

# *Empathy types in medical and pedagogical professions*

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## BACKGROUND

The aim of the study was to find out whether certain types of empathy are over- or underrepresented in medical and educational professions. We used the following four types of empathy profiles: “Situation-dependent altruists” (A) have high affective and cognitive empathy aspects with high personal distress. “High-functioning empaths” (B) differ from pattern A by the low distress. People who have neither clear affective nor cognitive empathy traits, but are characterized by high distress, are “low neurotic empaths” (C). Types whose mean scores on all three aspects were below the mean are referred to as “low empaths” (D).

## PARTICIPANTS AND PROCEDURE

The sample consisted of 439 subjects. The group of medical professionals included doctors, nursing staff, and other medical staff. The group of educators included teachers, social pedagogues, educators, social workers and special needs teachers. We used the German version of the Interpersonal Reactivity Index (IRI) to measure empathy.

## RESULTS

The two occupational groups differed from each other non-significantly in their respective distribution. In the nursing staff sample, profile B is clearly overrepresented and profile C is clearly underrepresented. Nursing staff therefore have a high level of emotional concern and perspective taking together with lower distress. Nurses and pedagogical staff occur in our sample most frequently in the empathic pattern A and B.

## CONCLUSIONS

The typologization of empathy skills proved to be a good method of describing affective and cognitive aspects of empathy within a personality. In addition, the results emphasize the importance of empathy training, which is well established in medical education but virtually non-existent in pedagogical education.

## KEY WORDS

medical professions; IRI; empathy types; pedagogical professions; empathy

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## BACKGROUND

Empathy as the ability to understand and/or feel the emotions of others is seen as a multidimensional concept consisting of both an affective and cognitive component (Cliffordson, 2002; Cuff et al., 2016; Vossen et al., 2015; Ze et al., 2014).

This approach is best represented by the theory of Davis (1980), who describes four aspects of empathy. The affective aspects are the so-called emotional concern (EC), i.e. sympathizing with the observed emotion of another person, and personal distress (PD), which, in contrast to emotional concern, is a self-focused rather than other-focused feeling of personal anxiety and discomfort in tense interpersonal situations. The cognitive side of empathy is described by the aspects of perspective taking (PT), i.e. the spontaneous tendency to adopt or understand another person's point of view, and the so-called fantasy scale (FS), which extends this perspective taking to fictional characters from films or books. However, the latter aspect is controversial with regard to its classification as a cognitive factor, as it mixes both affective ("after a good movie I *feel* like the main character") and cognitive aspects ("I can easily *imagine* the feelings of a person in a novel") in the formulation of the questionnaire described below (Ingoglia et al., 2016; Koller & Lamm, 2015; Paulus, 2021a, 2021b; Paulus & Meinken, 2022).

There is a rather moderate correlation between both poles of empathy (De Corte et al., 2007:  $-.09 < r < .37$ ; Gilet et al., 2013:  $.48 < r < -.42$ ; Ingoglia et al., 2016:  $.29 < r < .51$ ). Cronbach's  $\alpha$  was .79, .69, .65, and .71 for fantasy, empathic concern, perspective taking, and personal distress, respectively (Ingoglia et al., 2016).

The proportion of cognitive or affective empathy components is not the same for everyone, which can have an impact on empathy-based behaviors such as

altruism. In particular, the PD factor plays a decisive role in whether a person provides help in certain situations or not. If one's own distress in emergency situations is very high and it is not possible to escape from the situation, e.g. due to bystanders or a lack of opportunity, then one tries to help. If, on the other hand, it is possible to escape from the distress-inducing situation, then one is more likely to flee than to help (Batson, 1987; Batson et al., 2009).

Similar to other typologies (e.g. Rode & Marganski, 2014), there have been approaches that attempt to develop typologies that can describe the different parts of empathy in people (Anderson, 2020; Schrötter et al., 2024; Sobhani, 2019; Stellar et al., 2020; Yao et al., 2021). However, all the approaches mentioned here have recognizable weaknesses; either their typologies are not clear-cut and exhaustive (Anderson, 2020) or they are formulated too loosely and therefore too vaguely (Sobhani, 2019). Only the approach of Yao et al. (2021) seems complete and clear-cut to us, but it includes the FS scale, which we cannot clearly define as affective or cognitive. We therefore refer to the approach of Paulus (2024b), who was able to identify four clearly separated and exhaustive types of empathy by means of a configuration frequency analysis (as shown in Table 1).

As one can see, the aspect FS is not included in the typologies because its theoretical classification as affective or cognitive is not clear, as mentioned above.

Pattern A in Table 1 reflects the influence of PD as described by Batson et al. (2009). We therefore call people with this configuration "situation-dependent altruists" (A). They have high affective (EC) and cognitive (PT) empathy aspects, but these can be influenced by PD depending on the situation. These individuals will provide help if escape from the emergency situation is not possible and they also have the time or ability to help, otherwise their high distress will tend to advise them to flee. Pattern B, the "high-functioning empathys" pattern, differs from pattern A by the low distress, which therefore does not include this deficiency. Pattern C describes people who have neither clear affective nor cognitive empathy traits, but are characterized by high PD. High distress can be a sign of neuroticism, as these two variables correlate quite strongly with each other (Paulus, 2016:  $r = .57, p < .01$ ). We therefore refer to this empathy type as "low neurotic empathys" (pattern C). Types whose mean scores on all three aspects were below the mean are referred to as "low empathys" (pattern D), as they did not show normal to high levels in any of the three relevant aspects. Profiles B, C, and D occur more frequently among men, while profile A appears to be more typical for females (Paulus, 2024b).

Empathy is an important component of professions that work with people. In our study, we look in particular at pedagogical professions on the one hand and social professions such as doctors or nurs-

**Table 1**

*Empathy types in the reference group (N = 10,161)*

Empathy types	Empathy patterns	%
Not clearly categorizable		25.70
Situation-dependent altruists (A)	EC↑, PT↑, PD↑	23.10
High-functioning empathys (B)	EC↑, PT↑, PD↓	40.40
Low neurotic empathys (C)	EC↓, PT↓, PD↑	3.60
Low empathys (D)	EC↓, PT↓, PD↓	7.30

Note. ↑ higher mean aspect scores; ↓ lower mean aspect scores; the remaining persons could not be clearly assigned to a profile.

ing staff on the other. Caring for their students and building a good student-teacher relationship is essential for teaching professions. Good cognitive empathy skills help to recognize students' moods and feelings, e.g. whether they react happily or sadly to feedback, whether they are afraid of exams or why they may not be able to answer questions (Aldrup et al., 2022). Affective empathy then helps teachers to respond appropriately and sensitively to these situations. In addition, empathic teachers are better able to cope with classroom management, design lessons in a more optimal and student-centered way and lead their students to better performance results (Gehlbach et al., 2011; Meyers et al., 2019; Wink et al., 2021). Especially the preschool period is critical for individual development. "During this period, children's emotions become increasingly differentiated and easily influenced by external situations (Liu et al., 2017). These characteristics call for greater empathic abilities among preschool teachers than among other teachers" (Wang et al., 2018, p. 707). Empathetic teachers are also quicker and better at recognizing and resolving bullying, as they can apply more effective strategies by recognizing the situation early on (Byers et al., 2011; Huang et al., 2018; Redmont, 2017).

Empathic skills can have similarly positive effects in medical professions, too. Empathy is named as the most important personality trait of a humanistic physician (Linn et al., 1987) and is considered important for their professionalism in medicine (Veloski & Hojat, 2006). Empathic doctors build better relationships with their patients (Berg et al., 2011), patients respond better to instructions from empathetic doctors (Noordman et al., 2019), with which better therapeutic success could be achieved (Hojat et al., 2011) and these doctors are also better at delivering bad news to their patients (Bukowski et al., 2022).

#### OCCURRENCE OF EMPATHY PROFILES IN THESE PROFESSIONS

Anderson (2020, p. 42) found that in a group of nurses, "high affective", characterized mainly by high levels of personal distress and fantasy, (63.8%) or "high functioning", which had the highest levels of perspective taking, empathic concern and fantasy, but also low personal distress (58.3%), empathy profiles were represented, whereas in the group of "first responders" (in Anderson's sample, firefighters, police officers or emergency doctors) 75% of the profile "low empathy", characterized by low values on all four empathy aspects, were found. In a study with psychotherapists, Laverdiere et al. (2019, pp. 41–42) found four distinguishable profiles of their subjects: "insecure self-absorbed", characterized by below average levels for PT, FS and EC, and the highest level of

PD (23%), "empathic immersion", clinicians who exhibited above-average levels for PT and FS, with EC at the highest level compared to other profiles (26%), "the average expected clinician", clinicians who likely display adequate levels of emotional concern and perspective taking toward their patients, with occasional experiences of distress during sessions (38%), and finally the "rational empathic", characterized by the highest level for PT, average level of EC, low level of FS, and lowest value for PD (13%).

While studies on empathy are very frequently conducted in the medical context, there are virtually no approaches in the field of education to describe empathy typologies from an individual perspective. The only study known to us, from Wang et al. (2018, pp. 711–712), on this approach found three distinct profiles of preschool teachers: First was the "moderate empathy group", characterized by moderate levels of affective and cognitive empathy (25.4%). Profile 2 (33.8%) was the "high cognitive empathy-moderate affective empathy group"; individuals with this profile had high levels of cognitive empathy and moderate levels of affective empathy (33.8%). Third was the "high empathy group" with high scores on both, affective and cognitive, dimensions (40.8%).

The aim of our study was to find out whether certain types of empathy are over- or underrepresented in medical and educational professions.

## PARTICIPANTS AND PROCEDURE

### PARTICIPANTS

The sample is a subset of the reference sample and consisted of 439 subjects (26.9% male, 73.1% female) aged between 18 and 77 years ( $M = 36.95$ ,  $SD = 11.98$ ). The group of medical professionals ( $n = 193$ ) included doctors, nursing staff (nurses, geriatric nurses or pediatric nurses), alternative practitioners, therapists, medical-technical assistants and psychologists. The group of educators ( $n = 246$ ) included teachers, social pedagogues, educators, social workers and special needs teachers.

The reference sample consisted of 10,161 subjects aged between 10 and 80 years ( $M = 26.51$ ,  $SD = 10.83$ ) with a wide range of professions, of whom 68.5% were female and 31.5% male. The data derived from the optional completion of the questionnaire online and anonymously, as described below.

### MEASURES

We used the German version of the Interpersonal Reactivity Index (IRI; Davis, 1983; Kaźmierczak & Karasiwicz, 2021), the Saarbrücker Personality Questionnaire (SPF; Paulus, 2009). The SPF is a theoretically

shortened version of the IRI with 16 items (4 each for the factors EC, PT, FS and PD) and has good quality criteria (Cronbach's  $\alpha$  between .75 and .79). For more details see Paulus (2009, 2012, 2024a). The questionnaire was completed online and anonymously on the internet<sup>1</sup>, with the respondents receiving direct feedback on their scores for the four aspects of empathy. Information on gender, age and occupation was provided voluntarily and information on the time and date of completion was collected automatically, with the data being checked and filtered for consistency (multiple consecutive responses at the same time), missing or wrong values (no variance in the item answers) or willfully incorrect entries (e.g. occupation "doctor" + age = 10 years) before processing.

## RESULTS

Both samples (see Table 2) differed significantly from the reference group in their distribution ( $\chi^2(4) = 28.24, p < .001$  for the of medical professionals group;  $\chi^2(4) = 21.27, p < .001$  for the pedagogics group). The reason for this lies in the strong selection of the test subjects compared to the reference group, which comprises a significantly larger age and occupational spectrum. However, the two occupational

groups differed non-significantly from each other in their respective distribution ( $\chi^2(4) = 8.26, p = .082$ ). The reason for this is probably the excessive heterogeneity within the samples, which is why in the next step we attempted to analyze the distribution of the samples based on Anderson (2020) with a better differentiation of the occupational groups into "doctors" and "nursing staff" within the medical occupational groups and into "teachers" and "other pedagogical staff" within the pedagogical occupational groups (see Table 3).

There are only significant deviations in the distribution of types in the "staff" groups. In the nursing staff sample, profile B is clearly overrepresented and profile C is clearly underrepresented. Nursing staff therefore have a high level of EC and PT together with lower PD. PD is the dominant factor in profile C, which would be disruptive for nursing activities, which is why almost no "low neurotic empaths" are found in this group. The same applies to the group of pedagogical staff; here, too, the compassionate and understanding profile is overrepresented with a low PD (profile B), whereas the two profiles that show little empathy are less well represented. The results are thus largely in line with those of Anderson (2020), in which the nursing staff formed the majority in the "high functioning" or "high affective" profiles.

**Table 2**

*Distribution of the empathy types in the sample*

Empathy types	Medicine sample	Pedagogic sample
Not clearly categorizable	17.10%	20.00%
Situation-dependent altruists (A)	24.70%	24.90%
High-functioning empaths (B)	70.50%	66.90%
Low neurotic empaths (C)	1.50%	1.10%
Low empaths (D)	3.30%	7.20%

**Table 3**

*Frequency of the empathy types in the occupational groups*

Empathy types	Doctors ( <i>n</i> = 43)	Nursing staff ( <i>n</i> = 110)	Teachers ( <i>n</i> = 93)	Pedagogical staff ( <i>n</i> = 193)	Reference group
Not clearly categorizable	20.9%	14.5%	23.7%	18.1%	25.70%
Situation-dependent altruists (A)	18.6%	21.8%	17.5%	22.3%	23.10%
High-functioning empaths (B)	55.8%	60.0%	50.5%	54.4%	40.40%
Low neurotic empaths (C)	2.3%	0.9%	0.0%	1.6%	3.60%
Low empaths (D)	2.3%	2.7%	8.2%	3.6%	7.30%
$\chi^2(4)$	4.94	21.24***	3.79	19.53***	

Note. \*\*\* $p < .001$ .

**Table 4***Frequency of occupational groups within a type*

	Not clearly categorizable ( <i>n</i> = 83)	Situation- dependent altruists (A) ( <i>n</i> = 92)	High- functioning empaths (B) ( <i>n</i> = 244)	Low neurotic empaths (C) ( <i>n</i> = 5) <sup>a</sup>	Low empaths (D) ( <i>n</i> = 15) <sup>a</sup>
Doctors	10.8%	8.7%	9.8%	20.0%	5.3%
Nurses	19.3%	26.1%	27.0%	20.0%	15.8%
Teachers	27.7%	18.5%	20.1%	0.0%	42.1%
Pedagogical staff	42.2%	46.7%	43.0%	60.0%	36.8%

*Note.* <sup>a</sup>Sample is too small to be interpreted meaningfully.

In his study 2, Anderson (2020) took the opposite approach and examined how many representatives of an occupational group could be found in the respective empathy types. Table 4 shows that nurses and pedagogical staff occur in our sample most frequently in the empathic categories A and B. It should be noted that there are only very few people in profiles C and D, which is why the percentages in these groups are not necessarily meaningful.

## DISCUSSION

The aim of the study was to find out whether certain types of empathy are overrepresented in medical and educational professions.

Even though medical and educational professionals differ meaningfully in the empathy types within their group, they are more often high-functioning empaths (B) and less often unempathics (C and D) than would be expected in the reference group. One reason for the differences from the reference group could be that people who are empathetic choose these professions. Another reason could lie in the strong selection of the test subjects compared to the reference group, which comprises a significantly larger age and occupational spectrum.

Doctors most frequently have profile B, i.e. high values in EC and PT combined with low PD. The same profile can be found in the paper by Schrötter et al. (2024, p. 5). There, this profile is called “reflected, functional empathy”. Studies by Gleichgerrcht and Decety (2013), Zwack and Schweitzer (2013) and Enzmann (1996) showed that this combination of empathy “is associated with high compassion satisfaction, professional satisfaction and effectiveness and only rarely with problems in the interaction with patients. Overall, this empathy profile appears to meet the needs of both patients and physicians” (Schrötter et al., 2024, p. 5). It is also interesting to note the low occurrence of profile D within the group of doctors and the complete absence of teachers with profile C.

This is also similar to the findings of Anderson (2020, p. 64), who was only able to find a proportion of 1.7% of “low-empathy” within the group of so-called “first-responders”. However, this first-responder group was more heterogeneous in its professional profile than our doctors-only group.

Among the teachers only around 39% and among the doctors only around 19% of profiles A and B (high values in EC and PT) could be found. It is desirable that all doctors and teachers reach high values in EC and PT. In particular PT can be improved through training. A large number of effective empathy training courses already exist in the medical context (Paulus & Meinken, 2022). Empathy training has now also been developed for student teachers (Paulus & Meinken, 2022) which was able to achieve significant effects even after a short training period (1.5 days: partial  $\eta^2 = .29$ ; Meinken & Paulus, 2024) and for more than 11 weeks after the training (partial  $\eta^2 = .57$ ; Paulus, 2023).

If the two occupation-specific sub-samples are divided again into “staff” (nursing and therapeutic staff or social pedagogues and similar professions) and “decision-makers” (doctors or teachers), only in the respective staff groups are there significantly more empathic profile types (profile B) with a simultaneous under-representation of profiles with a high proportion of distress. It should also be noted that the proportion of men and women within the occupational groups differs significantly. While men and women are represented more or less equally among doctors, the proportion of women in the other three groups (nurses, teachers and pedagogical staff) is much higher than that of men, at well over 70% in each case ( $\chi^2(3) = 16.68, p < .001$ ). In previous studies, it was found that the proportion of men and women within the profiles was not equally distributed. Profiles B, C, and D occur more frequently among men, while profile A appears to be more typically female (Paulus, 2024b, p. 23), which is similar to Anderson (2020, p. 84f.) or Schrötter et al. (2024, Cluster 2).

At second glance, the four empathy profiles to which we refer are symmetrical with regard to the PD variable: Profiles A and B each have high values in the affective and cognitive factors EC and PT, and differ only in their respective high and low values in PD. Conversely, for profiles C and D, each has low affective and cognitive factors. Profiles with different characteristics between EC and PT were not significantly present as a so-called “type” when the typology was constructed (Paulus, 2024b). This can possibly be explained by the mean correlation between the two aspects of empathy, which varies somewhat depending on the author and sample (Fernández et al., 2011:  $r = .20$ ; Gilet et al., 2013:  $r = .48$ ; Ingoglia et al., 2016:  $r = .51$ ; Toffol et al., 2022:  $r = .47$ ).

The length of professional experience could also be relevant. Cognitive empathy already decreases significantly towards the end of professional training in the medical profession, and this could continue into professional life (Chauvel et al., 2023). The same applies to pedagogical professions, where there is a particular risk of burnout (and thus a decline in empathy) with increasing career duration (Mérida-López & Extremera, 2017; Wink et al., 2021). Unfortunately, there is no information in our data on the professional experience or duration of the occupational groups analyzed, which should be taken into account in subsequent studies. Empathy trainings in medical and pedagogical education have in common that they have no empirical sustainability tests (Paulus & Meinken, 2022). It would therefore be appropriate to also investigate longer-term successes with regard to the stability of empathy enhancement in order to make training more effective and at the same time better avoid these negative changes over time.

## LIMITATIONS

There are various limitations of our study that need to be pointed out. Firstly, the distinction between doctors/teachers vs. nursing staff/pedagogical staff leads to heterogeneous groups. The staff groups in particular consist of very different professional fields, which may not be able to be directly summarized. In addition, these groups are very different in their sample size, which leads to a higher variance within these two subgroups. In addition, our data did not allow us to differentiate within the occupational groups according to professional experience, which, according to Gleichgerrcht and Decety (2013), should only have a small effect with Cohen’s  $d = .06$  for EC.

As described above, the cognitive aspects of empathy are subject to developmental changes, which means that age differences in the groups can lead to differences in PT ability. In our sample, the doctors and teachers were on average 3 to 5 years older than the respective staff members ( $F(435, 3) = 3.54, p < .01$ ).

However, the influence of age on possible changes in the empathy profiles has not yet been considered and should be the subject of further studies.

In our sample, female respondents are clearly over-represented, which could make it somewhat difficult to generalize the results to the population as a whole. However, the unequal distribution that actually exists in everyday life in the professions (e.g. doctors more often male, nursing staff more often female) is again well represented. As women show somewhat higher values for affective empathy components in many studies, it would therefore be advisable to form a new sample with more precise representativeness aspects in further studies.

Last but not least, all data were collected in the form of a self-report questionnaire. This always raises the question of so-called social desirability or susceptibility to interference due to incorrect answers. This risk can be countered by collecting the data anonymously and by not addressing sensitive topics such as sexuality or aggression, which was the case in both of our studies. A review of the SPF using the Balanced Inventory of Desirable Responding (BIDR) according to Paulhus (1984) indicated that only the PD value may be under- rather than overestimated, as people not only admit their feelings of personal distress less to the outside world, but also deny them even more to themselves. The correlation between impression management and self-deceptive enhancement was not very high ( $r = .16, p < .001, n = 953$ ), which means that it is probably rather rare for both deceptive tendencies to be used simultaneously (Paulus, 2019).

Since other people are at the center of the work of doctors and teachers, it would be desirable for further research to go beyond the self-report questionnaire and collect external reports from patients or students on the satisfaction and perception of empathy of the professional.

## CONCLUSIONS

The typologization of empathy skills proved to be a good method of describing affective and cognitive aspects of empathy within a personality. The differences between the specific job profiles were also reflected in the occurrence of the empathy types, which can also be interpreted as a kind of external validation. In addition, the results emphasize the importance of empathy training, which is well-established in medical education but virtually non-existent in pedagogical education. We suggest the aspect of emotion regulation as a particularly valuable subject of training, as distress as an affective factor can hardly be changed but can only be regulated and thus allows personal suffering in critical situations to be better managed.

ENDNOTE

1 <https://www.cpaulus.de/SPF.html>

DISCLOSURES

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