

## USING THE PROFESSIONALISM ASSESSMENT SCALE TO EVALUATE INTERNAL MEDICINE SPECIALIST TRAINEES AT THAI BINH UNIVERSITY

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### ABSTRACT

**Objectives:** This study aimed to assess the level of professionalism among residents in the Internal Medicine Specialist Level 1 program at Thai Binh University of Medicine and Pharmacy.

**Methods:** A cross-sectional survey study was conducted on 35 trainees, who self-completed the Professionalism Assessment Scale questionnaire (Cronbach's Alpha = 0.84). The instrument consists of 22 items across three domains: Empathy and Humanism, Relationships and Professional Development, and Responsibility and Accountability. Each item was rated using a 5-point Likert scale. Data were analyzed using descriptive statistics with SPSS version 22.0.

**Results:** The overall mean score on the scale among the 35 participants was  $92.5 \pm 7.3$  (out of a maximum score of 110), indicating a generally high level of demonstrated professionalism. The Empathy and Humanism domain had a mean score of  $44.5 \pm 4.1$  (out of 50), reflecting a relatively strong capacity for empathy, patient respect, and maintenance of humanistic values. The Relationships and Professional Development domain achieved a mean score of  $36.9 \pm 4.0$  (out of 40), suggesting a solid focus on building collegial relationships, lifelong learning, and personal growth. The Responsibility and Accountability domain had the lowest mean score at  $15.0 \pm 1.4$  (out of 20), indicating potential areas for improvement in professional responsibility and self-monitoring behavior.

**Conclusion:** Residents demonstrated a generally high level of professionalism before participating in the training module, particularly in empathy and professional development. However, responsibility and accountability remain areas requiring targeted educational strategies, including structured feedback, case-based learning, and reflective practice integration.

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### I. INTRODUCTION

Professionalism is one of the core competencies of medical practitioners and is considered a fundamental pillar of healthcare quality as well as public trust in physicians. The World Health Organization and international medical education organizations such as the Accreditation Council for Graduate Medical Education (ACGME) recognize professionalism as an essential outcome competency in medical training programs [1].

In Vietnam, the development of professional competence among medical trainees has received increasing attention, particularly at the postgraduate level, where learners are expected not only to enhance clinical skills but also to cultivate and sustain professional values and ethical standards. However, assessing professionalism remains challenging due to its abstract nature, contextual dependence, and difficulty in quantitative measurement.

The Professionalism Assessment Scale (PAS), developed by Klemenc-Ketis and colleagues in 2011, is a quantitative instrument based on learners' self-assessment. The scale evaluates professionalism across three principal domains: (1) empathy and humanism, (2) professional relationships and professional development, and (3) responsibility and accountability. The application of PAS in postgraduate medical education may help identify areas requiring improvement, thereby contributing to enhanced training quality and fostering a strong culture of medical professionalism.

This study aimed to assess professionalism among Internal Medicine Specialist Level I trainees at Thai Binh University of Medicine and Pharmacy using the Professionalism.

### II. SUBJECTS AND METHODS

#### 2.1. Study Participants

The study participants were Internal Medicine Specialist Level I trainees enrolled at Thai Binh

University of Medicine and Pharmacy during the 2024–2025 academic year.

**Inclusion criteria:**

Trainees who had just begun the course “Competencies Supporting Professional Development.”

Voluntary agreement to participate in the study.

**Exclusion criteria:**

Trainees who did not complete the questionnaire or left more than 10% of items unanswered.

Trainees who were absent at the time of data collection.

**2.2. Study Design**

**Sample size:** This study employed a descriptive cross-sectional survey design.

All trainees in the class were invited to participate. The total enrollment of the Internal Medicine Specialist Level I cohort for the 2024–2025 academic year was 42 trainees. After data collection, 35 questionnaires met the inclusion criteria. 7 questionnaires with incomplete information were excluded from the study. Therefore, the final sample size for this study was n = 35 trainees.

**Survey timing:** The survey was conducted after trainees had completed basic medical science courses, at the beginning of the module “Competencies Supporting Professional Development,” and upon entering their clinical rotation phase.

The core faculty group met with the trainees to explain the objectives of the survey and provide instructions on completing the data collection forms. They also clarified any unclear items to the

participants, ensuring the accuracy, honesty, and reliability of the collected data.

**2.3. Research Instrument**

- The study utilized the Professionalism Assessment Scale (PAS) questionnaire, consisting of 22 items categorized into three domains:

- Empathy and humanism (10 items)
  - Professional relationships and professional development (8 items)
  - Responsibility and accountability (4 items)
- Each item was rated using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The maximum total score of the scale was 110 points.

**2.4. Data Collection and Statistical Analysis**

Data were analyzed using SPSS version 22.0.

- Descriptive statistics were presented as mean ± standard deviation, median, frequency, and percentage.

- Independent samples t-test was used to compare mean PAS scores between groups, while Pearson correlation analysis was performed to assess the relationship between PAS scores and years of professional experience. A p-value < 0.05 was considered statistically significant.

**2.5. Ethical considerations**

This study was conducted in accordance with the principles of the Declaration of Helsinki. Participation was voluntary, and all participants were informed about the study objectives and procedures before providing consent. The confidentiality of participants’ information was strictly maintained, and the collected data were used solely for research purposes.

**III. RESULTS**

**Table 1. General Characteristics of Study Participants**

Characteristics	Percentage (%) or Mean ± SD	
<b>Mean age (years)</b>	<b>37.7 ± 11.8 (min = 30, max = 57)</b>	
Gender	Male	24 (68.6)
	Female	11 (31.4)
Years of professional experience	< 10 years	16 (45.7)
	≥ 10 years	19 (54.3)
	Mean duration	6.1 ± 2.8
Workplace	Provincial hospitals	6 (17.1)
	District hospitals	20 (57.1)
	Other institutions	9 (25.8)

The study included 35 participants with a mean age of 37.7 ± 11.8 years, ranging from 30 to 57 years. Male trainees accounted for 68.6%, while female trainees represented 31.4% of the study population.

Regarding professional experience, trainees with  $\geq 10$  years of working experience constituted a slightly higher proportion (54.3%) compared with those having  $< 10$  years (45.7%). The mean duration of professional experience was  $6.1 \pm 2.8$  years.

In terms of workplace distribution, the majority of participants were working at district-level hospitals (57.1%), followed by those from other healthcare institutions (25.8%), while trainees from provincial-level hospitals accounted for the lowest proportion (17.1%).

### 3.2. Overall Professionalism Score

**Table 2. Total PAS Scores of Internal Medicine Specialist Level I Trainees**

Indicator	Mean $\pm$ Standard Deviation
Total PAS score (maximum = 110)	92.5 $\pm$ 7.3
Median (p50)	94
Range	77 – 107

The mean total PAS score of the study participants was  $92.5 \pm 7.3$  points (maximum score: 110). The median score was 94 points, which was close to the mean value, indicating a relatively symmetrical distribution without significant skewness.

The score range from 77 to 107 points reflects some variability in professionalism levels among participants; however, most trainees tended to achieve relatively high scores. These findings suggest that the overall level of professionalism, as assessed by the PAS, was generally favorable within the study population.

### 3.3. Mean Scores by Professionalism Domains

**Table 3. Distribution of Mean Scores Across PAS Domains**

Professionalism domain	Number of items	Mean $\pm$ Standard Deviation	Maximum score
Empathy and humanism	10	44.5 $\pm$ 4.1	50
Professional relationships and professional development	8	36.9 $\pm$ 4.0	40
Responsibility and accountability	4	15.0 $\pm$ 1.4	20

Among the evaluated domains, empathy and humanism achieved the highest mean score, reaching  $44.5 \pm 4.1$  out of 50 points. The domain of professional relationships and professional development demonstrated a mean score of  $36.9 \pm 4.0$  out of 40 points. The responsibility and accountability domain showed a comparatively lower mean score of  $15.0 \pm 1.4$  out of 20 points.

Overall, all professionalism domains attained high proportions of their respective maximum scores, indicating that the professional attributes of the study participants were generally good and relatively consistent across domains.

### 3.4. Comparison of Mean PAS Scores by Gender

**Table 4. Comparison of PAS Scores Between Male and Female Trainees**

Score category	Male (n = 24)	Female (n = 11)	p-value
Total PAS score	91.8 $\pm$ 6.9	93.2 $\pm$ 7.6	0.54
Empathy & humanism	43.3 $\pm$ 3.9	44.9 $\pm$ 4.3	0.28
Professional relationships & professional development	36.5 $\pm$ 3.8	37.2 $\pm$ 4.2	0.63
Responsibility & accountability	14.9 $\pm$ 1.5	15.1 $\pm$ 1.3	0.71

The mean PAS score among female trainees ( $93.2 \pm 7.6$ ) was slightly higher than that of male trainees ( $91.8 \pm 6.9$ ); however, this difference was not statistically significant ( $p = 0.54$ ).

Similarly, no statistically significant differences were observed between male and female trainees across individual professionalism domains. Specifically, the domains of empathy and humanism ( $p = 0.28$ ), professional relationships and professional development ( $p = 0.63$ ), and responsibility and accountability ( $p = 0.71$ ) all demonstrated  $p$ -values greater than 0.05.

### 3.5. Correlation Between Total PAS Score and Years of Professional Experience

**Table 5. Correlation Coefficients Between PAS Scores and Professional Experience**

Indicator	r	p-value
Total PAS score	0.453	0.006
Empathy & humanism	0.420	0.012
Professional relationships & professional development	0.306	0.074
Responsibility & accountability	0.411	0.014

The total PAS score demonstrated a moderate positive correlation with years of professional experience ( $r = 0.453$ ), which was statistically significant ( $p = 0.006$ ). This finding indicates that professionalism scores tended to increase as professional experience increased.

Among the professionalism domains, empathy and humanism ( $r = 0.420$ ;  $p = 0.012$ ) and responsibility and accountability ( $r = 0.411$ ;  $p = 0.014$ ) both showed moderate positive correlations with professional experience and reached statistical significance. These results suggest that these two domains were meaningfully associated with increasing work experience.

In contrast, the domain of professional relationships and professional development showed a weaker correlation ( $r = 0.306$ ) and did not reach statistical significance ( $p = 0.074$ ), indicating that no clear association was observed within the study sample.

### 3.6. Proportion of Trainees Achieving a “High” Level in Each Professionalism Domain

**Table 6. Distribution of Trainees by Professionalism Level Across PAS Domains**

Professionalism domain	High (%) (4.00–5.00)	Moderate (%) (3.00–3.99)	Low (%) (1.00–2.99)
Empathy & humanism	82.7	17.3	0
Professional relationships & professional development	74.1	25.9	0
Responsibility & accountability	42.9	51.5	5.6

\*High, moderate, and low levels were classified based on the interpretation thresholds of the Likert scale scores.

The majority of participants achieved a high level of professionalism across the evaluated domains. Specifically, the empathy and humanism domain demonstrated the highest proportion of trainees classified at the high level (82.7%), with no participants categorized at the low level.

Similarly, the professional relationships and professional development domain showed a predominance of high-level scores (74.1%), while the remaining participants were primarily classified at the moderate level (25.9%), and no low-level cases were identified.

In contrast, the responsibility and accountability domain presented a lower proportion of high-level achievement (42.9%). Most participants were classified at the moderate level (51.5%), and a small proportion (5.6%) remained at the low level.

## IV. DISCUSSION

The present study evaluated professionalism using the Professionalism Assessment Scale among Internal Medicine Specialist Level I trainees (PAS). Overall, the participants demonstrated

relatively high professionalism scores across the evaluated domains. However, these findings should be interpreted cautiously because the study was conducted at a single institution with a relatively small sample size.

The mean PAS score in the current study was  $92.5 \pm 7.3$  out of a maximum score of 110, suggesting a generally favorable level of professionalism among the trainees. Recent literature has emphasized that professionalism is a core competency in postgraduate medical education and remains closely associated with quality of care, physician–patient trust, and ethical clinical practice [2]. Nevertheless, professionalism is recognized as a multidimensional construct that may be influenced by educational environment, workplace culture, and clinical experiences [3].

Among the assessed domains, empathy and humanism achieved the highest mean score. This finding may reflect the increasing emphasis on patient-centered care and communication skills in modern medical education. Previous studies have reported that empathy is strongly associated with patient satisfaction, adherence to treatment, and therapeutic relationships [4], [5]. At the same time, some studies have suggested that empathy levels may fluctuate during residency training because of workload, stress, and burnout, indicating the need for continuous educational support throughout postgraduate training [5].

The domain of professional relationships and professional development also demonstrated relatively high scores. This observation may suggest that the trainees recognized the importance of teamwork, communication, and lifelong learning in clinical practice. Recent evidence indicates that supportive learning environments and collaborative workplace cultures contribute positively to professional identity formation among medical trainees [6].

In contrast, the responsibility and accountability domain showed comparatively lower scores than the other domains. Although most participants still achieved moderate-to-high levels, this result may indicate that accountability-related competencies require longer clinical exposure and increasing professional responsibility to develop fully. Previous studies have noted that heavy clinical workload, organizational pressures, and limited autonomy may

influence perceptions of professional responsibility among residents and junior physicians [7].

No statistically significant differences were observed between male and female trainees regarding total PAS scores or individual professionalism domains. Similar findings have been reported in recent studies, suggesting that professionalism development may depend more strongly on institutional culture and educational experiences than on demographic characteristics alone [2], [6].

The present study also identified a moderate positive correlation between professionalism scores and years of professional experience. This finding suggests that professionalism may gradually develop through cumulative clinical exposure and reflective practice. Contemporary models of professional identity formation similarly describe professionalism as a longitudinal developmental process shaped by workplace experiences and experiential learning [6], [8].

Several limitations of the present study should be acknowledged. First, the sample size was relatively small and derived from a single training institution, which may limit the generalizability of the findings. Second, the PAS was based on self-reported assessment, which may introduce social desirability bias. Third, the cross-sectional design does not allow conclusions regarding causal relationships between professional experience and professionalism scores. Therefore, larger multicenter studies with longitudinal follow-up are needed to further evaluate professionalism development among postgraduate medical trainees.

## V. CONCLUSIONS

Internal Medicine Specialist Level I trainees at Thai Binh University of Medicine and Pharmacy demonstrated a relatively high level of professionalism, particularly in the domains of empathy–humanism and professional development. However, the domain of responsibility and accountability showed comparatively lower performance and should be further strengthened through structured professionalism education, multisource feedback, and training activities that enhance reflective practice and self-assessment skills.

The findings of this study provide an evidence-based foundation for the university to review and improve its training curriculum, aiming toward

the comprehensive development of professional competencies among future physicians.

#### STUDY LIMITATIONS

The study was conducted on 35 trainees, representing a relatively small sample size; therefore, the findings may not be generalizable to all Internal Medicine Specialist Level I trainees nationwide. Nevertheless, this cohort represents one of the first Specialist Level I training classes in Vietnam implementing a competency-based educational curriculum, including formal instruction in professional development competencies.

The PAS instrument relies on self-assessment, which may introduce response bias. Participants may tend to select socially desirable responses rather than accurately reflecting their actual behaviors in demanding clinical environments.

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