

*Are there differences in health professionals' empathy due to academic and clinical experience?*

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**Abstract**

**Objective:** The health professional's empathy has a positive effect on treatment outcomes and the well-being of both patients and professionals. The aim of this research was to assess the empathy levels of first-year medical and psychology students and to compare these levels with those of trained psychologists and physicians. In addition, we also analysed the potential effects of years of professional practice and the average number of patients treated on the empathy of professionals. **Method:** We evaluated cognitive and emotional empathy through the Interpersonal Reactive Index and the Reading the Mind in the Eyes Task. **Results:** The results showed that perspective taking in medical students was lower than that of psychotherapists, and psychotherapists and physicians reported lower levels of personal distress than psychology students. We did not find evidence of general detrimental effects of clinical experience on the capacity to feel sympathy and compassion towards others, but we did find lower empathic concern levels in those professionals with higher workloads. **Conclusion:** considering that these effects have been seldom studied among psychologists, additional longitudinal research might indicate how empathy is influenced by training over time. On the other hand, since emotional distress can be detrimental to the professional's performance, our results suggest that empathy needs to be promoted and trained, in order to preserve the ability to feel with others without falling into an extreme of emotional distress.

Key words: psychologists, physicians, empathy, students, experience

## **Introduction**

In recent years, interest in the study of empathy has grown, and it has been recognized as a fundamental aspect in the training of health professionals.

The construct of empathy has no single definition. For some authors, empathy is an affective characteristic. For example, Eisenberg and Mussen (2003) define it as *“an emotional state that stems from the apprehension of another's state or condition”* (p. 44). Moreover, it would be a specific emotional response of compassion and care for other people (Batson, 1991). This emotional response is also known as sympathy (Eisenberg & Mussen, 2003; Wispé, 1986).

On the other hand, some authors consider that empathy is a cognitive ability to adopt the perspective and understanding of others (Hojat, et al, 2009). Finally, some researchers conceptualize empathy as a combination of cognitive and emotional aspects (Davis, 1983).

In the field of clinical psychology, Rogers (1959) was the first to describe the concept of empathy in psychotherapy. He proposed that the way in which therapists internalize their responses to the client's experiences and internal perceptions gives rise to conditions not only for compassion, but also for behaviours oriented to regulate those subjective experiences and perceptions. On the other hand, from a medical standpoint, Decety & Fotopoulou (2014) argue that empathy is perceived by patients as the physician's ability to understand the way

they feel and think, as well as the way in which he expresses his concern, compassion and care for their well-being.

### *Empathy in physicians and psychologists*

Recent research has begun to identify the qualities and abilities that contribute to the development of positive health professional-patient relations. Consequently, empathy has become an important factor to consider due to its effect on patient and treatment outcomes in both psychotherapy (Angus & Kagan, 2007) and medicine (Decety & Fotopoulou, 2015).

In the field of clinical psychology, a systematic review of 115 studies (Orlinksy, Grawe & Parks, 1994) found a positive correlation between psychotherapists empathy and treatment outcomes in 54% of the cases. In addition, a therapist's empathetic comprehension increases the patient's relief and their emotional self-regulation ability (Elliot, Goldman & Greenberg, 2004), and besides, those therapists with higher empathy levels establish a better therapeutic alliance than those with lower levels (Malin & Pos, 2015).

From a medical standpoint, different studies have shown that empathy is beneficial for both patients and doctors. Hojat et al. (2011) found positive correlations between physician cognitive empathy and clinical improvements in diabetic patients. Furthermore, the physician's understanding of the patient's perspective strengthened the patient's perception of social support and their feeling of being helped. Moreover, other studies found physician empathy is related to patient satisfaction (Levinson, Roter, Mullooly, Dull & Frankel, 1997; Kim, Kaplowitz & Johnston, 2004). On the other hand, the physicians themselves seemed to benefit from high empathy levels: a recent study found an association between higher empathy scores and better clinical competence in medicine, as well as better physician-patient communication (Ogle, Buschnell & Caputi, 2013). High empathy levels are also positively associated with professional satisfaction and treatment adherence, and negatively associated with stress, burnout symptoms (Levinson et

al., 1997; Neuwirth, 1997) and the probability of malpractice lawsuits (Levinson et al., 1997).

Given the benefits that empathy seems to provide for both health professionals and patients, some authors suggest that empathy is one of the most desirable traits that a medical education should promote (Hojat et al., 2009).

### Measurement of Empathy

Empathy can be assessed through different measures: physiological measures (functional magnetic resonance imaging, brain potentials, skin conductance responses), psychometric tests, and experimental behavioural tasks. Among them, the most used in research have been the self-report questionnaires designed to evaluate the empathy trait and its dimensions, like the Jefferson Scale of Physician Empathy (JSE) developed by Hojat and colleagues (2001) for healthcare contexts. The JSE measures predominantly the cognitive aspect of empathy and some authors suggest it could be affected by social desirability. (Costa et al, 2017). Another widely used measure is Interpersonal Reactivity Index (IRI) by Davis (1983; Costa et al., 2017) that, according to a recent review (Neumann et al., 2011), is one of the most validated and reliable self-report measures of empathy. The IRI consists of four subscales that measure cognitive (perspective taking and fantasy) and affective (emphatic concern and personal distress) components of empathy. Neumann et al. (2011) also suggest that it is important to assess empathy in a more indirect way to reduce potential social desirability bias among health professionals. An alternative to self-report assessment is the Reading the Mind in the Eyes Test – RME (Baron-Cohen, Wheelwright, Hill, Raste & Plumb, 2001), which evaluates the ability to infer internal states through the observation of

facial expressions (specifically, the eye region). The RME seems to be a promising alternative because is based on the theory of mind construct and is closely related to cognitive empathy (Baron Cohen et al., 2001; Vollm et al., 2006). In addition, it has been shown to be correlated with several self-report measures of empathy (Lawrence et al., 2004).

## Objectives

The main goal of the current study was to analyze if training and clinical experience in psychology or medicine produces changes in levels of cognitive and affective empathy. Therefore, the specific aims the study included the following:

- a) To examine potential differences in cognitive and affective empathy between first-year medical and psychology students and trained clinical psychologists and physicians.
- b) To study if years of professional practice and the average number of patients treated per week modulated the cognitive and/or affective empathy of clinical psychologists and physicians.

## Methodology

### *Participants*

A total of 126 healthy adult Argentinian subjects participated on the study. This sample consisted of four different groups: two groups of first-year university students from medicine and psychology carers; and two groups of health professionals, physicians and clinical psychologists. These groups are described in further detail in the following sections.

### *Health professionals*

The health professional samples consisted of a group of 33 physicians (17 women) with a mean age of  $34.73 \pm 6.06$  years and a group of 31 clinical psychologists (25

women) with a mean age of  $35.35 \pm 7.24$  years. Professionals were recruited from two public hospitals and a private psychotherapy clinic. Permission to contact the professionals by e-mail was obtained from the hospital and clinical psychology centre directors and from the chairmen in the case of university professors.

The mean number of years of experience was  $8.97 \pm 5.57$  years among physicians, and  $8.48 \pm 7.47$  years among psychologists.

### *University students*

Student samples consisted of first-year students of medicine and psychology from four universities in Buenos Aires, two of them were public and other ones private. There were 32 students (25 women) in the psychology group, with a mean age of  $23.88 \pm 7.23$  years, and 30 students (22 women) in the medical group, with a mean age of  $19.4 \pm 2.22$  years.

### *Procedure*

The study was conducted in the students' and professionals' respective school and work locations.

To access the sample of health professionals, the managers of two public hospitals and a private clinic in the city of Buenos Aires were contacted and the objectives of the research were explained to them. Next, the managers gave the corresponding authorizations to summon the health professionals of their institutions and invite them to participate in the investigation. To access the sample of students, the authorities of four Argentine universities were contacted, two public and two private, which dictate careers in medicine and psychology. The objectives of the research were explained to them and once the authorizations were obtained, the students were invited to participate.

Participants started by completing a demographic questionnaire. After this, they completed the RME task and the IRI test in a counterbalanced order. The RME task was completed by three participants at the same time; stimuli were shown on a 17" computer screen, and responses were collected using a multiple-choice

format. Participants were allowed to search for definitions of unfamiliar emotional terms in a specific glossary. The IRI test was self-administered, and it was completed in 10 minutes or less by most participants.

Subject participation was voluntary and anonymous, and none of the participants received any kind of compensation for participating.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee of the Italian Hospital of Buenos Aires and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

### *Instruments*

Interpersonal Reactivity Index (IRI) (Davis, 1986; Mestre, Frías, & Samper, 2004): This instrument evaluates empathetic disposition via two cognitive (*perspective taking* and *fantasy*) and two emotional factors (*empathic concern* and *personal distress*) (Davis, 1980). The perspective taking (IRI-PT) subscale assesses the ability to adopt the perspectives of others in common life, fantasy (IRI-FS) subscale measures the proclivity to identify with fictitious characters, personal distress subscale (IRI-PD) refers to the propensity to feel uncomfortable about the distress of others, and finally the empathic concern (IRI-EC) subscale evaluates the tendency to experience feelings of compassion and sympathy for others' misfortunes. The instrument consists of 28 Likert-type items, each adopting a 5-point scale ranging from 0 = does not describe me very well to 4 = describes me very well. Cronbach's alpha, a reliability measure for the IRI empathy questionnaire, was calculated for each scale in the current study: perspective taking ( $\alpha = .76$ ); fantasy ( $\alpha = .76$ ); personal distress ( $\alpha = .72$ ); and empathic concern ( $\alpha = .73$ ).

Reading the Mind in the Eyes Task (RMET) (Baron-Cohen, 2001): The RMET was translated to Spanish and adapted to the Argentinian population by Roman et al.

(2012). It consists of 36 pictures that show the upper facial section, the eye region, of men and women. Each picture is accompanied by four words describing mental states. Subjects are required to choose from these four alternatives the one that best describes the thoughts and feelings expressed by the picture. Fernández-Abascal, Cabello, Fernández-Berrocal & Baron-Cohen (2013) examined the distribution of responses and scores from a Spanish version of the Reading the Mind in the Eyes test in a non-clinical Spanish population. They found that not all items are equally difficult, which should increase the discriminant ability of the test. The distribution of difficulty across all items of the test was approximately normal and greater than 50% for the correct responses. Therefore, the authors generated a list of difficult and easy items in the RMET. When analysing the results, we generated a score based on how many correct items were in the categories "easy" and "difficult".

Years of experience. Health professionals were consulted about how many years they had worked as psychologists or physicians. For statistical comparisons, the sample was divided into professionals with 10 years or fewer of professional experience and those with 11 or more of experience following the procedure used in previous studies (Schoenfeld-Tacher, Shaw, Meyer-Parsons & Kogan, 2017). These authors found personal distress scores, which are a negative indicator of empathy, to be highest among new practitioners (0–5 and 6–10 years in practice), so we divided the sample between those with less or 10 years and those with more than 11 years of experience, considering those with less or 10 years of experience as beginning clinicians

Number of patients seen per week. Physicians and psychologists were asked to indicate the number of patients they assisted per week. The possible responses were 20 patients or fewer and 21 or more.

## **Statistical analysis**

Data were analysed using the Statistical Package for the Social Sciences (SPSS), version 18.0. Comparisons of RMET and IRI scores between groups were carried out by MANOVAs, and associations between variables were examined with Spearman's rho correlation coefficient.

## Results

The descriptive statistics (mean and standard deviation) of the empathy and RMET scores for physicians, psychologists, medical and psychology students are shown in table 1. The descriptive statistics of the empathy and RMET scores by years of experience and number of patients are shown in table 2.

Table 1. Scores for physicians, psychologists, medical students and psychology students.

	Physicians (n=33)		Psychologists (n=31)		Students of psychology (n=32)		Students of medicine (n=30)	
	Mean	S.D	Mean	S.D.	Mean	S.D.	Mean	S.D.
IR-PT	26.75	4.76	27.19	3.6	25.44	5.37	23.93	4.67
IRI-FS	19.81	4.85	21.87	3.92	20.25	4.75	21.23	5.76
IRI-EC	28.4	4.02	27.19	3.61	23.44	5.37	26.46	4.48
IRI-PD	15.0	4.17	15.42	4.32	19.06	5.87	17.7	4.97
RMET total	26.24	3.03	26.81	3.23	25.06	3.74	25.03	3.28
LMO easy	16.36	2.22	17.10	1.92	15.38	2.16	15.13	2.22
LMO difficult	9.88	2.10	9.81	1.78	9.63	2.30	9.80	1.75

Table2. Empathy and RMET scores by years of experience and average number of patients for physicians and psychologists.

	Psychologists and physicians 10 or fewer years of experience		Psychologists and physicians 11 or more years of experience		Psychologists and physicians 20 or fewer patients		Psychologists and physicians 21 or more patients	
	n= 40		n= 24		n=27		n=36	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
IRI-PT	27.07	3.44	26.79	5.35	27.41	3.55	26.55	4.69
IRI-FS	20.55	4.16	21.25	5.10	22.37	4.46	19.80	4.23
IRI-EC	27.5	3.24	28.12	3.24	28.85	3.56	26.81	3.83
IRI-PD	16.32	3.89	13.33	4.14	16.89	4.12	15.30	3.84
RMET total	26.42	3.06	26.67	3.27	26.22	3.24	26.78	3.08
LMO easy	16.58	1.94	16.96	2.35	16.78	2.04	16.75	2.22
LMO difficult	9.93	2.03	9.71	1.80	9.56	2.04	10.03	1.87

*Comparison of empathy and RMET scores between physicians, psychologists and student groups*

The first goal of the study was to examine potential differences in cognitive and emotional empathy (IRI) between four groups: professionals (psychologists and physicians), and students (medical and psychology). The model was significant according to the Hotelling trace criterion for empathy scores,  $F_{(12, 353)} = 2.89$ ,  $p \leq .001$ ,  $\eta^2 = .089$ . Significant differences across professions in perspective taking, ( $F_{(3, 122)} = 3.06$ ,  $p < .031$ ,  $\eta^2 = .07$ ) and personal distress ( $F_{(3, 122)} = 4.96$ ,  $p < .003$ ,  $\eta^2 = .109$ ) emerged under univariate analysis. Tukey's HSD contrast showed that IRI-PT in medical students was lower than that of psychotherapists (Tukey's HSD = -3.26,  $p = 0.036$ ). Regarding IRI-PD, psychology students showed higher scores than both psychotherapists (Tukey's HSD = 3.64,  $p = .019$ ) and physicians (Tukey's HSD = 4.06,  $p = .006$ ). See Figure 1.

We analysed the potential differences in RMET scores between four groups: professionals (psychologists and physicians), and students (medical and psychology). The model was significant according to the Hotelling trace criterion,  $F_{(9, 356)} = 2.43$ ,  $p=.011$ ,  $\eta^2 =.058$ . Univariate analysis revealed significant differences between professionals and students in LMO easy,  $F_{(3, 122)} = 5.60$ ,  $p < .001$ ,  $\eta^2 =.12$ , while no significant differences in LMO difficult and LMO total were observed. The post hoc Tukey's HSD contrast indicated that medical students and psychology students showed lower scores in the RMET easy items than did the psychotherapists (Tukey's HSD= -1.96,  $p = .003$  and Tukey's HSD= -1.72,  $p= .009$ , respectively). See Figure 2.

Fig. 1. Comparison of Empathy Between physician, psychologist, student of medicine and psychology. Interpersonal Reactive Index

Fig. 2. Comparison of Empathy Between physician, psychologist, student of medicine and psychology. RMET

#### *Effect of years of experience and number of patients*

The potential effects of clinical exposure on empathy were taken into account by considering the years of experience and average number of patients seen weekly in the professional groups. MANOVAs were conducted on IRI and RMET test scores comparing professionals with less or more than 10 years of experience. The Hotelling trace criterion indicated significant differences in IRI scores ( $F_{(4,59)}=2,407$ ;  $p=.05$ ,  $\eta^2=.14$ ). Professionals with more years of clinical experience showed significantly lower scores in IRI-PD ( $F_{(1,62)} = 8,44$ ;  $p=.005$ ,  $\eta^2=.12$ ). See Figure 3.

On the other hand, RMET scores were not significantly different between these groups ( $F_{(3,60)}= 0,453$ ;  $p=.716$ ,  $\eta^2=.022$ ).

Regarding differences based on the number of patients seen per week, a MANOVA was used to compare subjects with an average higher ( $n = 27$ ) or lower ( $n = 36$ ) than 20. The Hotelling trace criterion indicated significant differences between IRI scores ( $F_{(4, 58)}= 4,91$ ;  $p=.002$ ,  $\eta^2=.253$ ). Those professionals who

treated more patients per week showed lower scores in personal distress ( $F_{(1, 61)} = 7.547$ ;  $p = .008$ ,  $\eta^2 = .11$ ), empathic concern ( $F_{(1, 61)} = 4.66$ ;  $p = .035$ ,  $\eta^2 = .071$ ) and fantasy ( $F_{(1, 61)} = 5.41$ ;  $p = .023$ ,  $\eta^2 = .08$ ), while no differences were observed in perspective taking. See Figure 4.

Moreover, the number of patients had no significant effect on RMET scores ( $F_{(3,59)} = .823$ ;  $p = .486$ ,  $\eta^2 = .040$ ).

Fig. 3. Years of experience: effects in the professional's empathy

Fig. 4. Amount of patients treated per week: effects in the professional's empathy

## Discussion

To our knowledge, this is the first study to assess empathy in both psychology and medical students and professionals by combining self-report (IRI) and behavioural (RMET) measures. Our first objective was to examine potential differences in cognitive and affective empathy between first-year medical and psychology students and trained clinical psychologists and physicians.

The results of our cross-sectional study indicated that psychotherapists and physicians reported lower levels of personal distress than psychology students. This could be interpreted as an indicator of more developed emotional regulation abilities in psychotherapists (Pletzer, Sanchez & Scheibe, 2015), who are required to adequately modulate vicarious emotions evoked during therapist-patient interactions. In the same line, other studies have observed that therapists are more capable than control subjects of controlling their own emotional responses at will (Pletzer, Sanchez & Scheibe, 2015), and this ability is considered necessary to respond to patients while safeguarding their own well-being (Eisenberg & Eggum, 2009). In the field of medicine, the evidence and interpretation of affective empathy changes during medical training and professional practice have been more controversial. On one hand, a systematic review of 18 studies (including both cross-sectional and longitudinal designs) found evidence for empathy decline in medical students (9 out of 11 studies) and residents (6 of 7 studies) (Neumann et

al., 2011). The authors suggested that this downward trend could be explained by two main factors: coping mechanisms developed by students to protect themselves from stress caused by over-identification with patients, and distress caused by elements of a “hidden curriculum” (West & Shanafelt, 2007). However, it should be noted that other studies found no decline in empathy among medical students (Esquerda, Yuguero, Viñas & Pifarré, 2016).

Moreover our results found that psychotherapists reported higher level of perspective taking (cognitive empathy) than medical students. Finally, psychologists obtained higher theory of mind scores than both groups of students. In the same line, previous cross-sectional studies have shown that cognitive empathy increases and affective empathy decreases when comparing trained psychologists with novice or advanced students (Georgi, Petermann & Schipper, 2015; Palhoco & Afonso, 2011).

The second objective of this paper was to study if the number of years of professional practice and the average number of patients treated per week modulated the cognitive and/or affective empathy of clinical psychologists and physicians. The results indicated that clinical exposure (years of experience and average number of patients treated) was associated with lower affective empathy scores. Specifically, professionals with more years of clinical experience showed significantly lower scores in personal distress. In the same line, a study with veterinary practitioners found personal distress scores to be highest new practitioners (0–5 and 6–10 years in practice) compared to their counterparts with 21–25 and 26+ years of clinical experience (Schoenfeld-Tacher, Shaw, Meyer-Parsons & Kogan, 2017). Regarding medical professionals, a study assessing psychological distress and burnout symptoms among physicians found that more experienced doctors reported lower distress and burnout scores, and the effect was attributed to “lessons learned over their years of training and practice” (Peisah, Latif, Wilhelm and Williams, 2009).

Additionally, our study found that professionals who treated more patients per week showed lower scores in personal distress, empathic concern and fantasy,

while no differences were observed in perspective taking. This particular result might be an indicator that work overload may negatively impact a physician's capacity for empathetic compassion. In spite of this, we should point out that empathic concern of doctors as a group did not differ significantly from the rest of the participants; therefore, potentially negative effects may have been limited to those physicians with higher workloads. Taken together, the available evidence for decreasing personal distress does not seem to reflect a general detrimental effect of burnout and stressful working conditions on empathy, but rather a result of strengthened emotional regulation mechanisms developed to cope with the empathetic demands imposed by continuous contact with the physical and/or psychological pain of others (Decety, Yang & Cheng, 2010). Although the empathic concern and personal distress are affective empathy subscales, it is important to note that IRI-EC is "other-directed" whereas IRI-PD can be seen as "self-directed" (Davis, 1983). Therefore, having decreased personal distress could be associated with a better clinical performance. As a matter of fact, Thomas et al. (2007) found that high levels of personal distress are associated with a lower well-being that affects medical performance.

#### *Limitations and further studies*

In our study, we were unable to conduct gender comparisons due to the low proportion of men within both student and professional groups.

Among the limitations of the present study, we should note the generally low proportion of male participants and the age differences between first-year psychology and medical students. According to the 2011 University of Buenos Aires census (SIP, 2011) both psychology and medical fields have a mainly female student population (81.7 and 73.1%, respectively), and while 50% of medical students are under 25 years old, the average age of psychology students is 28. We should also reckon that we included psychotherapists from different theoretical affiliations (psychoanalysis, cognitive behavioural therapy, systemic) and physicians from diverse specialties (paediatrics, neurology, traumatology, etc.), but we were unable to conduct systematic comparisons between these subgroups.

Future studies might take these variables into account to further assess the differential effects of gender, training and clinical experience on empathy. On the other hand, longitudinal studies are needed to reduce between-subject variance and examine experience-related changes in empathy with greater detail.

Although self-reported empathy is one way to measure this important construct, in psychotherapy, the client's rating of the therapist's empathy is the most crucial metric (Martin, Garske & Davis, 2000). In fact, Carl Rogers' original conceptualization of facilitative conditions indicated that it is only the client's recognition of the therapist's communication of empathy what matters. Therefore, future studies should include relevant client ratings of the empathy of therapists or physicians either evidence of significant relationships with indicators of clinical competence and positive patient outcomes (Hojat & Gonnella, 2017).

We did not find evidence of general detrimental effects of clinical experience on the capacity to feel sympathy and compassion towards others, but we did find lower empathic concern levels in those professionals with higher workloads. On the other hand, a higher empathy associated with emotional distress in the face of the pain of others is observed in the students and novice professionals.

Future studies should consider the available evidence of the positive impact of empathic abilities on both patients' and clinicians' well-being. We believe that psychology and medical curricula would benefit from including programmes and interventions designed to enhance the development of empathy among students.

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"Health and empathy: Evolution of empathy according to academic training and professional practice"

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent: Informed consent was obtained from all individual participants included in the study.

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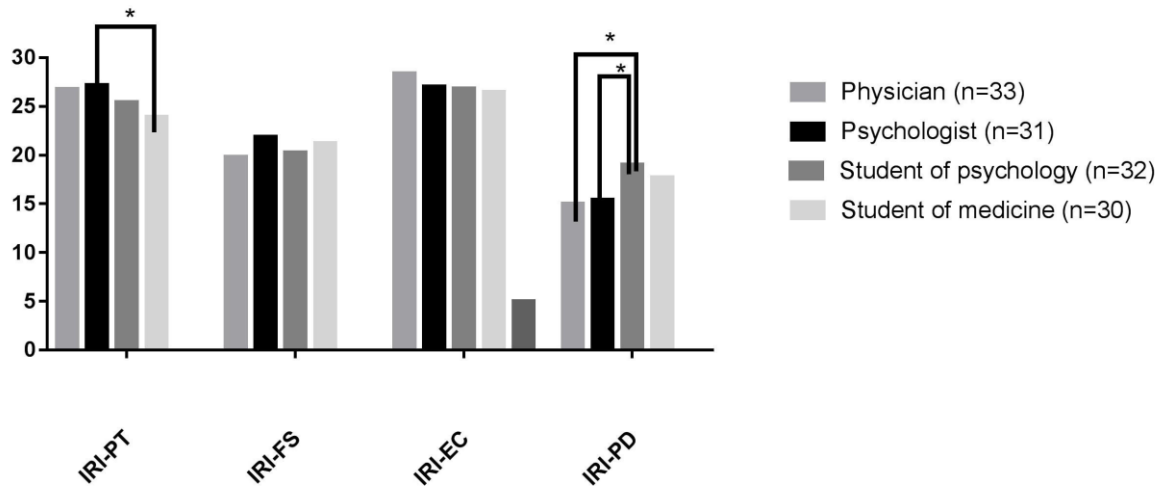


Figure 1. Comparison of empathy between physicians, psychologists, medicine and psychology students. IRI: Interpersonal Reactivity Index.

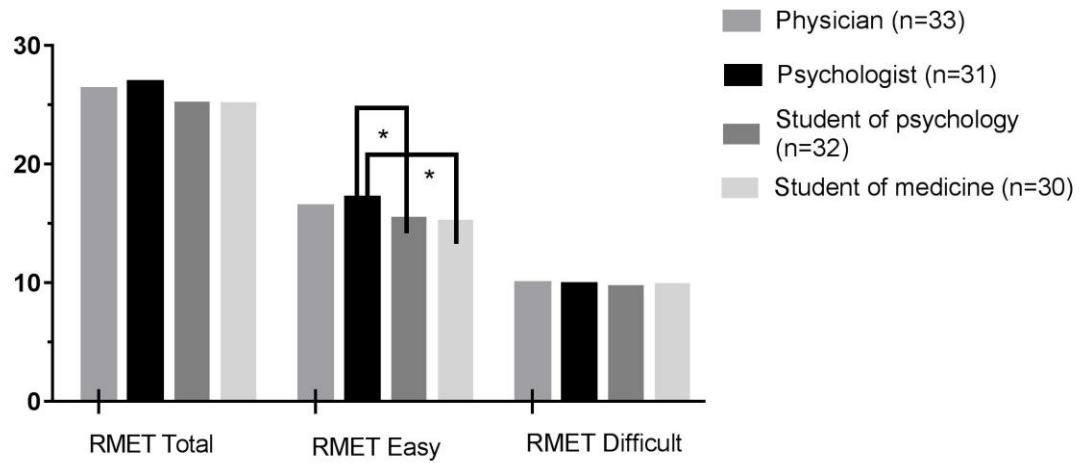


Figure 2. Comparison of empathy between physicians, psychologists, medicine and psychology students. RMET: Reading the mind in the eyes task.