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Global Ethical Challenges in Physiotherapy: Observational Evidence on Resource Scarcity and Access Inequities

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Abstract

Little is known about the ethical challenges that physiotherapists face around the world. This knowledge gap limits the profession's ability to prepare practitioners and provide support for ethical decision-making across different regions. This study aimed to explore three key questions: What types of ethical issues do physiotherapists encounter internationally? How often do these issues arise? Can sociodemographic, educational, or professional factors predict the frequency or type of ethical challenges experienced? An international observational study was conducted in English via an online survey from October 2018 to May 2019. A total of 1,212 physiotherapists and physiotherapy students participated, representing less than 1% of the global physiotherapy workforce at that time. The questionnaire included 13 items on demographics, familiarity with ethical codes, and decision-making skills, as well as 46 items assessing the frequency of ethical issues in four areas: (A) interactions with patients (19 items), (B) interactions with other healthcare professionals (10 items), (C) interactions with the healthcare system (5 items), and (D) professional and economic ethical dilemmas (12 items). The most commonly reported ethical challenges were limited resources and time affecting treatment quality, and restricted access to physiotherapy for those in need. On average, these issues occurred more than once a month. Ethical challenges also frequently arose in interprofessional settings. Across all regions, issues related to interactions with healthcare systems were most common. Participants with more years of practice and those who received ethics education during their foundational training reported encountering ethical issues less frequently across all categories. This study provides the first global insight into the ethical challenges faced by physiotherapists. Cultural and societal factors play a significant role in shaping ethical practice. There is a clear need for enhanced support from professional bodies, academic institutions, and workplaces, alongside comprehensive ethics education, to enable physiotherapists to navigate ethical dilemmas effectively.

Keywords: Ethics, Professional Practice, Physiotherapy, Survey

Background

There is limited understanding of the ethical challenges physiotherapists face across different countries. Evidence from research, primarily conducted in Western societies, indicates that physiotherapists encounter ethical dilemmas in diverse practice settings [1–9]. A few studies have explored ethical issues in non-Western regions [10–14], but no study has yet mapped the full scope and nature of ethical challenges in the profession on a global scale. Existing research suggests that ethical issues are an inherent part of physiotherapy practice, contributing to moral distress among practitioners and influencing the quality and outcomes of care [1, 2, 4, 9]. Addressing these challenges requires an informed understanding to guide effective support and interventions. The current lack of comprehensive knowledge limits the profession's ability to prepare physiotherapists worldwide for ethical practice.

Early investigations in the 1980s and 1990s in the United States and the United Kingdom identified common ethical issues in physiotherapy, including decisions about patient prioritization, managing patient and family expectations, resource limitations, and interprofessional

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conflicts [1, 4, 6]. Expert panels further highlighted concerns such as maintaining clinical competence, informed consent, confidentiality, truthfulness in advertising, overutilization of services, product endorsement, and sexual misconduct [6]. Over the past two decades, research from Canada, the United States, Europe, and Australia has expanded these themes to include patient autonomy, conflicts of interest, cultural diversity, business and productivity pressures versus patient-centered care, professional boundaries, and the physiotherapist's advocacy role [2, 3, 5, 7–9].

Emerging research from non-Western societies offers additional perspectives. In Africa, studies from Ghana and Zambia report frequent ethical challenges related to gift-giving, professional boundaries, and conflicts between cultural practices and treatment processes [11, 14]. Zambian physiotherapists also noted issues concerning patient safety, interprofessional conflicts, and informed consent [11], while Ghanaian practitioners identified limited resources and managing expectations as primary ethical concerns [14]. In Nigeria, physiotherapists providing end-of-life care faced ethical tensions between cultural beliefs and patient autonomy, late referrals, and treatment effectiveness [10]. Brazilian physiotherapists reported ethical conflicts surrounding care provision when death was not accepted and providing humanistic care that risked emotional distress [15]. In Iran, ethical concerns included prioritizing self-interest over patient interest, acting on personal rather than professional beliefs in the absence of ethics education, and challenges related to affordability, autonomy, and privacy [12]. These findings highlight contextual differences and the emergence of new ethical issues, indicating that international physiotherapy practice presents a complex ethical landscape.

A central guide for ethical practice in physiotherapy is the code of ethics. Members of the World Physiotherapy organization are expected to adhere to principles of autonomy, honesty, equity, and justice [16]. As the profession evolves, understanding how physiotherapists apply these principles within diverse political and cultural contexts is essential. Examining ethical issues globally can reveal which obligations are most frequently challenged in practice and inform culturally responsive guidance, helping physiotherapists act as moral agents and contribute to ethical and effective healthcare delivery worldwide.

This paper presents findings from the ESPI-Study (Ethical Situations in Physiotherapy Internationally), which aimed to map the ethical landscape for physiotherapists globally. The study sought to answer the following questions:

1. What types of ethical issues do physiotherapists encounter internationally?
2. How often are these ethical issues experienced?
3. Can sociodemographic, educational, or vocational factors predict the frequency and type of ethical challenges experienced by physiotherapists?

Methods

Study design

An online questionnaire was developed to explore the ethical issues most commonly experienced by physiotherapists globally. The questionnaire expanded upon previous surveys and incorporated issues identified in contemporary literature [1, 3, 4, 6–8, 10, 11, 17]. It was designed in English with a Flesch–Kincaid readability level of 6.7. A pilot test was conducted with eight physiotherapists, including five non-native English speakers. Based on their feedback, minor revisions were made to improve clarity, and examples and a suggestion to use a dictionary were added to the survey instructions. Participants were provided with a definition of an ethical situation as "any issue creating ethical tension in physiotherapy practice—for example, conflicts of values, beliefs, or norms; uncertainty regarding the correct ethical action; or distress arising from the inability to act in accordance with professional ethical standards."

The final survey was administered online via SurveyMonkey from October 2018 to May 2019. The first page included information about the study and a consent statement; participants could proceed only after providing informed consent. Ethical approval was obtained from the University of South Australia Human Research Ethics Committee and the Institute of Ethics and Right in Medicine at the University of Vienna.

The questionnaire included 60 items divided into three sections (Additional file 1: Appendix 1). Section 1 contained 13 items collecting demographic information such as age, gender, nationality, level of physiotherapy education, workplace type and location, payment sources, and field of practice. Two additional items assessed participants' knowledge of ethical codes and decision-making. Section 2 included 46 items measuring the frequency of specific ethical issues on a five-point scale: daily (=1), weekly (=2), monthly (=3), yearly or

less (=4), or never (=5). These items were categorized into four contexts: (A) physiotherapist–patient interactions (19 items), (B) interactions with other health professionals including physiotherapists (10 items), (C) interactions with the healthcare system (5 items), and (D) professional and economic ethical situations (12 items). Items and categories were presented in random order. Section 3 invited participants to describe ethical situations they experienced that were not included in the questionnaire. This paper reports the results from Sections 1 and 2.

Participants

The survey targeted physiotherapists and physiotherapy students worldwide who had internet access and sufficient English proficiency. Participation was voluntary and the survey was untimed. Participants were recruited via purposive and snowball sampling. The survey link was distributed internationally through four channels: (1) license-free advertisements on professional social media platforms (Twitter, Facebook, LinkedIn, ResearchGate), (2) a paid pop-up advertisement on Physiopedia's homepage for eight weeks (October–November 2018) and promotion in its online journal, Physiospot, (3) email invitations sent to all national World Confederation for Physical Therapy (WCPT, now World Physiotherapy) associations requesting forwarding to members, and (4) 300 printed invitations distributed at the 2019 WCPT Congress.

Data analysis

Descriptive statistics summarized participants' sociodemographic characteristics. Response rates for individual items were noted due to some missing data. Drop-out analysis compared sociodemographic and occupational characteristics between participants who completed all three sections and those who did not.

Item frequencies were calculated using the 1–5 scale, where lower scores indicated more frequent experiences. Normality and equal distribution of responses in Section 2 were assessed using Kolmogorov–Smirnov and Chi-square tests; no items met assumptions for normality or equal distribution. Reliability analysis of the four categories indicated good internal consistency (Cronbach's α = 0.77–0.91; item–scale correlations = 0.39–0.67). Accordingly, the categories were treated as scales, with means and standard deviations reported. Forward stepwise multiple regression analyses were performed for each scale, including predictors with $p \leq 0.05$ and excluding those with $p \geq 0.10$. Predictors included biographical variables (gender, WCPT membership, WCPT region), vocational variables (years of experience, workplace type and number, work areas, fields, and payment sources), and educational variables (physiotherapy vs. other degrees, ethics/code of conduct education, ethical reasoning training). Due to high correlation between age and years of experience ($r = 0.915$, $p < 0.001$), only years of experience were included in regression models. Dummy coding was applied for nominal variables (Additional file 2: Appendix 2).

Results

Participant demographics

A total of 1,212 individuals completed the online questionnaire, representing less than 1% of the estimated 1,583,361 physiotherapists worldwide in 2018 [18]. The exact number of international physiotherapists who were reached through the recruitment methods, had internet access, or possessed sufficient English proficiency to participate is unknown, making it difficult to define a precise study population. Participants' ages ranged from 18 to 76 years **(Table 1)**, with the majority being female (67%), followed by male (32%) and other/diverse (1%). Respondents represented 94 countries. Table 1 shows the sample distribution by gender and WCPT region.

On average, participants had 13.5 years of experience in physiotherapy (SD = 11.0). Among them, 264 (22%) were currently enrolled in some form of physiotherapy education. Many participants had worked in multiple types of workplaces during their careers (mean = 2.6, SD = 1.7) and had practiced across several physiotherapy fields (mean = 5.1, SD = 3.4). **Table 2** summarizes the educational and occupational characteristics of participants, broken down by gender.

Table 1. Number (%) of participants for each geographic region by gender

Geographic region	All n = 1212	Female n =	Male n = 389	Diverse n =

		815		8
Africa region	141 (12)	79 (7)	62 (5)	0 (0)
Asia Western Pacific region	383 (32)	259 (21)	121 (10)	3 (0)
Europe region	534 (44)	377 (31)	154 (13)	3 (0)
North America Caribbean region	139 (11)	92 (8)	45 (4)	2 (0)
South America region	15 (1)	7 (1)	7 (1)	0 (0)

Table 2. Mean age (SD), and number (%) of participants for each occupation and education characteristic by gender

Characteristic	All n = 1212	Female n = 815	Male n = 389	Diverse n = 8
Age (years)	35.3 (11.8)	35.4 (12.2)	34.9 (10.7)	38.1 (14.8)
Type of workplace				
Private	1103 (91)	727 (89)	373 (96)	3 (38)
Government/public	891 (74)	632 (78)	256 (66)	3 (38)
Teaching institution	276 (23)	185 (23)	90 (23)	1 (13)
Research institution	96 (8)	67 (8)	29 (7)	0
Sports club	142 (12)	86 (11)	55 (14)	1 (13)
Self-employed/owner	455 (38)	278 (34)	174 (45)	3 (38)
Other	140 (12)	107 (13)	33 (8)	0
Area where workplace located				
Rural area	120 (10)	79 (10)	38 (10)	3 (38)
Urban area	742 (61)	496 (61)	242 (62)	4 (50)
Both areas	346 (29)	237 (29)	108 (28)	1 (13)
Paying sources				
Private funding (patient or family)	682 (56)	440 (54)	236 (61)	6 (75)
Private funding (organization)	557 (46)	375 (46)	178 (46)	4 (50)
Public/governmental funding	549 (45)	371 (46)	175 (45)	3 (38)
Combination of public/governmental and private	609 (50)	410 (50)	196 (50)	3 (38)
Charities	153 (13)	106 (13)	46 (12)	1 (13)
Other	30 (2)	22 (3)	8 (2)	0
Field of physiotherapy practice				
Acupuncture, dry needling	170 (14)	102 (13)	66 (17)	2 (25)
Animal	13 (1)	11 (1)	0	2 (25)
Aquatic	178 (15)	133 (16)	44 (11)	1 (13)
Cardiorespiratory	376 (31)	254 (31)	120 (31)	2 (25)
Education	349 (29)	237 (29)	108 (28)	4 (50)
Disability	289 (24)	207 (25)	81 (21)	1 (13)
Health promotion	300 (25)	208 (26)	89 (23)	3 (38)
Information management	38 (3)	19 (2)	18 (5)	1 (13)
Management/administration	194 (16)	132 (16)	61 (16)	1 (13)
Mental health	97 (8)	70 (9)	26 (7)	1 (13)
Neurology	493 (41)	332 (41)	158 (41)	3 (38)
Occupational Health/ergonomics	173 (14)	109 (13)	61 (16)	3 (38)
Oncology/palliative care	163 (13)	120 (15)	42 (11)	1 (13)
Orthopaedics/manual therapy	737 (61)	472 (58)	261 (67)	4 (50)

Older people	520 (43)	357 (44)	160 (41)	3 (38)
Paediatrics	339 (28)	244 (30)	93 (24)	2 (50)
Rehabilitation	724 (60)	470 (58)	249 (64)	5 (63)
Research	216 (18)	136 (17)	78 (20)	2 (50)
Sport	419 (35)	242 (30)	173 (44)	4 (50)
Women's, men's and pelvic health	215 (18)	170 (21)	44 (11)	1 (13)
Other	126 (10)	89 (11)	36 (9)	0
Highest educational level achieved (in physiotherapy or other discipline)				
Bachelor/diploma	510 (42)	357 (44)	150 (39)	3 (38)
Graduate diploma	110 (9)	68 (8)	42 (11)	0
Masters degree	310 (26)	193 (24)	117 (30)	0
Professional doctorate	105 (9)	71 (9)	31 (8)	3 (38)
Research doctorate	59 (5)	39 (5)	18 (5)	2 (50)
Other	115 (9)	84 (10)	31 (8)	0
Learned about code of conduct/ethics during basic physiotherapy education				
Yes	893 (74)	591 (73)	298 (77)	4 (50)
No	216 (18)	156 (19)	61 (16)	1 (13)
Don't know	99 (8)	68 (8)	29 (7)	2 (25)
Learned about specific ethical decision-making/reasoning frameworks during basic physiotherapy education				
Yes	581 (48)	373 (46)	204 (52)	4 (50)
No	399 (33)	278 (34)	121 (31)	0
Don't know	231 (19)	162 (20)	63 (16)	4 (50)

Participant flow

Of the 1,212 respondents, 846 (approximately 70%) completed the full survey. Those who dropped out were generally younger, with an average age of 31.4 years, compared to 37.0 years among completers [$F_{1,1209} = 60.442$, $p < 0.001$]. Participants currently undertaking physiotherapy training were also more likely to leave the survey early ($Chi^2 = 89.11$, $p < 0.001$). When examining the four survey scales, the only notable difference between students and practicing physiotherapists was in scale B, "Physiotherapist and other health professionals including other physiotherapists," where students reported encountering the listed ethical challenges in items 33, 34, and 46 (Additional file 1: Appendix 1) less frequently than practicing professionals.

Dropout rates showed minor variation across regions, ranging from 23.2% (North America Caribbean) to 40% (South America), with a maximum regional difference of 16.8% ($Chi^2 = 7.875$, $p = 0.097$). Non-completers also had fewer years of professional experience (mean 11.2 vs. 14.2, $F_{1,945} = 13.649$, $p < 0.001$) and had practiced in fewer areas of physiotherapy (mean 4.5 vs. 5.3, $F_{1,1206} = 17.361$, $p < 0.001$). Additionally, a higher proportion of dropouts held a Bachelor/Diploma compared to a Master's degree ($Chi^2 = 20.685$, $p < 0.001$). Further comparisons between survey completers and non-completers are available in Additional file 3: Appendix 3.

Frequency and nature of ethical issues

The average frequency of ethical issues experienced by participants is presented in **Table 3**, ranked from most to least common. The two most frequently reported issues occurred more than once per month on average, while most other issues (30 of 46) were reported between monthly and yearly. The nine issues most often experienced were distributed across scale B (four items), scale C (three items), and scale D (two items), with scale A issues appearing only from the tenth position onward.

Mean frequencies across the four scales were broadly similar, all reflecting experiences more frequent than yearly (scale A: 3.96 ± 1.01; scale B: 3.58 ± 1.36; scale

C: 3.24 ± 1.65; scale D: 3.66 ± 1.48). Scale C, "Physiotherapists and the system," emerged as the most frequently experienced ethical context across all regions (Africa: 3.12 ± 0.84; Asia Western Pacific: 3.29 ± 0.98; Europe: 3.28 ± 0.92; North America Caribbean: 3.12 ± 0.89; South America: 2.78 ± 0.84).

Regional comparisons **(Table 3)** highlighted that item 45, "Scarce resources and time affecting quality of physiotherapy treatment," consistently ranked as the first or second most frequent ethical challenge across all WCPT regions. Furthermore, the five highest-ranked issues for the total sample were also among the top ten most frequent for each individual region.

Table 3. Ranking of mean frequency that ethical issues were experienced for total cohort and comparative rankings for WCPT regions (most frequent–least frequent)

Item	Scale*	N	Mean (SD)**	Total Cohort Ranking	Africa Region Ranking	Asia Western Pacific Region Ranking	Europe Region Ranking	North America Caribbean Region Ranking	South America Region Ranking
Limited resources and time impacting the quality of physical therapy care	C	857	2.39 (1.3)	1	1.5	2	1	2	1
Inaccessibility of physical therapy for some due to costs, regional service gaps, or healthcare system discrimination	D	847	2.64 (1.4)	2	1.5	1	2	1	5
Honoring the patient's therapeutic relationship with other health professionals despite disagreement with their opinions	B	855	2.95 (1.2)	3	4	3	3	3.5	19.5
Poor or absent communication between physical therapists and other healthcare providers leading to errors and reduced care quality	B	855	3.10 (1.2)	4.5	7	4.5	4	7.5	8
Inappropriate or missing referrals from other health professionals limiting the quality of physical therapy services	B	855	3.10 (1.2)	4.5	3	4.5	5.5	7.5	10
Insufficient evidence to support the effectiveness and safety of physical therapy practices	D	847	3.19 (1.3)	6	5	7	5.5	11	8
Disagreements with other health professionals regarding patient care management	B	855	3.26 (1.1)	7	10	6	9	11	6
Organizational or systemic requirements to discharge patients for non-clinical reasons, e.g., insurance limits or healthcare policies	C	857	3.27 (1.3)	8	16	10	10	3.5	4
Systemic or organizational barriers preventing physical therapists from treating patients based on clinical needs, e.g., insurance restrictions or policy limitations	C	857	3.29 (1.4)	9	13	8	11	5.5	11
Discrepancies between the wishes of patients or their families/caregivers and the physical therapist's professional judgment	A	844	3.31 (1.1)	10	11	11	7	9	16
Intentional withholding of truth by patients during treatment	A	844	3.33 (1.1)	11	6	9	12	11	23
Misalignment between patient expectations and physical therapist expectations in the therapeutic relationship	A	844	3.37 (1.1)	12	15	13	8	14	23
Conflicts between duties to employers, third-party payers, and patients	D	847	3.47 (1.2)	13	18	14	18	5.5	13.5
Continuing physical therapy for psychological or psychosocial support after clinical goals are achieved	A	844	3.51 (1.1)	14	19	15	23	18	12
Insufficient advocacy for patients' interests, needs, or supports when they cannot advocate for themselves	D	847	3.55 (1.2)	15	12	12	24.5	13	13.5

Restricting or withholding physical therapy services to improve provider working conditions or for therapist convenience, e.g., time or location	C	856	3.57 (1.3)	16	20	16	14	21	8
Physical therapist awareness of misconduct by other health professionals, e.g., incompetence or violations of laws/professional duties	B	855	3.58 (1.2)	17	8	19	16	24	27.5
Inappropriate or unreviewed long-term prescription of analgesics or sedatives to patients	B	854	3.59 (1.3)	18	14	28	15	15	19.5
Organizational or systemic pressure on physical therapists to return patients to work or sports prematurely	C	857	3.68 (1.2)	19	29.5	26	19	16	2
Inadequate or unlawful documentation practices by physical therapists	D	847	3.69 (1.3)	21.5	9	29.5	21	17	17.5
Lack of shared decision-making between patient and physical therapist, e.g., due to paternalism or cultural differences	A	843	3.69 (1.1)	21.5	32	27	17	19	23
Prioritizing patients for treatment based on non-clinical factors, e.g., selecting easier cases, likelihood of success, or financial gain	A	843	3.72 (1.2)	23.5	26	24	22	22.5	30.5
Physical therapists practicing beyond their expertise or skill level	D	847	3.72 (1.2)	23.5	23	20	20	39	39.5
Over-treating patients for the physical therapist's financial benefit	D	847	3.73 (1.3)	24	24	25	24.5	26	30.5
Bullying or harassment of physical therapists by other health professionals	B	855	3.79 (1.2)	25	22	18	31	27.5	19.5
Conflicts between professional ethical obligations and cultural or personal values	D	847	3.80 (1.2)	26.5	21	18	30	27.5	34
Failure to respect patient privacy or dignity during treatment, e.g., inadequate draping or gossiping about patients	A	843	3.80 (1.1)	26.5	28	33	23	22.5	30.5
Discontinuing treatment when patients fail to follow the physical therapist's instructions or advice	A	844	3.83 (1.0)	28.5	35	32	26.5	20	16
Concerns about treating terminally ill patients, e.g., assessing benefit versus harm, treatment futility, or resource constraints	A	844	3.83 (1.2)	28.5	27	22	28	34.5	25.5
Failure to obtain informed consent, e.g., due to cultural differences, cognitive impairments, or lack of effort	A	844	3.84 (1.1)	30	25	17	26.5	37.5	39.5
Physical therapists recommending and selling products for personal financial gain	D	847	3.90 (1.2)	31	17	29.5	36	37.5	16
Breach of patient confidentiality by physical therapists	D	847	3.94 (1.1)	32	33	31	34	29.5	43
Intentional lack of truthfulness by physical therapists during treatment	A	843	3.97 (1.1)	33.5	34	34	29	34.5	34
Unprofessional or offensive behavior among colleagues on social media	B	855	3.97 (1.2)	33.5	31	36	35	25	19.5
Other health professionals seeking financial or other benefits from referring patients to physical therapists	B	855	4.02 (1.3)	35	38	23	41	31	27.5
Overcharging patients for physical therapy services	D	847	4.06 (1.2)	36	29.5	37	39	29.5	3
Violent or threatening behavior by patients toward physical therapists	A	844	4.07 (1.0)	37	39	35	37	36	25.5
Discrimination by physical therapists against patients based on age, gender, appearance, culture, or religion, e.g., refusing treatment or providing substandard care	A	844	4.23 (1.0)	38	40	41	38	40	43
Fraudulent billing practices for physical therapy services	C	847	4.24 (1.1)	39	37	38.5	43	33	41
Accepting inappropriate gifts or gratuities from patients	A	844	4.27 (1.0)	40	36	38.5	42	42	30.5
Inappropriate relationships between patients and physical therapists during treatment, e.g., intimate friendships or business partnerships	A	844	4.28 (1.0)	41	41.5	40	40	43	34

Sexual harassment by patients during treatment	A	844	4.32 (0.8)	42	44	43.5	32	32	43
Physical therapists abusing their authority to influence patient behavior for personal gain	A	844	4.38 (1.0)	43	43	43.5	44	41	37.5
Violent or threatening behavior by other health professionals toward patients	B	855	4.39 (0.9)	44	41.5	42	45	44	36
Violent or threatening behavior by physical therapists toward patients	A	844	4.72 (0.7)	45	45	45	33	46	45.5
Sexual harassment by physical therapists during treatment	A	844	4.81 (0.5)	46	46	46	46	45	45.5

*Scale A = Physical Therapist and Patient Interaction, B = Physical Therapist and other Health Professionals (including other Physical Therapists), C = Physical Therapist and the System, D = Professional and Economic Ethical Situations
**Experienced daily = 1, weekly = 2, monthly = 3, yearly or less = 4, never = 5

Predictors of frequency of ethical issues

Regression analyses examined factors associated with the frequency of ethical issues across the four survey scales.

For **scale A** ("Physiotherapist–patient interaction"), six predictors significantly explained 7.2% of the variance ($R = 0.269$, $R^2 = 0.072$, $F6,707 = 9.175$, $p < 0.001$). Participants who were male or female, had more years of physiotherapy experience, worked in fewer fields of practice, worked across a greater number of workplace types, and received ethics education during their basic training reported encountering these issues less frequently.

For **scale B** ("Physiotherapist and other health professionals"), six predictors accounted for 9.4% of the variance ($R = 0.306$, $R^2 = 0.094$, $F6,723 = 12.465$, $p < 0.001$). Lower reported frequency of ethical issues was associated with being female, having longer work experience, and receiving ethics education during foundational training. Conversely, being gender diverse, working in more fields of practice, and being from the African region predicted higher frequencies of ethical challenges.

For **scale C** ("Physiotherapists and the system"), four predictors explained 3.3% of the variance ($R = 0.182$, $R^2 = 0.033$, $F4,721 = 6.187$, $p < 0.001$). Longer professional experience was associated with encountering these ethical issues less often. However, practicing in more physiotherapy fields, working in rural areas, and not having received ethics education during basic training were linked to higher frequencies of ethical challenges.

For **scale D** ("Professional and economic ethical situations"), six predictors accounted for 7.8% of the variance ($R = 0.279$, $R^2 = 0.078$, $F6,711 = 9.982$, $p < 0.001$). Participants reported fewer ethical challenges if they were female, had more years of experience, were from the European region, or had received ethics training in their foundational education. Working across more physiotherapy fields and being from the African region predicted more frequent experiences of ethical issues in this category **(Table 4)**.

Table 4. Prediction of the four category scales* (significant predictors only)

Predictors	Criteria											
	Scale A			Scale B			Scale C			Scale D		
	β	T	*p*	β	T	*p*	β	T	*p*	β	T	*p*
Gender												
Female	0.65	2.44	0.01	0.88	2.41	0.01	–	–	–	0.11	3.00	0.00
Male	0.55	2.06	0.04	–	–	–	–	–	–	–	–	–
Diverse	–	–	–	− 0.84	− 2.34	0.02	–	–	–	–	–	–
WCPT regions												
Africa	–	–	–	–	–	0.01	–	–	–	–	–	0.01
Asia & Western Pacific	–	–	–	0.10	2.84	–	–	–	–	0.96	2.46	–
Europe	–	–	–	–	–	–	–	–	–	–	–	0.00
North America & Caribbean	–	–	–	–	–	–	–	–	–	0.13	3.18	
South America	–	–	–	–	–	–	–	–	–	–	–	–

Working years	0.11	3.00	0.00	0.19	5.07	< 0.00	0.14	3.71	< 0.00	0.10	2.45	0.02
Areas												
Rural	–	–	–	–	–	–	–	–	0.05	–	–	–
Urban	–	–	–	–	–	–	0.07	2.01	–	–	–	–
Both	–	–	–	–	–	–	–	–	–	–	–	–
Number of type of workplaces	0.84	2.06	0.39	–	–	–	–	–	–	–	–	–
Number of working fields	− 0.11	− 3.63	< 0.00	− 0.16	− 4.31	< 0.00	− 0.10	− 2.55	0.01	− 0.11	− 2.97	0.00
Learned code of conduct												
Yes	0.1y	4.24	< 0.00	0.13	3.59	< 0.00	–	–	–	0.14	3.68	< 0.00
No	–	–	–	–	–	–	0.09	2.30	0.02	–	–	–
Don't know	–	–	–	–	–	–	–	–	–	–	–	–
	$F_{6.707} = 9.18$, $p < 0.001$			$F_{6,723} = 12.47$, $p < 0.001$			$F_{4,721} = 6.19$, $p < 0.001$			$F_{6,711} = 9.98$, $p < 0.001$		
	$R = 0.27$, $R^2 = 0.07$			$R = 0.31$, $R^2 = 0.09$			$R = 0.18$, $R^2 = 0.03$			$R = 0.28$, $R^2 = 0.08$		
	$R^2corr = 0.064$			$R^2corr = 0.086$			$R^2corr = 0.028$			$R^2corr = 0.070$		

*Scale A = Physical Therapist and Patient Interaction, B = Physical Therapist and other Health Professionals (including other Physical Therapists), C = Physical Therapist and the System, D = Professional and Economic Ethical Situations. Only significant predictors are shown; variables of paying sources, WCPT membership, degree in physiotherapy vs. other disciplines, learning about ethic decision making were not significant predictors in any scale

Discussion

This study represents the first attempt to create an international profile of ethical challenges encountered by physiotherapists in routine practice. Across all regions, the most frequently reported challenges related to societal and organizational constraints that limit access to physiotherapy or the resources necessary to provide equitable care. The prominence of "scarce resources and time affecting quality of treatment" echoes findings from studies in the United States and the United Kingdom over thirty years ago [1, 4]. The persistence of this issue may reflect the adoption of Western-style healthcare models in multiple countries, affecting resource allocation, as well as a historical lack of research in non-Western contexts that delayed earlier recognition.

The widespread nature of this ethical challenge is concerning, particularly given that approximately one in three people worldwide require rehabilitation during illness or injury, with musculoskeletal disorders representing the greatest rehabilitation need for both children and adults [19]. Early physiotherapy intervention is critical for promoting functional independence and reducing disability and associated societal costs [20–22]. The high frequency of ethical issues linked to systemic limitations aligns with the predicted "period of social identity" in physiotherapy [23] and supports recent calls to better integrate societal considerations into codes of ethics [2, 24]. The enduring nature of this challenge suggests that addressing it requires more than individual-level responses. Studies indicate that physiotherapists may have limited awareness of social responsibility as a professional value or may struggle to act as moral agents at a societal level [25, 26]. Consequently, both individual physiotherapists and professional organizations need enhanced capacity to effect change. Examples include training physiotherapy organizations to advocate for equitable health policies and facilitating networks for practitioners to collaborate on systemic improvements.

The association between a lack of ethics training and more frequent experience of system-related ethical issues underscores the importance of robust ethics education for twenty-first-century physiotherapy graduates. Although limited, existing research suggests that effective ethics curricula extend beyond teaching normative principles to actively engaging students in critical thinking and ethical decision-making [27–32]. Contemporary approaches should equip physiotherapists with skills to influence organizational and societal change, including consultation, collaboration, advocacy, and policy development, as described in the Population-Based Practice framework [33]. Support from professional

bodies is essential to empower individual physiotherapists to participate effectively in shaping social policy and healthcare reforms.

Ethical challenges also frequently arise in interprofessional contexts, occurring at least monthly for physiotherapists worldwide. While interprofessional practice is widely recognized as important for improving patient outcomes and workforce efficiency [34], relational challenges continue to impact care [1, 2, 7, 11]. Participants from the African region reported these challenges most often, reflecting paternalistic practice models and delayed physiotherapy referrals [10, 11]. Addressing these issues requires systemic interventions to promote respectful and collaborative professional relationships [35]. International emphasis on interprofessional training at the undergraduate level [34] and campaigns supporting professional recognition in positive practice environments [36, 37] may enhance understanding between disciplines and foster workplace cultures of respect.

Longer professional experience and exposure to ethics education during basic training were linked to lower reported frequencies of ethical issues across all contexts. While the mechanisms are not fully understood, this may reflect a cognitive adaptation process, whereby more experienced physiotherapists perceive and manage ethical challenges differently than less experienced colleagues [9]. Prolonged exposure to organizational pressures may lead practitioners to rationalize or accommodate ethical dilemmas to maintain functioning in complex work environments. Given the ongoing pressures of externally imposed care and funding constraints, education providers and professional associations should support physiotherapists in navigating situations involving discrimination, abuse, or other ethically challenging circumstances [38].

Comparisons of ethical issue frequency across WCPT regions reveal both common and region-specific challenges in physiotherapy practice. These rankings provide an initial profile of ethical practice for each region, which can inform the development of contextualized codes of ethics, training programs, and professional support initiatives. They also highlight opportunities for cross-regional sharing of strategies and resources to strengthen global capacity in addressing ethical challenges. For example, the profession's recent use of international webinars, facilitated social media discussions, and guidance papers to respond to COVID-19 [39] could serve as a model for addressing the persistent global issue of limited resources and time affecting physiotherapy care.

It is important to note that the comparative rankings were based only on the issues included in the survey. The inclusion of an open-ended question at the end of the survey provided additional insights into region-specific ethical challenges, and these qualitative findings are reported in a separate publication [40].

Several limitations of the study should be acknowledged. The overall response rate was low relative to the estimated global physiotherapist population, although it compares favorably with an international survey of musculoskeletal physiotherapists conducted in 20 languages, which had 1,307 respondents from 49 countries [41]. The experiences of physiotherapists from South America, Africa, and the North America Caribbean regions were less strongly represented, highlighting the need to amplify voices from all regions to ensure comprehensive professional guidance and training. Future studies could enhance participation by offering translated questionnaires and tailoring recruitment strategies to each region.

The relatively low variance explained in regression analyses suggests that other factors—such as regional, cultural, or organizational differences—may influence the ethical challenges encountered by physiotherapists. Additional qualitative research is needed to explore these influences and to identify factors that could be included in future quantitative investigations.

Conclusion

This study provides the first global overview of ethical issues experienced by physiotherapists. Equity in access to care and availability of resources are prominent ethical concerns worldwide. Societal and cultural systems strongly shape the ethical situations physiotherapists encounter in daily practice. Challenges in interprofessional relationships further impact the ability of physiotherapists to provide ethical and high-quality care. Longer professional experience and foundational ethics education are associated with less frequent experiences of ethical challenges.

To support physiotherapists in navigating complex and high-pressure work environments, robust ethics education, institutional support from workplaces, academic programs, and professional associations is essential. Strengthening the capacity of both individual practitioners and organizations will enable

physiotherapists globally to act as competent moral agents in their practice.

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