

## Professional Behavior Assessment of Residents in Specialized Wards of Imam Reza Hospital in Tabriz Using P-MEX

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### Abstract

**Background and purpose:** Medical professional behavior includes the characteristics of devotion, integrity, compassion, good communication skills, respect, responsibility, excellence and leadership. Evaluation plays an important role in identifying the professionalism of people and training. Thus, this study was conducted to evaluate the professional behavior of clinical residents.

**Methods:** In this descriptive study, 50 clinical attending physicians were randomly selected as the study population. Each attending physician completed assessment forms for two residents with whom they had rounds for more than one month. P-MEX was used for data collection and data analysis was done through descriptive method using one-sample t-test.

**Results:** Based on the results, the professional behaviors of residents were as follows: 8.9% under the expected level, 57.4% at the expected level, 32.7% over the expected level and no residents were at an unacceptable level.

**Conclusions:** The present study was conducted for the first time considering the fact that no professionalism assessment tool was provided for clinical departments. The study had useful results and some important steps can be taken in the future by localization of the P-MEX tool, adding items accepted by professionals and doing a 360-degree assessment.

**Keywords:** ASSESSMENT, PROFESSIONAL BEHAVIOR, P-MEX TOOL

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## Introduction

Since all efforts of physicians are for the welfare of patients and the community, medical professional behaviors earn physicians the confidence of these groups (1). Professionalism includes certain attitudes and behaviors such as devotion, integrity, compassion, good communication skills, respect, responsibility, leadership and excellence (2). The American Board of Internal Medicine provides a broad and

comprehensive operational definition of professionalism that is comprised of three commitments and six elements. The three commitments are the highest qualities and standards in the practice of the medical profession, priority to the interests and welfare of patients and accountability to the needs of community health and the six elements include devotion, responsibility, excellence, honor, integrity and respect for others (3). It seems completely unrealistic to expect that medical students be fully aware of professional behaviors and have no need for more education in this area. All students are at risk of misconduct in professional behaviors, and systematic and explicit attention in this context can be useful. Medical education has focused on knowledge and skills in the last century. Considering this

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education, an assessment of professionalism is vital for the field of medicine in the future (4). Medical universities are responsible for educating physicians who try to improve public health through carrying out their professional duties and committing to certain principles that the profession requires after graduating. Thus, becoming a physician is equivalent to acquiring a new identity in life, as an individual starts the medical profession by accepting responsibility and showing a series of specific characteristics (5). The ethical vision of these characteristics is the priority of the patient's benefits over personal ones (6). Evaluation of professionalism can play an important role in professionalism training. Hence, it appears that assessing this competency should be considered an essential component in competence-based curricula and the medical education spectrum (7).

During medical education, students must be trained to have necessary attitudes, knowledge and skills to become a perfect physician. Knowledge and skills are assessed through written and oral exams, standardized patients and clinical exams, while the professional assessment, including professional behavior is often unsystematic, unobvious, and thus insufficient. This inadequate assessment not only negatively affects the education programs, but also ultimately leads to some adverse effects in society as studies have shown that the majority of complaints against doctors are for their professional behavior, not lack of knowledge or poor clinical and technical skills. Incorrect assessment leads to loss of opportunities to gain knowledge and improve students' professional behavior because students do not receive sufficient feedback in this regard during their education (4).

Residents having a higher level of professionalism have better clinical capabilities. It seems that the assessment of professionalism skill is useful and necessary considering the relationship between these two capabilities (8). It is so important that the Institute for Accreditation of the General Medical Education has made professionalism

one of the requirements for offering certification to residency programs and has emphasized the necessary and important role of competence assessment in helping to promote curriculum and students' education and learning (9). Assessment of professionalism is not an old topic, and new and creative ways of admission guidelines are forming which can determine the applicant's aspects of professional behavior even before entering the medical field; for example, it is possible to predict interpersonal communication skills through numerous, short and standardized interpersonal interactions (multiple medical interviews). Peer assessment that might be useful only for developmental purposes is one of the promising ways to assess and enhance levels of professionalism. Patients' feelings and perceptions of doctors' behavior can help to identify a minority of physicians who have compatibility problems with professionalism, as well as those with typical performance. Today, the combined use of these methods is used as a 360-degree assessment of professionalism for students and in offering certification for residents (10).

Musick et al. studied professional behavior and clinical performance of the residents in clinical wards with a 360-degree method using tools consisting of 26 items in 2003. Nurses, psychologists, social workers, counselors and managers participated as assessors in this study. These people completed anonymous questionnaires for the residents who were in the ward for more than three months based on their observations and the type of behavioral interactions that they had with residents. The results showed that the assessment can be a useful tool for planners of residency programs, completing the requirements of the Institute for Accreditation of the General Medical Education and providing constructive feedback to residents (11). Yamani et al. conducted a qualitative study using the experiences of attending physicians and interns with professionalism learning in clinical education. A semi-structured

interview was done with 10 attending physicians and 10 interns of internal surgery. Participants in this study discussed the five themes of information exchange, human dignity, affection, professional accountability and trust as the components of professionalism in clinical education. This study emphasized the role of hidden curriculum in professional education and showed that negative experiences could cause unethical and unprofessional behaviors and had negative educational impact on the formation of professional behaviors. Therefore it is necessary that this kind of hidden curriculum is recognized accurately and consistently and, along with professional education, strategies should be provided in order to deal with negative impacts and enhance positive impacts of hidden curriculum (12). Crusse et al. used an interesting format of Mini-Clinical Evaluation Exercise (Mini-CEX) and decided to design a tool based on it to assess professional behavior of medical students and called it Professional Mini-evaluation Exercise, or P-MEX. Then, they examined its validity, reliability and practicability. In a workshop with the participation of 92 faculty members, 142 professionalism components were identified in the mentioned study. The authors then summarized them into 24 components in order to study the highest professional features possible at the lowest number of components, and they incorporated the tool in a four-point Likert scale. The tool was then tested on clinical students. The results showed the content and structure validity of the tool designed. The study also showed that the tool was useful for assessment of professionalism of students in clinical settings and it was possible to use. The factor analysis of the tool identified four main areas as follows: the doctor-patient communication skills, feedback skills, time management and professional communication skills (13).

Yusuke Tsugawa et al. (2009) carried out a pilot study in Japan using P-MEX. They changed P-MEX for use in Japan and tested it on medical residents in a teaching hospital.

Eight assessors filled out forms for each resident, and a total of 184 forms were completed for 23 senior residents. After analyzing the results, the authors concluded that among several tools available, P-MEX was the most useful tool for use in Japanese clinical settings and had high reliability and validity. In addition, they created 16 new items of which 4 items were extracted that were consistent with P-MEX and called the new assessment tool J-MEX. This modified tool can be more suitable than P-MEX to assess professionalism. These items can even be suitable for the assessment in other countries (14).

P-MEX is one of the most promising tools in the assessment of medical professional behavior for several reasons. The tool evaluates a set of observable behaviors objectively and its high reliability and validity were proven. In addition, modern concepts of professionalism suggest that when the tool is used in a new environment its validity should be studied considering the cultural communication. A cross-sectional study to assess the validity, reliability and generalizability of P-MEX in some hospitals of Japan was done by Yusuke Tsugawa et al. in the years 2009-2010. Results showed that P-MEX reproducibility or repeatability was low when the assessors are peers or junior residents. The results of this cross-sectional and multifocal study showed that that P-MEX had good reliability, validity and generalizability in hospitals of Japan. P-MEX is the only assessment tool in medical professional behavior confirmed both in West and East Asian cultures (15).

Although 30% of the total score required for residents yearly summative assessment is for the assessment of residents' professionalism in the ward, no effective tool to assess it has been introduced to Imam Reza Hospital and the scores are based on individual global judgment of the faculty members, so there is a need to assess professional behavior in clinical specialty courses based on a standard tool. This study tended to assess professional

performance of clinical residents using P-MEX.

## Methods

The participants in this cross-sectional study were selected from clinical residents in Tabriz Imam Reza Hospital including the Internal Medicine, ENT, Neurosurgery, Urology, Surgery, Neurology and Emergency Medicine departments. In a stratified random sampling, 50 out of 100 clinical attending physicians were selected, meaning that two attending physicians from each clinical group were randomly selected. Each attending physician filled out forms for two residents with whom he/she had rounds for more than a month. Residents are not shared among faculty members so we had a total of 100 completed forms for analysis.

The tool used in this study was P-MEX. Based on the data in Table 1, the Cronbach's alpha for professional behaviors and its components was at the upper limit. As a result, the coefficients indicated good internal consistency, questions have been consistent and professional behavior and its components can be assessed through this tool.

**Table 1.** Cronbach's alpha for each components of professional behavior based on scores of participant residents

| Variables                              | Number of questions | Number of samples | Cronbach's alpha value |
|--|---------------------|-------------------|------------------------|
| Professional behaviors                 | 24                  | 101               | 0.95                   |
| Physician-patient communication skills | 8                   | 100               | 0.94                   |
| Time management                        | 3                   | 101               | 0.79                   |
| Professional skills with colleagues    | 9                   | 101               | 0.90                   |
| Feedback Skills                        | 5                   | 101               | 0.84                   |

**Table 2.** Frequency Distribution of residents scores

| Spectrum             | Frequency | Percentage | validity percentage | Cumulative percentage |
|----------------------|-----------|------------|---------------------|-----------------------|
| lower than expected  | 9         | 8.9        | 9                   | 9                     |
| as expected          | 58        | 57.4       | 58                  | 67                    |
| higher than expected | 33        | 32.7       | 33                  | 100                   |

First, P-MEX was translated into Farsi with the help of two experts, one of the experienced English teachers at the university was asked to translate the Farsi version into English, and then another English teacher was asked to compare the translated version (in English) with the original P-MEX text. After the correct translation of the questionnaires was confirmed, the P-MEX tool was put at clinical attending physicians' disposal to fill it out about the residents with whom they had rounds for more than a month. The collected data were analyzed using SPSS. Methods used in this study were descriptive, only one-sample t-test was used to determine the significance of the component's mean and the means were shown in the form of frequency distribution graphs.

## Results

The results showed that none of the residents sampled were at an unacceptable level. Table 2 shows the frequency distribution of residents' professionalism score. Based on the

data in the table, of the 101 residents whose professional behavior were assessed, 9 (8.9%)

**Table 3.** Descriptive statistics of variables

| Variable                               | Number | Average | Mode | Standard deviation | Minimum | Maximum |
|--|--------|---------|------|--------------------|---------|---------|
| Professional behaviours                | 100    | 69.16   | 72   | 13.73              | 34      | 96      |
| Physician-patient communication skills | 100    | 22.08   | 24   | 4.54               | 8       | 32      |
| Time management                        | 101    | 13.5    | 15   | 3.12               | 5       | 20      |
| Professional skills with colleagues    | 101    | 9.48    | 9    | 2.02               | 4       | 12      |
| Feedback Skills                        | 101    | 26.9    | 27   | 5.4                | 14      | 36      |

**Table 4.** One-sample t-test variables

| Variable                               | Mean | Significance level |
|--|------|--------------------|
| Professional behaviors                 | 2.88 | 0.001              |
| Physician-patient communication skills | 2.76 | 0.0001             |
| Feedback Skills                        | 2.71 | 0.0001             |
| Time management                        | 3.16 | 0.0001             |
| Professional skills with colleagues    | 2.99 | 0.0001             |

were assessed as lower than expected, 58 (57.4%) as equal to expected and 33 (32.7%) as higher than expected.

The table (3) shows the mean and the standard deviation of the professional behavior. The highest score was achieved by 72 residents. Scores ranged between 34 and 96. As shown in Table 4 showed that the residents had above-average score of professional behavior, communication skills, feedback provision skills, time management skills and professional relationship with colleague.

## Discussion

Imam Reza Hospital is the largest hospital in Tabriz and northwestern Iran. The hospital is a multi-specialty hospital and the largest number of residents is trained in clinical and non-clinical fields. It plays the most important role in medical education of Tabriz University of Medical Sciences as it has the largest faculty and most experienced faculty members that help the university achieve goals. In this descriptive study, 101 residents in clinical fields were assessed by 50 faculty members and a total of 101 forms were filled. Based on the results, the professional

behavior of residents were as follows: 8.9% under the expected level, 57.4% at the expected level, 32.7% over the expected level and no residents were at an unacceptable level. The mean scores of professionalism, resident-patient communication skills, feedback skills, time management skills and peer communication skills were above average. In the study by Crusse et al., 47 assessors assessed 72 students and a total of 211 P-MEX forms were filled and the results were as follows: More than 40% of the 211 forms indicated that the following 4 items were inapplicable, item 5 (to work hard to meet the needs of the patient if necessary),

**Table 5.** P-MEX tool along with its division into related subgroups

| <b>Doctor-patient relationship skills</b>    |  |
|--|--|
| 1  | Listened actively to patient                               |
| 2  | Showed interest in patient as a person                     |
| 3  | Showed respect for patient                                 |
| 4  | Recognized and met patient needs                           |
| 5  | Accepted inconvenience to meet patient needs               |
| 6  | Ensured continuity of patient care                         |
| 7  | Advocated on behalf of a patient and/or family member      |
| 12   | Maintained appropriate boundaries with patients/colleagues |
| <b>Reflective skills</b>                     |  |
| 8  | Demonstrated awareness of limitations                      |
| 9  | Admitted errors/omissions                                  |
| 10   | Solicited feedback   |
| 11   | Accepted feedback  |
| 13   | Maintained composure in a difficult situation              |
| <b>Time management</b>                       |  |
| 15   | Was on time  |
| 16   | Completed tasks in a reliable fashion                      |
| 18   | Was available to patients or colleagues                    |
| <b>Interprofessional relationship skills</b> |  |
| 12   | Maintained appropriate boundaries with patients/colleagues |
| 13   | Maintained appropriate appearance                          |
| 17   | Addressed own gaps in knowledge and skills                 |
| 19   | Demonstrated respect for colleagues                        |
| 20   | Avoided derogatory language                                |
| 21   | Assisted a colleague as needed                             |
| 22   | Maintained patient confidentiality                         |
| 16   | Used health resources appropriately                        |
| 24   | Respected rules and procedures of the system               |

item 7 (defending the interests of the patient), item 9 (admitting errors) and item 21 (assisted colleagues as needed). Out of all the forms, 3% demonstrated that 4 items that are closely related to the feedback skills were lower than expected: item 8 (was aware of his limitations), item 10 (looking for getting feedback from his performance), item 15 (attending in the ward on time), and item 17 (addressing own gaps in knowledge and skills). They introduced item 3 (behave respectfully with the patients), item 21 (assisted colleagues as needed) and item 23 (respect the rules and procedures of the system) as the unnecessary items. Therefore, slight changes on tools were done considering the purposes of this study, such as omitting 3 additional items and items 7 and 12 and 18 were rewritten due to their closed bilateral nature (13).

In a study conducted by Mahnaz Fouladi et al. at Golestan University, the professional behaviors of pediatric residents assessed by themselves, peers, attending physicians and nurses for the competencies of teamwork, responsibility, reliability, ability to communicate appropriately and respect the rights of patients was studied using a 360-degree approach. The study concluded that the residents' scores were 4.76, 4.47, 4.86 and 4.91 out of 5, respectively. Thus, the pediatric residents' performance in the professional behaviors area was desirable (16).

In their study, Cottrell et al. explored the professionalism of students using peer assessment. They used a 9-item tool with a 7-point Likert scale. The scores 5, 6 and 7 meant that the student showed the particular behavior, 1, 2 and 3 meant the students seldom showed the particular behavior and 0 meant no particular behavior was observed. Based on the results, the responses were rated as follows 88.8% (4), 4.8% (3), 3.3% (5), 1.6% (0), 0.6 (2) 0.5 (6) 0.2 (10 and 0.2 (7). Therefore, the results showed that the students were assessed as moderate by the peers with regard to the preference of score 4 (17).

## Conclusion

This study, which assessed the professional behaviors of students using the P-MEX, showed that clinical residents were above-average in the areas of doctor-patient communication skills, time management skills, feedback skills and relationship with colleagues skills. Given that when attending physicians observe the residents, they treat patients as well as they can, the results are not unexpected. Therefore, it is recommended that assessment be done with the 360-degree method with participation of peers, nurses and attending physicians. Other items can be added to the tool to localize. As physicians think less about their physical and mental health in our country, it is suggested that some items, such as the balance between private life and work, the use of psychotropic drugs and alcohol or drug addiction, that affect an individual's professionalism should be added to the tool.

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