



# The association between anxiety and professionalism in residents of ENT specialist training program in the Faculty of Medicine, Gadjah Mada University, Indonesia

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## Abstract

**Background:** Professionalism has become a compulsory component of medical education, particularly due to the emergence of malpractice lawsuits. During specialist training programs, anxiety is one of the factors that affects education in professionalism. Anxiety is closely associated with stressors during training programs. The ear, nose and throat (ENT) specialist training program in the Faculty of Medicine Gadjah Mada University is known to be highly demanding with a heavy load of stressors. The broad area of competence and professionalism demand in ENT training made its residents prone to anxiety, which in turn affects their professionalism. In this study we measured professionalism and anxiety of residents in the ENT specialist training program and the association between them.

**Methods:** This was a cross-sectional study. The subjects were active residents in the Department of Ear, Nose, and Throat, Faculty of Medicine, Gadjah Mada University who fulfilled the inclusion and exclusion criteria (n=39). Professionalism was measured using the Resident Professionalism Inventory (RPI). Anxiety was measured using the Hamilton Anxiety Rating Scale (HARS). Data was coded and statistically analyzed using SPSS version 17. Statistical significance was defined as  $P < 0.05$ .

**Results:** The prevalence of anxiety was very low. Most subjects reported insufficient professionalism (53.8%; 95% CI=0.372–0.699). The results showed no association between anxiety and professionalism ( $P > 0.05$ ).

**Conclusion:** Anxiety was not associated with professionalism in ENT training program residents. Further study in other departments is required to confirm these results.

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## Introduction

Professionalism is the ability to manage ambiguous problems, tolerate uncertainties, and make correct decisions despite limited information to provide optimal medical care to patients.<sup>1</sup> The importance of professionalism in medical education has made it crucial to evaluate professionalism during specialist training and make it part of regular evaluation during the course of medical education. This is particularly important in specialist training programs because of the need for higher competence and the expectation for more responsibility.<sup>2,3</sup> Lack of professionalisms results in medical errors.

It is well known that being in the medical profession is stressful and can lead to psychiatric conditions such as anxiety.<sup>4,7</sup> Professionalism is affected by various factors, among which is anxiety. Anxiety can result in doubts in making critical decisions. These doubts will significantly affect both care and professionalism. On the other hand, lack of professionalism will also make doctors anxious about making critical decisions in their provision of medical services. Anxiety is a barrier to good medical service and a risk factor for medical errors.<sup>4</sup> The ear, nose and throat (ENT) training program is known to be full of stressors during the specialist training

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at the Medical Faculty, Gadjah Mada University. ENT residents have to learn to deal with a broad and vital area of the human body (which includes the respiratory tract). They also have to master a broad range of competences during the course of their training, including complicated surgical techniques. These stressors are risk factors for anxiety. The potential negative effects of emotional distress include impairment of functioning in classroom performance and clinical practice, stress-induced disorders and deteriorating performance.<sup>4,8,9</sup>

We are aware that there might be an association between professionalism and anxiety, particularly in the ENT specialist training program. In this study, we developed an instrument to measure professionalism in residents in training. We used the instrument and the Hamilton Anxiety Rating Scale (HARS) to measure professionalism and anxiety among residents in the ENT specialist training program at the Medical Faculty, Gadjah Mada University.

### Material and Methods

This study was a cross-sectional study. All of the study data was collected at one measurement for every subject. The subject recruitment and data collection were conducted in December 2016.

#### Subjects

Subjects of this study were all active residents in the ENT Department, Faculty of Medicine, Gadjah Mada University. All residents with no record of committing medical errors were screened for current mental status through a psychiatric interview. Subjects who did not complete instruments or who had mental disorders that could affect his/her judgment were excluded.

The sampling method used was whole sampling because of the small sample size. There were 45 active residents potentially eligible and all of them were asked to participate; 39 residents fulfilled inclusion and exclusion criteria. After subjects provided informed consent, they were included in the study and asked to fill out the instruments and were interviewed for anxiety assessment.

#### Instruments

We developed Resident Professionalism Inventory (RPI) adapted from the milestone based professionalism standards of the Accreditation Council for Graduate Medical Education (ACGME). The RPI consisted of 37 Likert-type items with a scale of 1-4. It was divided into 5 domains. The domains were (1) affection, reflection, and respect to differences; (2) ethics; (3) self care and management; (4) professional behavior and community participation; and (5) care towards patients. The RPI total score was converted to a T-score; a T-score > 50 was defined as having sufficient professionalism. The RPI has been tested for validity and reliability which had been published elsewhere (Pearson's product moment  $r = 0.309-0.797$ ; Cronbach's alpha = 0.943).<sup>10</sup> We have

also calculated the validity and reliability of RPI in this study and found that the instrument was valid (Pearson's product moment  $r = 0.475-0.722$ ;  $P < 0.05$ ) and reliable (Cronbach's alpha = 0.927).

Anxiety was assessed by interview using the HARS, which consists of 14 Likert-type items with a scale of 0-4. Based on the total score, subjects were classified as normal (<14) and anxiety ( $\geq 14$ ).

#### Data analyses

Demographic data was described by frequency and percentage. Gender, marital status, and semesters of education were analyzed as confounding factors for anxiety as previously reported.<sup>5,9,11</sup> Statistical analyses were conducted using Fisher's exact test. Multiple logistic regressions were administered to control for confounding. Data was statistically analyzed using SPSS version 17. Statistical significance was defined as  $P < 0.05$ .

### Results

#### Subjects characteristics

Thirty-nine residents participated in this study, including 17 women (43.6 %) and 22 men (56.4 %), with an average age of  $31.4 \pm 2.6$  years. There were six subjects who did not participate in this study. The reasons for non-participation were absence (four subjects) and referral duties outside the hospital (two subjects) during data collection.

#### Anxiety and professionalisms in subjects

Anxiety was present in two subjects (5.1 %; 95% CI = 0.007-0.173). The number of subjects who had sufficient professionalism in domain 1 was 18 (46.2 %; 95% CI = 0.301-0.628), domain 2 was 22 (56.4 %; 95% CI = 0.396-0.722), domain 3 was 19 (48.7 %; 95% CI = 0.324-0.652), domain 4 was 21 (53.8 %; 95% CI = 0.372-0.699), and domain 5 was 21 (53.8 %; 95% CI = 0.372-0.699). The total professionalism score showed that most of the subjects had insufficient professionalism (53.8%; 95% CI = 0.372-0.699).

#### Associations between gender, marital status, semesters, and anxiety in subjects

Based on marital status, subjects were divided into single and married groups. Based on semesters, subjects were divided three categories based on their site of assignments (semester 1-3, triage; 4-6, ward; and 7-8, polyclinic). Results showed no significant association between gender, marital status, or semesters with anxiety in the subjects (Fisher's exact test;  $P = 0.495, 0.129, \text{ and } 0.126$ , respectively).

#### Associations between professionalism and anxiety in subjects

Results showed no significant associations among domains 1, 2, 3, 4, or 5 and total professionalism score with anxiety in our subjects (Table 1).

**Table 1.** The association between anxiety and professionalism analyzed using Fisher exact test

Professionalism <sup>a</sup>	Anxiety <sup>b</sup>		P <sup>c</sup>	
	Absent	Present		
Domain 1	Insufficient	20	1	1.000
	Sufficient	17	1	
Domain 2	Insufficient	16	1	1.000
	Sufficient	21	1	
Domain 3	Insufficient	19	1	1.000
	Sufficient	18	1	
Domain 4	Insufficient	17	1	1.000
	Sufficient	20	1	
Domain 5	Insufficient	24	1	1.000
	Sufficient	13	1	
Total	Insufficient	20	1	1.000
	Sufficient	17	1	

<sup>a</sup> Professionalism domains measured with Residents Professionalism Inventory (RPI).

<sup>b</sup> Anxiety was measured using Hamilton Anxiety Rating Scale (HARS).

<sup>c</sup> Statistical analyses using Fisher exact test.

### Multiple logistic regressions analyses results

Multiple logistic regressions were performed in this study. Only variables with  $P$  value  $< 0.250$  were included in the regression model as suggested by Bursac et al.<sup>12</sup> Two variables, marital status and semesters, were included. Results showed that the model was fit but the variables did not significantly contribute to anxiety (multiple logistic regression, Nagelkerke R square = 0.125).

### Discussion

In this study we saw no significant association between anxiety and professionalism in ENT residents. This study also showed that a majority of subjects (53.8%) showed insufficient professionalism. The prevalence of anxiety among ENT residents in the Medical Faculty, Gadjah Mada University was very low.

Shah et al also reported no significant association between stress and academic performance in their study on Pakistani medical students.<sup>9</sup> Our subjects, however, are doctors with experience to cope with medical education stressors, hence the relatively low anxiety. Nevertheless our subjects also showed no significant association between anxiety and professionalisms.

In contrast to our finding, Jahan et al<sup>8</sup> reported a significant association between stress and poor academic performance in medical students in Oman. Medical education is physically and emotionally demanding. There is evidence to show that doctors are at a higher risk of stress than the general population,<sup>4,13,14</sup> one reason why doctors have higher anxiety compared to other profession. Stress may affect patient care, relationships with other medical professionals, and future learning.<sup>8</sup> Appropriate levels of stress may enhance learning; however, excessive stress can cause physical and mental health problems, reduced self-esteem, and can affect academic achievement

and personal and professional development,<sup>15</sup> although our study failed to find such an association. Our results showed that during ENT specialist training, despite high level of stress, rigorous supervision allowed residents to learn from mistakes and correct them. This might explain the relatively low anxiety in our subjects.

The insufficient professionalism seen among our subjects could be a result of the lack of emphasis on professionalism in the medical educational system. In the current system, the emphasis is on cognitive and psychomotor competence. But insufficient professionalism might also be associated with low anxiety prevalence in our subjects. Adaptive anxiety might actually facilitate learning.<sup>16,17</sup> But overt anxiety might also prevent residents from mastering skills required to increase their professionalism.<sup>18</sup> Given the relatively low anxiety and lack of professionalism in our subjects, one could also think that our subjects may not have had adaptive coping to cope with stressors in training.<sup>19</sup> Since we did not assess for potential stressors, stress level, and how our subjects coped with such stressors, we do not have data to support this hypothesis, but these factors point to a need for further studies in the future.

Lack of professionalism often results in medical errors. It has been reported that committing medical errors results in significant distress. After committing medical errors, job satisfaction decreases while anxiety about the profession increases.<sup>6</sup> In this study, we excluded subjects who had committed medical errors because it could have affected their state of anxiety and professionalism.

There were limitations in this study that prevent the results of this study to be generalized. The first was our small sample size drawn from one center for ENT specialist training. Different teaching curricula and training programs might induce different levels of stress and different levels of anxiety. The second was our cross sectional design that prevented us from making causal associations. The third one was that our RPI instrument was a self-report instrument with internal subjective bias. Although we conducted validity and reliability studies for the instrument, the subjective bias of this instrument needs to be considered when interpreting the result of our study. Other biases were that we did not consider external factors that might contribute to the development of anxiety (such as financial burden, current occupation, socio-economic status) and lack of professionalism (educational background, cognitive level, and experience). These factors needed to be considered in the future replication of this study using a larger sample size.

### Conclusion

In conclusion, we did not observe a significant association between anxiety and professionalism. But the educational system and learning environment are widely varied across different specialist training programs. Therefore

further study in different specialist training programs is indicated to support our findings. Given the relatively low professionalism in our subjects implies a need for emphasis on professionalism in the ENT specialist training program in the ENT Department, Gadjah Mada University. Regular examination for professionalism should be scheduled to assure that residents reach appropriate levels of professionalism throughout their specialist training.

### Ethical approval

The protocol of this study was approved by the Medical and Health Research Ethics Committee (MHREC) of the Medical Faculty, Gadjah Mada University.

### Competing interest

We have no competing interest to be reported.

### Authors' contribution

BS developed the protocol of the study and data acquisition. CRM and SS developed the instrument and drafted the manuscript. BUDR was responsible for subject collection and data acquisition. IS analyzed the data and drafted the manuscript.

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