Original article

Perceptions of emergency physician professionalism among healthcare providers and patients: A multicenter study in Thailand and the US (California)☆

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Abstract

Background: Universal standards for emergency physician professionalism (EPP) among different groups of healthcare workers do not exist.

Objectives: This study aimed to explore the perceptions of EPP among attending physicians (APs), emergency medicine (EM) residents, first- and fourth-year medical students (MS1s and MS4s, respectively), EM nurses and emergency department (ED) patients.

Methods: This multicenter, cross-sectional study was conducted at seven university-based EDs in Thailand and the United States from July 2016 - to January 2018. Thirty-nine cards (13 core elements) describing behaviors derived from a global literature review were created. Subjects ranked each card from the most important to least important for EPP. Pearson correlation analysis and quantitative cultural consensus analysis were used to assess between- and within-cohort agreement in EPP perceptions.

Results: We enrolled 984 subjects into six cohorts (197 ED patients, 90 APs, 135 EM residents, 169 MS1s, 197 MS4s and 196 EM nurses). The overall data demonstrated borderline cultural consensus on EPP [eigenvalue ratio (ER) = 3.1, mean competency (MC) = 0.5, and 3.2% negative competency (NC)], with a validity of 0.95. All cohorts suggested that having excellent knowledge and procedural skills was the most important behavior for EPP, whereas wearing a white coat was the least important. No consensus on EPP was found among healthcare providers and ED patients.

Conclusion: The absence of consensus in EPP perceptions among healthcare providers and ED patients highlights the need for further research using qualitative methods to gain deeper insights into EPP, foster empathy between stakeholders, and bridge these gaps.

Keywords: Cultural consensus, emergency nurse, emergency physician, medical student, professionalism.

The accreditation council for graduate medical education defined professionalism as one of the six new core competency requirements for medical training. [1] These competencies consist of patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. [1] Professionalisms comprise altruism, accountability, authority, commitment, communication, honesty, service, and suspension of self-interest. [2] Medical professionalism is a crucial basis of medicine's contract with society. [3] In emergency departments (EDs), events involving increased time pressure and environmental forces could threaten emergency physician professionalism (EPP). [4, 5] Professional behaviors in focusing on emergency medicine training and practice were implicated by the Council of Emergency Medicine Residency Directors (CORD-EM) in 2002. [1]

Previous studies documented unprofessional behaviors and malpractices by emergency physicians (EPs). [6, 7] These led to medical errors, patient safety issues, patient mortality, and lawsuits. [8, 9] Disruptive and unprofessional behaviors also affect healthcare provider interrelationships. [8] Previous investigations have examined medical professionalism perceptions in doctors, medical educators, medical students, allied health professionals, lay professionals, and patients. [10, 11] In United States (US) cohorts, we studied the definition of EPP defined from the generation perspective among healthcare providers and ED patients. [12] The results showed cultural consensus on EPP in millennials and generation X overall. [12] In healthcare providers, there was consensus regarding EPP throughout all generations, however no consensus across generations in the patient group was noted. [12] No EPP study in ED healthcare providers and ED patients has been conducted in Thailand.

Therefore, this study aimed to understand how EPP is perceived by ED healthcare providers and ED patients in different cohorts from five medical schools in Thailand and two cohorts in the US Using 360-degree perceptions and card-sorting techniques, we conducted a study on the healthcare provider group, including attending physicians (APs), residents, nurses, first- and fourth-year medical students (MS1s and MS4s, respectively), and patients. The results may provide a better understanding of EPP in both countries and explicit conceptualizations of professionalism across cultural differences. We hypothesized that there would be no absolute cultural consensus on EPP among ED healthcare providers and patients.

Materials and methods
Study design and setting

A cross-sectional survey in multiple EDs was performed in the US and Thailand from July 2016 to January 2018. The cultural consensus model was analyzed by using a card-sorting technique. [12] The survey included 984 subjects from two urban level 1 trauma centers in California, US (centers A, B), and five level 1 trauma centers at university-affiliated hospitals in Thailand (centers C-G). All subjects were pooled and categorized into five groups of healthcare providers and one patient group. The healthcare provider group consisted of APs, nurses, residents, and MS4s and MS1s. The subjects were individuals aged 17 years and speak fluent English at US centers. At Thailand centers, the Thai language was preferred. The exclusion criteria for the patient group were pregnancy, medically instability, altered state of consciousness, psychiatric hold, or police custody. The healthcare provider group had no exclusion criteria."

Tools and procedures
A card-sorting technique was described and applied in our previous study. [12] In brief, each card defined a quality or behavior of EPP within the 13 core elements. [12] In Thailand, the cards were translated from the English to Thai by native speakers (Thai healthcare teams) to ensure proper translation. To confirm consistency in card interpretation, pilot studies were performed in 16 APs, 7 nurses, 5 residents, 5 MSs, and 21 patients in each country (US and Thailand). The results indicated a high level of consistency in card interpretation. All subjects made unambiguous decisions regarding each of the 13 core elements, with no further need for clarification. The involvement of a third party, such as linguists, in validating translations to ensure reliability, accuracy, and comprehensibility, was not undertaken. Nevertheless, both the forward and backward translation processes were validated and consensus was achieved by two Thai physicians who had undergone training and had been actively working in both the US and Thailand for 3 - 10 years.

All subjects were enrolled in the study after an informed consent agreement was signed. Data collected were kept anonymous. Subjects could leave the study at any time without any consequences. Each subject received the 39 cards and ranked them in order of importance for EPP. The ranking was based on his or her opinions, with potential effects on medical

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professionalism, from the most to the least important. Cards were provided every time in the same sequence from 1 to 39.

Subsequently, the subjects completed their demographic data. Demographic information, including gender, age, race, religion, previous experience with an unprofessional (EP) (for APs, residents, nurses, MSs, and patients), job satisfaction (for APs, residents and nurses), and years of practice (for APs, residents and nurses) were collected. In the US, demographic information from center A was collected through the research electronic data capture as an online data collection program. [13] In the other six centers (centers B-G), data were collected as paper sheets. The total time to complete all procedures was approximately 15 minutes and the procedures were conducted by well-trained research associate teams. Each research team worked in a private room to avoid any interference from others.

Statistical analysis

To obtain a 0.3 agreement level based on the averaged Pearson correlation coefficients (a 0.5 competency and 95.0% validity), at least 28 subjects were needed in each cohort. [12, 14] Demographic information was presented in descriptive data. The quantitative cultural consensus method was applied to inspect the existence of a shared cultural model and determine the aggregated rankings within each group.[12, 14, 15] Cultural consensus analysis is the creation of statistical patterns to evaluate the degree of agreement within cohorts and the existence of "culturally shared" beliefs.[12]

Using the minimum-residual algorithm (no rotation), factor analysis of respondents was calculated to assess the degree of agreement within a cohort and obtain individual-level competency scores. [12] The eigenvalue ratio (ER) between the first and second indicates whether the data have a single shared dimension. ER values of 3 to 1 or greater imply a shared cultural idea within the cohort. Competency levels for individuals were estimated as the first factor loading from the factor analysis. A higher average competency level indicates a higher consensus level within the cohort. Negative competency (NC) scores indicate the presence of more than one subcultural group. [12] Cohorts with an ER > 3 and absence of NC score were considered to have an absolute cultural consensus, whereas a borderline cultural consensus presented with an ER > 3 and NC scores < 5.0%. The cultural consensus assumption was rejected as ER < 3 or NC scores > 5.0%. If an absolute or borderline cultural consensus was found, aggregated rankings were estimated as the first set of factor scores. The aggregated ranking among cohorts was examined using Spearman's correlation coefficient. Spearman's correlation coefficient was used to analyze the aggregated ranking between cohorts by healthcare providers and patients. A $P \leq 0.05$ indicates statistical significance. The FREQ, CORR, and FACTOR procedures in SAS version 9.4 (SAS Institute, Inc., 2013, SAS/ ACCESS® 9.4, Cary, NC) were used to conduct all data analyses. [12]

Ethical approval

This study was approved by the University of California, US (UCI, FWA 00004071, 2003), the Central Research Ethics Committee (COA-CREC 008/ 2017), and the Faculty of Medicine, Chulalongkorn University, Thailand (COA no. 020/ 2017; IRB no.629/59). The study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. Informed consent was obtained from all subjects.

Results

In total, There were 984 individuals participated subjects enrolled in the study, including 301 (30.6%) from the US cohort and 683 (69.4%) from Thai cohort **(Table 1)**. Most participants were female (55.5%) (male, 44.5%). The sample included 89 of APs, 196 nurses, and 135 residents. In the US, the age of APs exhibited a wider range, varying from 30 to 68 years old, than in Thailand (29 - 49 years old). The APs' years of experience varied from 1 year to 40 years, with a mean of 10 years and a standard deviation (SD) of 8.2 years. Among the nurses, their years of practice varied from 1 to 42 years, with a mean of 10 years and a SD of 8.7.

There were 197 MS4s (male 107, female 90) and 170 MS1s (male 89, female 81), MS1s in Thailand started medical school earlier (18 - 21 years old) than those in the US (22 - 36 years old). Both MS4s and MS1s in the US had more opportunities to work in healthcare before their admission to medical schools. In both countries, 197 patients were included with 73 male (37.1%) and 124 females (62.9%) patients. All MS4s, MS1s, and patients showed a lesser extent of experience with unprofessional EP **(Table 1)**.

Table 1. Demographic data of subjects in the US and Thailand (n = 984).

Country	Site	N	Gender M	Gender F	Age (years)	Year of practice	Experience of unprofessional EP Yes	Experience of unprofessional EP No	Experience working in healthcare Yes	Experience working in healthcare No
AP (n = 89, 48/43 M/F)										
US	A	28	17	11	30 - 68	1 - 35	23	5		
	B	23	12	11	31 - 68	1 - 36	20	3		
Thailand	C	9	5	4	29 - 40	6 - 11	6	3		
	D	6	4	2	29 - 49	2 - 14	5	1		
	E	9	3	6	29 - 41	1 - 11	4	5		
	F	7	1	6	30 - 43	1 - 14	5	2		
	G	7	4	3	30 - 49	5 - 20	3	4		
Nurse (n = 196, 55/141 M/F)										
US	A	28	14	14	25 - 54	1 - 31	18	10		
	B	28	9	19	27 - 63	3 - 42	14	14		
Thailand	C	28	4	24	25 - 44	1 - 22	10	18		
	D	28	12	16	23 - 56	1 - 31	20	8		
	E	28	2	26	24 - 45	1 - 21	20	8		
	F	28	3	25	22 - 55	1 - 34	22	6		
	G	28	11	17	23 - 37	1 - 15	17	11		
Resident (n = 135, 68/67 M/F)										
US	A	28	15	13	26 - 38	1 - 3	13	15		
	B	24	16	8	26 - 35	1 - 4	14	10		
Thailand	C	19	8	11	26 - 30	1 - 6	7	12		
	D	18	7	11	25 - 39	1 - 15	5	13		
	E	15	8	7	26 - 37	1 - 7	9	6		
	F	18	8	10	26 - 30	2 - 6	7	11		
	G	13	6	7	27 - 35	2 - 5	1	12		
MS4 (n = 197, 107/90 M/F)										
US	A	29	13	16	24 - 33		7	22	19	10
	B	28	22	6	25 - 39		19	9	19	9
Thailand	C	28	20	8	22 - 25		2	26	2	26
	D	28	14	14	22 - 23		2	26	6	22
	E	28	12	16	23 - 25		17	11	13	15
	F	28	13	15	23 - 28		5	23	3	25
	G	28	13	15	23 - 26		9	19	4	24
MS1 (n = 170, 89/81 M/F)										
US	A	29	12	17	22 - 36		5	24	26	3
	B	-	-	-	-		-	-	-	-
Thailand	C	29	17	12	19 - 21		1	28	0	29
	D	28	17	11	18 - 21		4	24	2	26
	E	28	15	13	19 - 21		1	27	2	26
	F	28	17	11	19 - 20		1	27	1	27
	G	28	11	17	19 - 21		0	28	2	26
Patient (n = 197, 73/124 M/F)										
US	A	28	8	20	18 - 65		4	24		
	B	28	12	16	20 - 76		10	18		
Thailand	C	28	19	9	17 - 79		0	28		
	D	28	7	21	18 - 59		3	25		
	E	28	11	17	21 - 62		6	22		
	F	29	8	21	21 - 68		1	28		
	G	28	8	20	16 - 63		3	25		

AP, attending physician; MS4: 4th-year medical student; MS 1: 1st-year medical student; M, male; F, female.

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Table 2. Cultural consensus analysis on emergency physician professionalism in healthcare providers and patients.

Group	N	Mean competency	SD competency	Eigenvalue ratio	% Negative competency
Overall	984	0.5	0.2	3.1	3.2
AP	89	0.6	0.2	3.5	1.1
Nurse	196	0.5	0.2	3.3	2.0
Resident	135	0.6	0.1	3.6	0.7
MS4	197	0.6	0.2	3.3	1.0
MS1	170	0.6	0.2	3.6	1.8
Patient	197	0.4	0.3	3.1	7.1
Patient and AP*	286	0.4	0.3	3.1	7.0
Patient and nurse*	393	0.4	0.3	3.0	7.1
Patient and resident*	332	0.5	0.2	3.2	6.0
Patient and MS4*	394	0.5	0.2	2.4	5.8
Patient and MS1*	367	0.5	0.3	3.1	6.6
Patient and MS*	564	0.5	0.3	2.9	6.2
Patient and AP and resident*	421	0.5	0.3	3.1	7.3
Patient and AP and nurse and resident*	617	0.5	0.2	3.2	4.5

AP, attending physician; MS4, 4th-year medical student; MS1, 1st-year medical student; MS,
all medical students; SD, standard deviation
*Data pooled from multiple cohorts for cultural consensus analysis.

APs and nurses had more experience with unprofessional EPs. APs reported the highest percentage of experience with unprofessional EPs (74.2%), and nurses reported the second highest percentage (62.7%). MS1s reported the lowest percentage of experience with unprofessional behavior from an EP (7.1%). In addition, only 14.2% of the patients reported unprofessional behavior from an EP. The unprofessional EPs reported in this study were subjective, which reflect individual experiences and thoughts.

The overall data demonstrated an ER value of 3.1, with 3.2% negative competency (NC) **(Table 2)**. These results indicate a pattern of borderline cultural consensus. In healthcare providers, the mean competency (MC) values were high (0.5 - 0.6), whereas the percentages of NC were low (0.7 - 2.0). As further analyzed in each group of healthcare providers or patients, the ER data still illustrated a borderline pattern of cultural consensus (ER: 3.1 - 3.6, **Table 2)**. Residents and MS4s had the highest cultural consensus levels (0.6). In the patient group, the data showed no cultural consensus (MC: 0.4; ER: 3.1, and NC: 7.1). When these data were combined with the healthcare provider data, the levels of MC declined (0.4 - 0.5). NC levels were much higher (4.5 - 7.3) when patients were grouped with healthcare providers **(Table 2)**.

Although no cultural consensus was found between ED patients and healthcare providers, we observed some agreement on individual aspects of EPP **(Table 3)**. All six cohorts agreed that the most important aspect of EPP was "excellent knowledge and procedural skills", whereas "wearing a white coat" was the least important EPP-related issue **(Table 3)**. Regarding the respect core element, "respect patients" was in the top 10 ranked by all groups. All healthcare providers ranked "be the patients' advocate" and "be a good team player" among the top-10 issues. The AP group was more aware of "be transparent and truthful" and "be trustworthy and dependable" than the other groups. Residents, MS4s and MS1s selected "be able to treat patients in various situations with limited resources" as their top-10 importance. The nurse group listed "respect coworkers", whereas the MS4s chose "having situational awareness" and "gathering data efficiently with limited time and resources" as their highest concerns.

Patients ranked the following elements as their top 10 items of concern: respect element ("respect patients"), humanism ("practice compassionate patient care"), communication (e.g., "listen and respond to patients' concerns" and "communicate clearly to patients"), altruism ("desire to help others"), humanism element ("share the feelings of patients' suffering"), medical competence ("take a holistic approach to patients"), respect element ("be polite"), and altruism element ("be kind") **(Table 3)**.

Table 3. Aggregated rankings of emergency physician professionals in healthcare providers and patients.

13 core elements	39 cards	Rankings					
		AP (n = 89)	Nurse (n = 196)	Resident (n = 135)	MS4 (n = 197)	MS1 (n = 170)	Patient (n = 197)
Altruism	1. Be unselfish	26	20	20	23	16	18
	2. Choose patients' interests over the physician's interest	16	10	8	12	5	13
Accountability	3. Desire to help others	10	15	2	10	6	6
	4. Be the patients' advocate	6	6	4	6	4	12
	5. Be responsible to colleagues	22	14	17	17	23	34
Excellence	6. Be responsible to society and the institution	30	32	29	33	32	35
	7. Be self-motivated to practice excellence by being a lifelong learner	20	26	14	19	13	16
	8. Teach other medical personnel	31	29	31	29	34	31
	9. Promote research to create new knowledge	35	35	35	35	35	32
Honor and integrity	10. Be transparent and truthful	7	16	15	22	17	20
	11. Maintain the honor of the medical profession	28	27	26	31	29	19
	12. Be trustworthy and dependable	8	17	13	20	26	17
Respect	13. Respect patients	3	5	6	8	8	2
	14. Be polite	27	24	27	28	27	9
	15. Respect coworkers	15	3	12	15	22	26
Communication skills	16. Communicate clearly to patients	9	9	18	14	18	5
	17. Have appropriate conversations with coworkers	23	13	24	21	19	27
	18. Listen and respond to patients' concerns	4	8	11	11	11	4
Teamwork and leadership	19. Be a good team player	5	2	3	3	7	21
	20. Practice good leadership	13	7	10	7	25	22
	21. Practice self-control	14	4	9	4	2	14
Humanism	22. Practice compassionate patient care	2	11	5	13	9	3
	23. Share the feeling of patients' suffering (empathy)	19	18	22	24	15	7
	24. Be kind	21	25	19	25	21	10
Ethics	25. Avoid any conflict of interest	32	33	33	34	28	33
	26. Respect patient confidentiality and privacy	18	19	21	16	10	15
	27. Adhere to doctors' religious and moral values	36	36	36	36	36	36
Medical competence	28. Take a holistic approach to patients	25	22	28	27	14	8
	29. Build excellent knowledge and procedural skills	1	1	1	1	1	1
	30. Be able to treat patients in various situations with limited resources	11	12	7	2	3	11
Mindfulness and self-reflectiveness	31. Be responsive to feedback	24	23	25	18	24	24
	32. Try new behaviors to promote patient care	33	31	32	32	30	25
	33. Have situational awareness	12	21	16	5	12	23
Appearance	34. Wear a white coat	39	39	39	39	39	39
	35. Wear professional attire	38	37	37	38	38	38
	36. Practice appropriate grooming	37	38	38	37	37	37
Information management	37. Complete medical records on time	34	34	34	30	33	29
	38. Document charts accurately	29	30	30	26	31	28
	39. Gather data efficiently with limited time and resources	17	28	23	9	20	30

AP, attending physician; MS4, 4th-year medical student; MS1, 1st-year medical student.

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Table 4. Correlations of aggregated ranking by healthcare providers and patients.

Group	AP	Nurse	Resident	MS4	MS1	Patient
AP	1.0					
Nurse	0.9	1.0				
Resident	1.0	1.0	1.0			
MS4	0.9	0.9	0.9	1.0		
MS1	0.9	0.9	0.9	0.9	1.0	
Patient	0.8	0.8	0.8	0.7	0.8	1.0

AP, attending physician; MS4, 4th-year medical student; MS1, 1st-year medical student.

The correlations of aggregated rankings by each group are detailed in **Table 4**. Healthcare providers showed a high correlation between their individual groups (0.92 - 0.96). APs and residents had the greatest agreement (0.96). When the patients' data were compared with those of each healthcare provider group, the correlation values diminished (0.7 - 0.8). The least agreement was observed with MS4s **(Table 4)**.

Discussion

We first demonstrated EPP perceptions in healthcare teams and ED patients in the US and Thailand. The overall data illustrate a pattern of borderline cultural consensus regarding EPP with a validity of 0.95. No absolute cultural consensus was found among healthcare providers and patients. Previous studies have examined EPP perceptions in one or a few groups of subjects. [16 – 18] This study aimed to simultaneously assess the EPP viewpoints from all related persons in EDs (healthcare providers and patients) to assess 360-degree perceptions. The data showed interesting results. All subjects from different cultures in cohorts from both the US and Thailand selected the same rankings of the most (excellent knowledge and procedural skills) and least (wearing a white coat) important EPP-related issues.

A recent study in the EDs found that wearing a white coat was ranked as the last important among healthcare providers and patients from a generation perspective. [12] The present data (Thailand and the US) also show a similar result in that wearing a white coat was the least important issue. However, patients preferred professional appearance of physicians wearing white coats. [19, 20] In contrast, a study in Switzerland reported that only 34.4% of 1,637 patients considered wearing a white coat to be important. [21] This finding and our present data may indicate that wearing a white coat is no longer considered important in perceptions of physicians.

Most patients highly valued aspects of EPP pertaining to respect element ("respect patients", and "be polite"), humanism element ("practice compassionate patient care", "share the feelings of patients' suffering"), communication element (e.g., "listen and respond to patients' concerns" and "communicate clearly to patients"), altruism element ("desire to help others", "be kind"), and medical competence ("build excellent knowledge and procedural skills", and take a "holistic approach to patients") as their top 10 items of concern. Studies of patients' experiences have demonstrated that all subjects expected the characteristics of their healthcare providers at the ED. [22, 23] Enhanced communication skills are required to reduce the gap in perceptions between doctors and patients. [24, 25] In addition, the present study revealed that "respect for patients" was ranked most important by all groups. A previous study reported that patient's confidentiality and privacy must be respected during ED visits. [26] Recently, communication skills training has been revised to guide the future design in medical school curricula. [27] Therefore, healthcare teams should place a greater emphasis on these soft skills.

The AP group had a greater agreement with patients regarding EPP than MS4s, residents, and nurses. APs have more experience and time to develop their perceptions of EPP through internal and external motivations to develop their skills and make them more attuned to the needs of patients. [28] Experienced clinicians can focus more on listening to patient concerns and demonstrating their interpersonal skills. [28] Fewer experienced providers focus more on gathering essential information for differential diagnosis and management because of time and resource limitations. [28] This may cause them to overlook their application of soft skills. Thus, teaching and evaluation of interpersonal skills should be emphasized during all levels of medical training. [29]

The MS1 group had the greatest agreement with patients regarding EPP, particularly compared with the MS4 group. Previous studies have revealed lower professional attitude scores and less empathy associated with increasing years in medical school. [30, 31] MS4s have more experience with sleep deprivation causing physical and mental exhaustion. [32] After MSs are trained, they focus on the more complex task of building medical management skills and may forget interpersonal skills. [33] A lack of role models and mistreatment from the faculty can account for the decline in empathy during clinical training. [34] Emergency medical educators must integrate soft skills and medicine-related skills into their teaching during clinical practice. [35, 36]

The AP group noted "be transparent and truthful" and "be trustworthy and dependable" as crucial characteristics. Ethics in emergency medicine related to physician integrity, templates, and the "F" word have been described for providing medical care. [37] Health professionals are expected to tell the truth. However, each patient must be approached individually regarding the importance of telling the truth in all situations. [38]

The ED nurses ranked "be a good team player" and "respect coworkers" among their three most important qualities for EPP. A better working relationship between physicians and nurses can increase physician productivity, enhance the quality and safety of patient care, decrease ED waiting time, improve patient outcomes and satisfaction and enhance interprofessional collaboration, which is currently a requirement of the World Federation of Medical Education. [39] Teamwork among specialties directly influences the quality of ED patient care. [40] A lack of respect among coworker increases stress leading to strains in coworkers relationships and teamwork. [41, 42] Therefore, implementing instructions on teamwork during interprofessional emergency training would lead to changes in the workplace.

All cohorts in both countries agreed that having excellent knowledge and procedural skills was the most important aspect of EPP. Practitioners and managers also ranked medical competency as an important aspect of medical professionalism. [43] The conventional professional image of the physician (e.g., ethics and professional reputation, dependability, and integrity) and the global view (e.g., good doctor attributes, responsibility, and ethics) were essential

professionalism domains. [44] Two attitudes (namely, performance attainment and personal involvement) recognition and selection of essential values are critical for better practice in the medical profession. [45] Continuing medical education in professionalism would improve the efficiency of healthcare teams in ensuring patient safety. [46, 47]

Despite the large sample size, this study still has some limitations. Because there were 39 cards, the subjects may have grown tired and found it difficult to rank all 39 items accurately. Although we did not test for the reliability of the card ranking, a previous study illustrated that it remains a viable research tool if 40 cards are used. Unfortunately, we could not measure intrarater reliability over two separate weeks for each subject in all six cohorts because of the impracticality of follow-up. Measuring inter-rater reliability among different members of each cohort is required to determine whether the card ranking method is reliable for EPP assessment.

In addition, unstable, vulnerable, or pediatric subjects were excluded from this study, therefore, the present data are not applicable to or representative of them. The subjects in the Thailand cohort accounted for 69.0% of the sample, which may not accurately represent both countries. Further studies to compare the perceptions of EPP among people in Eastern and Western cultures are desired. Of note, factor analysis is recommended to determine the criterion validity of EPP. A prospective cohort study is also required to investigate which element can effectively predict the EPP of any EPs. A qualitative study is also required to investigate what are observable EPP behaviors from patients' and relatives' perspectives.

Conclusion

This study explored perceptions of EPP among healthcare providers and patients in Thailand and the US Results revealed a lack of consensus on EPP, however, agreement on the importance of knowledge and procedural skills, while wearing a white coat was the least important. Patient perceptions emphasized respect, humanism, communication, altruism, and medical competence. Variations in EPP were observed among the provider groups, with experienced physicians aligning more closely with patient perceptions. Soft skills such as transparency, trustworthiness, teamwork, and respect for coworkers

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were valued. This study recommends continuous professionalism education and integration of interpersonal skills in medical training. Future qualitative studies can provide deeper insights into EPP perceptions, foster empathy between stakeholders, and bridge these gaps. Establishing a shared understanding of the EPP is crucial for advance medical education.

Conflict of interest statement

Data sharing statement

All data generated or analyzed during the present study are included in this published article and the citations herein. Further details, opinions, and interpretations are available from the corresponding author on reasonable request.

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