquiring knowledge in clinical ethics equips physicians with skills to detect, interpret, and address the ethical concerns that surface during medical practice [2].

In high-income countries, hospital ethics committees (HECs) offer structured support to clinicians facing ethically complex scenarios. The increasing survival of children with severe chronic illnesses—often requiring repeated ICU admissions and ongoing deliberations about the continuation of life-sustaining interventions—adds further layers of complexity [3]. Such cases challenge pediatricians to weigh beneficence, autonomy, non-maleficence, and justice. Although younger children

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do not possess full autonomy, adolescents gradually acquire it, complicating decisions around consent, futile interventions, allocation of limited resources, and determining how involved the patient should be in decision making [4]. Clinicians must judge when and how a child's preferences should be incorporated into shared decision-making processes [5]. For this reason, ensuring providers are familiar with current ethical guidelines is essential [6].

One major function of HECs is to provide professional ethics education. However, these committees are scarce in many developing nations [7]. Without established ethics consultation services, clinicians themselves must manage the ethical complexities that arise in daily care. Our study aimed to describe pediatric bioethics knowledge, attitudes, and experiences among these practitioners, with the goal of informing future ethics training initiatives at our institution and in similar low-resource hospitals.

Materials and Methods

Study setting

This study was undertaken at SPHMMC in Addis Ababa, Ethiopia, a teaching and referral institution offering tertiary-level pediatric care. The facility accommodates approximately 150 pediatric beds and receives nearly 30,000 pediatric visits annually. At the time of data collection, the DPCH included 16 consultants and 63 residents. Consultants were defined as board-certified pediatricians or sub-specialists within the department. Only two of the 79 eligible physicians had previously received ethics training. No clinical ethics committee was functioning within the DPCH during the study period.

Data collection

To gather information for the study, we relied on a structured questionnaire that respondents completed on their own. Before being used in the main study, this tool was tried out with pediatricians working at another teaching institution within the city. Their comments led to a few small adjustments, after which the revised version was administered to all 79 pediatricians at SPHMMC between December 15 and 27, 2020.

The questionnaire captured several categories of information: general background characteristics of the participants, their grasp of major topics within pediatric bioethics, their attitude toward ethical issues, and the kinds of ethical dilemmas they had confronted in clinical

settings. Knowledge was assessed through a set of true–false questions spanning core pediatric bioethics themes—protecting confidentiality, pediatric consent, genetic testing and diagnosis, neonatology, end-of-life decision making, and decision making for minors. Respondents earned 1 point for each accurate answer and 0 points for an incorrect one, making the possible score span 0–23. The mean and standard deviation (sd) of the knowledge score were calculated, and anyone scoring above 19 was categorized as having good knowledge [8]. Permission to employ the questionnaire was obtained from its original developers [8].

The sections engineered to measure attitude and experience were developed using insights from the available literature. Attitude was evaluated through nine items scored on a five-level Likert scale, ranging from strongly disagree (1) to strongly agree (5). After summing the responses, an overall score was produced for each participant. Those with totals at or above the group mean were considered to show a positive attitude toward pediatric bioethics; scores below the mean indicated a negative attitude. The scale allowed for a minimum score of 9 and a maximum of 45. Experiences were evaluated by asking respondents how they approached specific vignette-based ethical dilemmas.

Statistical analysis

All data were processed using SPSS version 20.0 for Windows. Depending on the nature of each variable, we summarized results as means with standard deviations or medians with interquartile ranges. Descriptive findings were presented both in written form and through frequency tables. Fisher's exact test was applied when suitable, and a p-value < 0.05 was considered statistically significant.

Results and Discussion

Background characteristics of the physicians

Out of the 79 eligible pediatricians, 59 (75.0%) completed the survey. The group consisted of 12 consultants, 19 year-1 pediatric residents, 9 year-2 residents, and 19 year-3 residents. The average age was 30.7 ± 4.1 years. Women made up 36 of the 59 respondents (61.0%). Most participants—53 out of 59 (89.8%)—identified as Christian, and half (30/59, 50.8%) reported having one or more children. At the time of the study, 57.6% of the respondents had fewer than five years of clinical experience. Four physicians were

assigned exclusively to a single pediatric service (three in NICU and one in PICU), whereas the remaining clinicians rotated across several areas of the department, including emergency care, NICU, PICU, and chronic follow-up clinics. Only two consultants reported having received formal pediatrics bioethics training.

Table 1. Background profile of the study group (n = 59), 2021

Characteristic	Frequency (%)
Age distribution	
26–29 years	27 (45.8)
30–33 years	22 (37.3)
34–37 years	5 (8.5)
38–41 years	4 (6.8)
Above 41 years	1 (1.7)
Sex	
Male	23 (39.0)
Female	36 (61.0)
Marital status	
Married	32 (54.2)
Single	26 (44.1)
Divorced	1 (1.7)
Parenthood	
Has at least one child	30 (50.8)
No children	29 (49.2)
Years in clinical practice	
3–5 years	34 (57.6)
6–8 years	14 (23.7)
More than 8 years	11 (18.6)
Training level / academic position	
Consultant	12 (20.4)
Year I resident	19 (32.2)
Year II resident	9 (15.3)
Year III resident	19 (32.2)
Clinical service placement	
Assigned only to PICU	1 (1.7)
Assigned only to NICU	3 (5.1)
Rotates across multiple areas (ward, ER*, NICU**, PICU*#, follow-up clinics)	55 (93.2)

*ER: Emergency Department **NICU: Neonatal Intensive Care Unit #PICU: Pediatric Intensive Care Unit

Pediatric bioethics knowledge status of the respondents

Physicians' understanding of core pediatric bioethics topics—such as protecting confidentiality, pediatric consent, genetic testing and diagnosis, neonatology, end-of-life decisions, and decision making for minors—was evaluated through a series of true/false items. Respondents achieved a mean score of 12.3 ± 2.34 , with

a median of 12.0 (IQR 10–14). Just over half of the participants (30 out of 59) fell below the average score. Knowledge levels ranged from a minimum of 8 points, recorded by two residents (one in year 1 and another in year 3), to a maximum of 19 points, achieved by a year-3 resident.

A summary of performance across individual domains is presented in **Table 2**. The strongest area of knowledge involved protecting confidentiality, where nearly all respondents (95%) selected the correct response. In contrast, the weakest domain concerned genetic testing and diagnosis, with only 14% answering accurately. Items dealing with pediatric consent also produced varied results: 27 of the 59 participants (45.8%) correctly identified considerations for a mature minor, whereas 43 respondents (72.9%) accurately recognized circumstances involving an emancipating minor.

Table 2. Respondents' performance on pediatric bioethics knowledge items (n = 59), 2021

Knowledge item	Physicians answering correctly N (%)
Decision making at the limits of viability	
• When a newborn's condition at delivery differs markedly from prenatal expectations, the initial resuscitation plan may appropriately be revised.	42 (71.2)
• Cases involving infants born at the boundary of viability should automatically require review by the hospital's legal office.	9 (32.2)
• Managing resuscitation decisions at this borderline stage typically requires collaborative discussion with fellow clinicians.	17 (28.8)
Questions on withholding or withdrawing nutrition and fluids	
• The ethical justification for withholding medically administered fluids and nutrition is generally the same as that for withdrawing them.	29 (49.2)
• There is a major ethical difference between choosing not to initiate a life-sustaining intervention and deciding to discontinue one that has already begun.	10 (17.0)
Life-sustaining treatment considerations	

• A mature minor's refusal of additional life-sustaining therapy should be honored.	16 (27.1)
• It is ethically acceptable to provide high doses of analgesics or sedatives aimed at comfort, even when this may lead to reduced consciousness.	24 (40.7)
• Stopping enteral feeding for a patient in a vegetative state can be ethically permissible.	13 (22.0)
• Physicians may act in the child's best interests by administering care despite parental refusal to vaccinate a 4-month-old infant.	19 (32.2)

Residents in their third year demonstrated the strongest understanding of end-of-life issues, outperforming all other groups of physicians. Their advantage in this area reached statistical significance ($P = 0.007$).

Attitude of the respondents towards end-of-life care

The attitude items highlighted clear variation in clinicians' moral perspectives surrounding decisions to withhold or withdraw life-sustaining treatment. One scenario asked participants to identify the factors they would prioritize when considering ongoing life-support for a 12-year-old child in a persistent vegetative state. Most respondents—49 out of 58 (85%)—reported that the family's judgment about the child's quality of life would influence their choice. Approximately three-quarters took societal cost into account, and nearly half indicated that concerns about potential legal action would shape their decision-making. A detailed summary of these findings appears in **Table 3**.

Table 3. Key factors shaping physicians' attitudes toward care for a hypothetical patient in a vegetative state ($n = 58$), 2021

Factor affecting clinical decision-making	Physicians rating factor as "important" or "very important" N (%)
Patient's own perception of quality of life	42 (72.4)
Family's assessment of the patient's quality of life	49 (84.5)
Likelihood that the patient will not survive	39 (67.2)
Concern about legal consequences or potential litigation	28 (48.3)

Economic implications for society	44 (75.9)
Availability of ICU beds	47 (81.0)

We observed differences in physicians' readiness to administer narcotics or anxiolytics for terminally ill patients. Among 57 respondents, 33 (57.9%) indicated that increasing or adding narcotics was "important" or "very important" for patient comfort, while 23 (40.4%) reported the same level of importance for increasing or adding benzodiazepines (**Table 4**).

Table 4. Physicians' perspectives on adjusting medication or reporting errors to comfort a patient in persistent vegetative state ($n = 57$), 2021

Attitude item	Physicians rating action as important/very important N (%)
Increasing or administering additional narcotics for comfort in PVS*	33 (57.9)
Increasing or administering additional benzodiazepines for comfort in PVS	23 (40.4)
Reporting a medication error after two incorrect doses of phenobarbitone were given	36 (63.2)

*PVS: Persistent vegetative state

Attitudes regarding specific ethical practices

Physicians' engagement with ethical practices was evaluated by examining their level of agreement with actions such as honoring patient autonomy, reporting medical errors, maintaining confidentiality, obtaining consent, exercising physician paternalism, and informing family members about the patient's condition. As shown in **Table 5**, respondents' values varied widely on these ethically sensitive issues. Only about half indicated they would honor the preferences of a mature minor, and 40% reported they would choose not to disclose a medical error to the patient.

Table 5. Physicians' experiences and agreement with various ethics domains ($n = 58$), 2021

Ethical practice statement	Physicians agreeing/strongly agreeing N (%)
Always honor the preferences of a mature minor	28 (48.3)

Disclose any medical error to the patient	35 (60.4)
Maintain patient confidentiality	54 (93.1)
Physicians, rather than patients, should make clinical decisions	6 (10.3)
Consent required only for surgery, not for tests or medications	1 (1.7)
Inform close relatives about the patient's condition in all cases	6 (10.3)
Never treat a child without parental consent	13 (22.4)
Refuse treatment to a violent patient	1 (1.7)
Ethical behavior matters only to avoid legal consequences	6 (10.3)

This exploratory study examined the knowledge, attitudes, and practical experiences related to pediatric bioethics among physicians working in a referral children's hospital in Addis Ababa, Ethiopia, a setting with limited resources. We employed a questionnaire originally developed and validated in the United States. Overall, our results revealed considerable gaps in understanding key ethical principles. The mean knowledge score among participants was 12.3, substantially lower than the 17.3 reported for U.S.-based pediatricians [8], though similar to scores observed in Nepal [9].

Considerable variability was noted in attitudes and practices across several domains of pediatric bioethics. A significant proportion of physicians endorsed behaviors not aligned with established guidelines [10–14]. For instance, while the American Academy of Pediatrics (AAP) emphasizes that withholding and withdrawing life-sustaining treatment are ethically equivalent [10, 11], many physicians in our study perceived a moral difference between the two. When asked whether there is a fundamental ethical distinction between refraining from initiating life-sustaining therapy versus discontinuing it once started, only 10 of 59 respondents (17.0%) answered in accordance with guideline recommendations.

Similarly, AAP guidance allows certain adolescents to consent to or refuse treatment [12]. In our survey, merely 16 of 59 physicians (27.1%) correctly acknowledged that

a mature minor's refusal of further life-sustaining treatment should be respected, highlighting a notable knowledge gap. Only 22% of participants recognized that enteral nutrition can ethically be withdrawn from a patient in a persistent vegetative state, despite AAP recommendations permitting such decisions when nutrition no longer provides net benefit and is not in the child's best interest [10, 11, 13]. Fewer than half supported administering high doses of analgesics or sedatives to a dying child even if it led to obtundation [14].

It is also concerning that only 63.2% of physicians deemed it "important or very important" to disclose medical errors to patients' close relatives. Current best practices advocate for transparent error disclosure, including clear explanation of the mistake and its implications for patient health [15].

Notably, third-year residents achieved the highest knowledge scores, suggesting that formal bioethics education can influence understanding, attitudes, and behaviors, even when traditional practices persist. This finding underscores the potential effectiveness of targeted ethics training.

Study limitations include a relatively small sample size, single-center design, and limited statistical power, which restrict generalizability and representativeness of the findings.

Conclusion

Pediatricians working in tertiary care settings in Ethiopia require structured ethical guidance to manage critically ill patients while adhering to high moral standards. Training in pediatric bioethics should be adapted to local practice conditions and consider traditional cultural values influencing decision-making. Physicians in such environments face challenges in applying scarce and advanced life-support technologies in ways that are both just and beneficent. Establishing a hospital ethics committee capable of providing consultation, educational programs, and case discussions could support clinicians in understanding and applying ethical principles in complex pediatric care situations.

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Ethics Statement: The study was approved by the Institutional Review Board (IRB) of St Paul's Hospital Millennium Medical College (IRB approval number-pm23/244). Written and informed consent was also obtained from all the participants of the study. All the research methods in this study were carried out in accordance with the Ethiopian research ethics guideline and also in accordance with the declaration of Helsinki.

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