

# Empathy of Medical Interns of Kashan University of Medical Sciences and its Comparison with the Patients' Perceived Empathy in 2018

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## Abstract

**Background:** Empathy is foundation of the positive physician and patient connection. Physician empathy and the patients' perceived of the physician's empathy can lead to a more positive clinical outcome. Empathy has identified as a main goal of instruct. **Materials and Methods:** A cross-sectional study employing a convenience sample of interns and their patients in hospitals in Kashan, Iran, 2018. The Jefferson Scale of Physician Empathy was completed by interns and their patients evaluated by completing the Jefferson Scale of Patient Perceptions of Physician Empathy. **Results:** The mean score of interns' empathy and the perception of patients' empathy was  $72.65 \pm 7.99$ , and  $18 \pm 3.07$ , that the mean score of interns' empathy is very low. The gender of interns had no significant effects on their empathy ( $P = 0.236$ ), and there was no significant relationship between patient's perceived empathy with age ( $P = 0.3$ ), sex ( $P = 0.651$ ), and marital status. Statistically significant correlation was found between scores of interns' empathy and patients' perceived empathy ( $r = 0.49$ ,  $P = 0.001$ ). According to questionnaire (self-reported), the interns' empathy in surgical ward was significantly higher than the internal medicine wards ( $P = 0.01$ ). However, according to self-assessment, the interns' empathy in wards was alike (0.08). There was no significant relationship between patients perceived empathy with different wards (0.92). **Conclusion:** Due to the low empathy score of interns, medical students should be trained on value-based curriculum. Also because the patients' empathy perception in the different wards was alike, the difference of interns' empathy is unimportant. Hence, in the future studies, perceived empathy by patients is more accurate.

**Keywords:** Empathy, Intern, patients' empathy perception (PPE)

## INTRODUCTION

In the medical profession, an appropriate and effective communication between the physician and the patient is effective in diagnosis, adopting effective treatment.<sup>[1]</sup> Empathy with the patient is one of the basic and important skills to establish this communication.<sup>[2]</sup> Empathy as an important element of medical professionalism<sup>[3]</sup> is one of the humanistic qualities<sup>[4]</sup> which can increase patients' satisfaction and improve their compliance.<sup>[5]</sup>

Effective use of empathy skill causes the physician, as well as the patient, to benefit from establishing their communication. Furthermore, empathy is like a shield against job stress and exhaustion which physicians constantly face with. Better patients' compliance may be result in improved outcomes and motivate psychological factors that are formed in trusting relationships.<sup>[6]</sup>

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Received: 16-Oct-2019

Revised: 15-Jan-2020

Accepted: 15-Jan-2020

Published: 17-Jun-2020

### Access this article online

#### Quick Response Code:



Website:  
<http://iahs.kaums.ac.ir>

DOI:  
10.4103/iahs.iahs\_63\_19

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**How to cite this article:** Akbarilake M, Moraveji S, Rabbani P, Ghaffarian H. Empathy of medical interns of Kashan University of medical sciences and its comparison with the patients' perceived empathy in 2018. *Int Arch Health Sci* 2020;7:53-7.

As a major duty, medical educators should train to their trainee for increase empathy with patients.<sup>[7]</sup> However, research shows that medical students' empathy is often mistaken during medical education, and our understanding of how empathy is regulated during medical education is limited.<sup>[8]</sup> Empathy has identified as a main goal of instruct.<sup>[9]</sup> Patients' empathy perception has a direct effect on clinical outcomes and reduction of their complications.<sup>[10,11]</sup> A study showed that if a patient perceives the physician's empathy, the highest clinical outcomes will be achieved.<sup>[5]</sup> A good clinical outcome will appear if the patients perceive the physicians' empathy.<sup>[5,10]</sup> Therefore, this study was conducted with the aim to "investigation of empathy of medical students of Kashan University of Medical Sciences and comparison with their patients' perceived empathy."

## MATERIALS AND METHODS

### Research design

A cross-sectional-analytical study was carried out on 84 interns of Kashan University of Medical Sciences and their patients. The samples were selected by convenient sampling. The sample size was calculated based on similar previous studies. In those studies, the average empathy score for students and patients perception was stated  $76.62 \pm 8.8$  and  $30.1 \pm 7.5$ , respectively.<sup>[12,13]</sup> Furthermore, 95% confidence, 80% power, and standard an error about 3.5 were considered for sample volume calculation.

### Participants

Total study participants included 84 medical students (interns) (33 men, 51 women). The mean age of the interns was  $25.40 \pm 1.32$  years, ranging from 23 to 30 years and the mean age of the patients were  $41.61 \pm 14.13$  years, ranging from 14 to 78 years. Samples were chosen by simple random sampling.

### Instruments

The following instruments were used in this study.

1. The Jefferson Scale of Physician Empathy (JSPE): This is a 20-item scale that measures physician's self-reported empathy. Each item of this scale is answered on a 5-point Likert scale. The self-assessment empathy of interns was evaluated by one question that requested the interns point a score 1–100 for themselves empathy. Reliability of questionnaire content and their validity has been confirmed by Hashemipour and Karami, using Cronbach's alpha coefficient test and stated 0.70<sup>[14]</sup>
2. Jefferson Scale of Patient Perceptions of Physician Empathy (JSPPE): This is a brief survey (5-item) recently developed for measuring patient perceptions of their physician's empathy. Patients responded to each item of the survey on a 5-point Likert scale (1 – Strongly Disagree, 5 – Strongly Agree).<sup>[6]</sup>

### Administration of data

The approval of the university's Institutional Review Board was obtained for this project. The JSPE was distributed to the interns who were asked to voluntarily complete and return the scale for research purposes. Patients of these interns were

approached by a research assistant and asked to complete the JSPPE. The name and code of the interns was printed on each instrument.

Patients were reminded that their responses would be kept confidential and that their participation or refusal in no way would influence the care they received from their physicians. A research assistant explained the project to the patients as part of educational evaluations and asked them to voluntarily complete the form.

### Statistical analyses (data analysis)

Descriptive statistical methods and analytical nonparametric tests (Chi-squared, Mann–Whitney) and *t*-test were used if necessary by SPSS version 17 (SPSS, Chicago, IL, USA). Normality analysis of the data was done by Kolmogorov–Smirnov test. Pierson correlation analysis with 0.05 significant levels was used to study the relation between scores of interns' empathy and the patients' perceived empathy.

## RESULTS

### Statistical findings

Total study participants included 84 medical interns (33 men, 51 women). The mean age of the interns was  $25.40 \pm 1.32$  years, ranging from 23 to 30 years and the mean age of the patients were  $41.61 \pm 14.13$  years, ranging from 14 to 78 years.

Typical demographic characteristics of participants in this study are shown in Table 1.

### Frequency of the patients and interns in the different wards

The majority of the interns and their patients were in the internal ward and the minority of the interns and their patients in department of psychiatry.

The frequency of the patients and interns in the different wards was equal which is shown in Figure 1.

Sixty percent of interns had received medical ethics, physician–patient communication skills in the workshops, or by the education courses.

### Analytical findings

- The mean of IEAQ<sup>i</sup> was  $72.65 \pm 7.99$ . Also, the mean of IEBS<sup>ii</sup> was  $69.96 \pm 17.23$  (by one question at the end of interns' questionnaire designed for evaluation of their). The mean of PPE<sup>iii</sup> was  $18.77 \pm 3.07$  [Table 2].

Correlation between interns' empathy, patients' empathy perception, and demographic characteristics is shown in Table 3.

- The relationship between interns' empathy and the patients' empathy perception in different wards:

The IEAQ showed a significant difference in the internal and surgical wards ( $P < 0.05$ ), while the IEBS and PPE questionnaire [Table 4] showed no significant difference in these wards ( $P > 0.05$ ).

<sup>i</sup>Interns' empathy scores according to questionnaire

<sup>ii</sup>Interns' empathy based on self assessment

<sup>iii</sup>Patients' perception of interns' empathy

**Table 1: Typical demographic characteristics of participants**

Patients (n=84)						Medical interns (n=84)					
Age (year)		Sex		Marriage		Age (year)		Sex		Marriage	
Minimum-maximum	Mean (±50)	Female	Male	Married	Single	Minimum-maximum	Mean (±50)	Female	Male	Married	Single
14-78	41.61±14.13	50 (59.50%)	34 (40.50%)	69 (82.10%)	15 (17.90%)	23-30	25.40±1.32	51 (60.71%)	33 (39.29%)	14 (16.67%)	70 (83.33%)

**Table 2: Comparison of empathy scores in the three different evaluations conducts**

	Minimum-maximum	Mean
IEAQ (n=84)	53.00-87.00	72.65±7.89
IEBS (n=84)	10.00-100.00	69.96±17.21
PPE (n=84)	10.00-25.00	18.77±3.07

IEAQ: Intern's empathy according to the questionnaire, IEBS: Intern's empathy based on the self-assessment, PPE: Patients' perception of interns' empathy

- The relation of medical ethic and patient and physician communication skills educational and interns' empathy score:

There was a significant difference between the IEAQ and passing the educational course or workshop of medical ethics and patient and physician communication skills [Table 5].

**The relationship between interns' empathy and the patients' empathy perception**

A feeble positive linear correlation was found between the PPE and the interns' empathy scores [Figure 2].

A significant relation was observed between the IEAQ and PPE ( $r = 0.24, P = 0.028$ ). Furthermore, the statistical test showed that with the increase of IEAQ, the PPE was significantly increased ( $r = 0.49, P < 0.001$ ).

**Side findings**

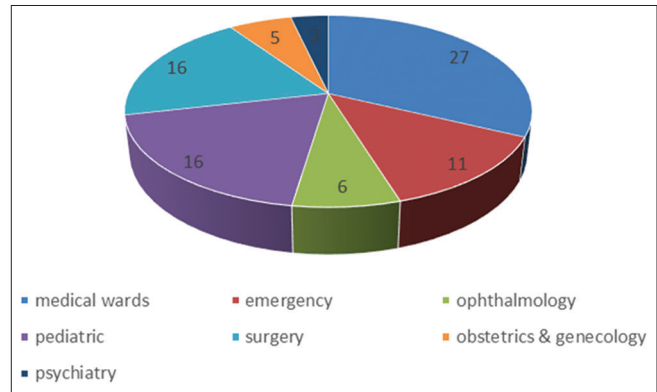
There was a significant relation between female interns' empathy and the PPE in female and male patients. Furthermore, the relation between the men interns' empathy and the men PPE was significant while it was not significant with the women PPE.

**DISCUSSION**

In this study, the mean of interns' empathy score was low as in some studies.<sup>[12,15]</sup> However, it was much low compared to the majority of studies.<sup>[2,13,16,17]</sup>

It may be because of the difference between communication and empathy skills trainings of under research societies. The minimum and maximum empathy scores (based on interns' self-assessment empathy) were 10 and 100, respectively, with the mean of  $69.96 \pm 17$  which this finding was not found in any study.

The average PPE score in the present study was  $18.77 \pm 3.7$ . This finding was lesser than finding of Glaser *et al.*<sup>[13]</sup> but this finding more than study of Elhami *et al.*<sup>[18,19]</sup>



**Figure 1: Frequency of the patients and interns in the different wards**

In this study, there was no difference between men and women interns' empathy. This is in agreement with some of studies.<sup>[15,20,21,22,23]</sup> However, in several studies, female students' empathy score was more than male.<sup>[2,24]</sup> Results of a study there are significant gender differences in empathy for men and women, so that women have been more empathetic than men in all the years of medical education. The reason for this difference may be the inherent empathy in women.<sup>[25]</sup>

Results of this study showed that there is no significant relationship between PPE and age and sex and marital status. These findings are similar to the results of Sing Ling *et al.*<sup>[22]</sup>

In my research, the interns' self-assessment empathy in various wards was not different. It means that from the interns' prospect their empathies in diverse wards are indifferent.

In the present study, there was no significant difference between perceived empathy score of patients in different wards. In other words, patients in internal and surgical wards did not feel differently about the extent of their physician's empathy. This result is different from the results of the Sing Ling's study.<sup>[26]</sup>

This study showed that there was a significant reverse relation between the score of interns' empathy with passing a medical ethic and communicational skill course. This means that, unexpectedly, the interns who had passed the workshop had a lower score. It means that in addition to studied courses, intern's empathy can be related to their social intelligence which should be studied separately. On the other hand, it can be concluded that there is a difference between knowledge, attitude, and practice about empathy. In a study, showed that there was a significant difference between the empathic performance of physicians before and after the training of empathy skills in the experimental group.<sup>[23]</sup>

**Table 3: Correlation between interns' empathy, patients' empathy perception, and demographic characteristics**

	Patients' perception empathy		Self-assessment interns' empathy		Questionnaire interns' empathy	
	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>
Age	0.11	0.3			0.066	0.549
Sex						
Female	3.32	0.65			7.09	0.23
Male	2.71				9.16	
Marital status						
Single	3.17	0.61				
Married	2.64					

**Table 4: Statistical comparison of empathy scores in the different wards**

	Ward	Mean ± SD	<i>P</i>
Self-assessment interns' empathy (IEBS)	Internal ( <i>n</i> =51)	67.08±18.35	0.08
	Surgical ( <i>n</i> =33)	73.87±15.03	
Patients' perception empathy (PPE)	Internal ( <i>n</i> =51)	18.73±3.54	0.92
	Surgical ( <i>n</i> =33)	18.80±2.37	
Questionnaire interns' empathy (IEAQ)	Internal ( <i>n</i> =51)	71.12±6.83	0.01
	Surgical ( <i>n</i> =33)	75.58±8.51	

IEAQ: Intern's empathy according to the questionnaire, IEBS: Intern's empathy based on the self-assessment, PPE: Patients' perception of interns' empathy, SD: Standard deviation

**Table 5: The relation of medical ethic and patient and physician communication skills educational and interns' empathy score**

	Passing the workshop	number	Mean ± SD	<i>P</i>
Interns' empathy	Yes	50	70.72±7.13	<0.001
	No	34	76.81±7.26	

SD: Standard deviation

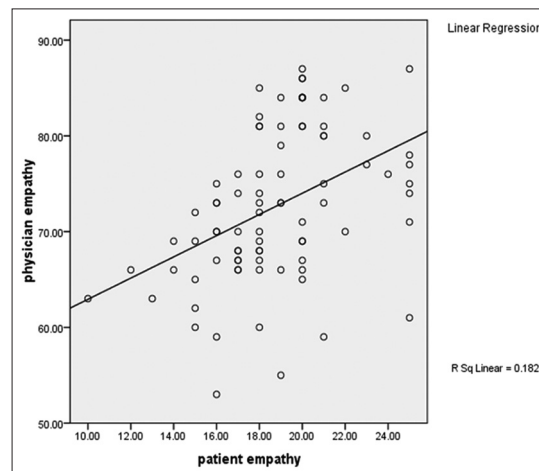
The correlation test between IEAQ and the IEBS showed a significant difference. This relation was not significant in Shariat and keykhavoni.<sup>[27]</sup> In the study of Managheb and Bagheri,<sup>[23]</sup> there is a significant and direct correlation between the physician's sympathy and the conduct of empathy skills, but in our study and Farahani this relationship is significant and inversely.

In this study, the correlation between PPE score and IEBS showed a statistically significant relationship. The results of Glaser *et al.* showed that there is a significant relationship between the physician's empathy and PPE,<sup>[13]</sup> which our study agrees with. In the study of Kane *et al.*, there was no significant correlation between the PPE perceptual scores with IEBS.<sup>[6]</sup>

For the female interns, the male and female PPE was alike while weak relation of male interns' empathy with female patients is a notable finding which can be related to cultural and social factors and also current social facts.

## CONCLUSION

Due to the low empathy score of interns, medical students should be trained on value-based curriculum. Also because



**Figure 2:** The relation between perceived and interns' empathy scores

the patients' empathy perception in the different wards was alike, the different interns' empathy is negligible. Hence, in the future studies, perceived empathy by patients is more accurate.

## Recommendation

- In the future studies, more concentration on patients' perception empathy is recommendable
- Study of the reasons for weak empathy of male interns with female patients
- More notice to attitude and performance rather than knowledge in future communication skill workshops
- Teaching and using the empathy skills for medical students from the earliest semesters
- Empathy training should be at the core of the medical curriculum.

## Acknowledgment

We thanks the patients and interns of Beheshti and Matini hospitals of Kashan University of Medical Sciences because their contribution also deputy of research and technology of Kashan University of Medical sciences.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

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