

Context explains much of patient-perceived physician empathy in general practice

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Abstract

Background.

Patient-perceived physician empathy (PPPE) is associated with numerous positive outcomes for patients, quality of care and health expenditure. Research into the factors that explain PPPE is therefore crucial, but the focus has often been placed on physician-related predictors of PPPE. In general practice, however, many barriers to empathy may be contextual, such as lack of time, or patient-related, such as multimorbidity. Consequently, our aim was to explore the effect of these variables on PPPE in general practice.

Methods.

In a cross-sectional design, 50 randomly recruited physicians were compelled to include 20 consecutive adult patients with one or more chronic disease(s). The characteristics of the doctors and their work environment were collected (e.g. gender, age, peer-group participation or lack of participation, urban or rural area, working alone or with other colleagues, caseload, etc.). Physicians filled in patients' diseases, and patients filled in validated questionnaires on their health, emotional skills (i.e their ability to identify, express and regulate emotions) and their perception of physician empathy (CARE scale). Multilevel linear regressions were performed using SAS.

Results.

The median PPPE was 45 ($n = 762$), with higher rates in patients who had had seven or more consultations with the physicians in the last 12 months and lower in patients with genitourinary and upper gastrointestinal diseases. In consultations ≤ 20 minutes, the length of consultation was associated with higher PPPE in interaction with patients' emotional skills: the positive effect of longer consultations on PPPE was stronger in patients with low emotional skills, whereas patients with high emotional skills were able to perceive high empathy even in very short consultations of 5–10 minutes. Among the 11 physician-related candidate variables, only physician age had a significant effect.

Conclusions.

Patient-related and, especially, contextual variables explained PPPE much more than physician-related variables. Consultations with infrequently seen patients and patients with low emotional skills should ideally last at least 20 minutes to allow the empathic process to unfold. Patients with genitourinary and upper-gastrointestinal diseases should be given special consideration, as they may encounter intimate issues or specific needs requiring more attention.

INTRODUCTION

Ensuring that care remains humanised is currently a priority, particularly for individuals who face chronic and alienating health conditions [1], and physician empathy is a major element of humanised care.

According to the seminal definition of clinical empathy [2], physician empathy refers to how physicians: (1) establish a good rapport with patients by putting them at ease, actively listening to them and giving them their full attention; (2) demonstrate a genuine interest in and full understanding of the patients, as well as care and compassion by connecting on a human level; and (3) are positive, explain things clearly, help the patient to take control and make a plan of action with them.

Physician empathy has been associated with better patient outcomes in various settings [3], including cancer care [4] and general practice [5, 6]. Moreover, physician empathy is correlated with improved drug prescription practices [7, 8] and reduced health expenditures [9]. Thus, empathy is a necessary and highly powerful skill. Yet, it is challenging for GPs to build and maintain empathy in everyday clinical practice [10]. Indeed, barriers to empathy, such as difficult patients and complex clinical situations, are stronger for GPs compared to other specialisations [11], a situation that is due, among other things, to multimorbidity, whose prevalence is 39% in Europe [12].

For all these reasons, the present study aims to explore the predictors of physician empathy as perceived by patients with chronic diseases in general practice, taking into account patient *perception* of physician empathy (PPPE). Indeed, the positive outcomes connected to physician empathy are only found when this empathy is perceived by patients and not assessed by researchers or self-reported by the physicians themselves [4, 13]. In fact, PPPE is not correlated with physician empathy as coded by researchers [14] or reported by physicians themselves [15, 16]. This is why patient perceptions are of the utmost interest.

When it comes to the predictors of PPPE, a recent systematic review has revealed that, in most studies, the candidate variables were mostly physician-related variables, such as physician gender, personality and burnout [17]. Although physician variables are important, it is important to bear in mind that PPPE is also dependent on the patients themselves [18] and on the context of doctor-patient interactions [19], two elements that are overlooked in research on PPPE.

Among the contextual elements that potentially explain PPPE, the frequency and length of doctor-patient encounters seemed particularly relevant. Indeed, although a few empathetic statements by physicians can help them be perceived as empathetic by patients [20] and improve patient outcomes [21], patients and physicians both agree that empathy requires time [22–24]. We see the same unresolved problem here as in the case of the frequency of doctor-patient encounters: more frequent encounters improve their knowledge of each other [25], thus potentially enhancing PPPE, but this frequency may also reflect complex medical situations or difficult patients facing recurrent issues that could deplete the physician's empathic resources [26]. We were also interested in exploring the type of pathology for which the patient sought a consultation.

Among patient-related variables, patient emotional skills (ES) seem particularly relevant. ES refer to the ability to address and process emotional information, encompassing the identification, understanding, expression and regulation of emotions. In the absence of the ability to identify and understand emotions, patients may fail to recognise an empathetic statement by a physician as such or misunderstand the caring intention behind it [18]. Similarly, if patients conceal their emotions, it becomes difficult for physicians to address them, and thus to be perceived as empathetic [27]. The expression of emotions is therefore important. Finally, patients who struggle to regulate their emotions may become blinded to the empathic demonstrations of physician, due to their overwhelming negative emotions. Poor mental health could thus bias PPPE, as could poor physical health, which causes higher stress in patients [28].

In sum, our aim was to explore the variables that potentially explain PPPE in patients with chronic disease(s) in family medicine, with a primary interest in patient (e.g. ES, health) and contextual variables (e.g. frequency and length of consultations, type of pathology) as candidate variables, while controlling for the usual physician variables, such as age, gender and years of experience. Since patient ES has been found to interact with contextual variables, such as the type of consultations in cancer care [29], interactions between ES and the frequency and lengths of consultation will also be probed for.

METHOD

Study design and procedure

We performed a cross-sectional study using patient- and physician-reported questionnaires. Physicians meeting the inclusion criteria (see below) were selected from a listing provided by the Clinical Research Institute of Lille. The selection was conducted at random, except with regard to the internship supervisor criterion. As we wanted to have enough supervisor GPs to be able to properly test the link between “being a supervisor” and PPPE, we ensured that half of the sample consisted of supervisors. Since the patients of supervisor GPs are similar to the patients of non-supervisor GPs [30], this choice should not have a negative impact on the representativeness of our patient sample. Selected GPs were contacted by phone by research investigators (i.e. four residents in GP working on the project for their PhD dissertation in medicine). The research investigators presented the study by phone to GPs in a standardised manner that was carefully crafted by the whole research team. Once they agreed to receive further information on the study, the GPs were visited at their cabinet by one of the research investigators, who presented the study in more detail, once again in a standardised manner, and answered their questions. After they had given their agreement, the GPs were invited to sign an informed consent form and to fill in a short, one-page questionnaire about themselves (age, years of experience, internship supervisor or not) and their practice (e.g. office in a rural or urban area).

Patients meeting the inclusion criteria (see below) were invited to participate in the study by the GP at the end of a consultation. The GPs were provided with a guide that enabled them to present the study to eligible patients in a standardised manner. With the patient’s agreement, the doctors handed the patient a questionnaire to fill out, on which they had previously indicated the patient’s chronic conditions, the

number of long-term treatments the patient was taking and the time since the diagnosis of the oldest pathology. After the consultation, the patient was required to complete the questionnaire in the waiting room and deposit it in a sealed urn designated for this purpose. To prevent selection bias by the physicians, patients meeting the inclusion criteria had to be *consecutively* included within three consecutive days of consultations. The sealed urns were collected by the investigators at the end of the study.

Inclusion criteria

The physicians had to be GPs with a private practice in northern France (operating in a private practice is standard for GPs in France), while the patients had to be adults who were covered by French social insurance and who had declared the participating doctor to be their primary care physician. They were also required to have been affected by a chronic disease for at least six months that, according to the GP, made it necessary for them to follow a regular treatment regimen.

Measures

Patient-perception of physician empathy (PPPE) was measured using the Consultation And Relational Empathy (CARE) scale, a 10-item, 5-point Likert scale that provides an overall score, with a higher score indicating higher empathy [2]. Items on the scale deal with the patient's perception of listening, respect and clear explanations from the physician, as well as of whether the physician fully understands their concerns and shows care and compassion, e.g. "The doctor fully understood my concerns." Cronbach's alpha was 0.95 in our sample.

Patient emotional skills (ES) were measured using five items that we selected from the Short Profile of Emotional Competence scale [31]. We did not use the full scale because even this short version still contains too many items (i.e. 20 items), some of which are considered problematic (e.g. "If I wanted, I could easily make someone uneasy). We selected items dealing with the patient's competence to identify (one item), express (one item), understand (one item) and regulate (two items) their emotions, e.g. "When I am sad, I find it easy to cheer myself up" (regulation). Cronbach's alpha (α) was 0.51 in our sample. The higher the score, the higher the ES.

Patient health was self-reported by patients using the Duke Health Profile [32], which provides scores for the following dimensions: physical ($\alpha = 0.74$), social ($\alpha = 0.45$), mental ($\alpha = 0.72$) and general health ($\alpha = 0.79$), self-esteem ($\alpha = 0.56$), anxiety ($\alpha = 0.63$), depression ($\alpha = 0.72$), and pain, disability and perceived health, each assessed with a single item. Duke scores theoretically range from 0 to 100: for health measures, high scores indicate good health whereas for dysfunction measures (anxiety, depression, pain and disability), high scores indicate greater dysfunction.

Sample size estimation

Our study used a two-level hierarchical structure, with patients nested within clusters of doctors. In this design, 50 physicians, each with 20 patients, would make it possible to test the main effects and possible interactions [33]. These were therefore our target numbers.

Statistical analyses

Analyses were conducted using SAS software (SAS v9.4, SAS Institute Inc., Cary, NC, USA). Continuous variables are expressed as mean \pm standard deviation or median [25th – 75th percentile], as appropriate. Categorical variables are presented as absolute numbers and percentages. First, a multilevel linear regression model was built with patient variables as candidate covariates using fixed effects, GP as a random effect, and PPPE as outcome. Only significant variables ($p < .05$) were retained. Then, this first model was adjusted for all physician and contextual variables. Here again, only significant variables were retained. The linearity assumption for continuous covariates was tested by comparing a model with the continuous covariate to a model adding a quadratic component with an F-test for nested models. In the event of a departure from the assumption, a piecewise log-linear regression model was considered. Regression-underlying assumptions were visually inspected using residual plots. A two-tailed type I error rate of 0.05 was considered for statistical significance. The results feature only significant variables associated with the outcome. Interactions between patient ES and the frequency and lengths of consultations were also probed for.

RESULTS

Description of the samples

The recruitment of physicians and patients took place from February 2019 to January 2020. Of the 175 physicians approached, 50 accepted to participate (acceptance rate of 29%) and included 788 patients. Of these patients, 762 completed the main questionnaire on empathy. The number of patients who refused to participate is unknown, as even though physicians were supposed to report the number of refusals, they did not do so. Participating physicians were mostly experienced, middle-aged, male doctors based in urban areas, who worked with other GPs or health professionals (Table 1). Half of them were supervisors, a distribution that was deliberately selected for, and one-quarter of them had an interest in peer groups. The patients, who were approximately half male and female, were mostly retired and the majority of them had a low level of education (80% \leq high school diploma). Half of the sample had more than two chronic diseases, mainly hypertension and endocrine/metabolic diseases, 39% had consulted their GP seven or more times in the last 12 months, while 19% declared themselves to be basically unhealthy. Finally, PPPE was high (score = 45 on a scale from 10 to 50), and the median consultation duration was estimated at 20 minutes (Table 2).

Table 1
Description of the sample of physicians

Physician characteristics (N = 50)	N (%) or median [Q1; Q3] or mean \pm 1 standard deviation	Missing data (N)
Gender: female	11 (22%)	
Age (years)	56 [38 ; 62]	
Years since end of medical studies	25 [10 ; 36]	1
Years in private practice	20 [7 ; 34]	
Internship supervisor†	25 (50%)	
Participation in peer groups, such as Balint groups	12 (24%)	
Private practice in medical desert	15 (30%)	
Private practice in an urban area	38 (79%)	2
Professional activity	42 (84%)	
Private practice only	8 (16%)	
Private practice and hospital		
Type of private practice	17 (34%)	
Alone	25 (50%)	
Several physicians	7 (14%)	
Multidisciplinary primary health-care team	1 (2%)	
Miscellaneous		
Registered consultations per year	5772 \pm 2169	6
Mean general consultation time, according to physicians (minutes)	15 [15 ; 20]	1

†Half of the GPs are internship supervisors as selection on the criteria was wanted as such (see method for further explanation)

Table 2
Description of patient sample, N = 762 with completed measure of empathy

	Number (%) or median [Q1; Q3] or mean \pm 1 standard deviation	Missing value N
Age (years)	62 \pm 14	7
Gender	349 (47%)	2
Male	400 (53%)	
Female	1 (< 1%)	
Other		
Patient lives alone	169 (23%)	12
Education	68 (9%)	8
No education	390 (52%)	
Less than high school diploma	134 (18%)	
High school diploma	41 (6%)	
Bachelor's degree	39 (5%)	
Master's degree	13 (2%)	
Doctoral degree	59 (8%)	
Miscellaneous		
Professional situation	204 (27%)	10
Employed	8 (1%)	
Student	100 (13%)	
Unemployed	430 (58%)	
Retired		
Regular alcohol consumption	222 (30%)	
Regular smoker	111 (15%)	
Regular cannabis consumption	6 (< 1%)	

	Number (%) or median [Q1; Q3] or mean \pm 1 standard deviation	Missing value N
Number of consultations with the GP during the last 12 months	15 (2%)	8
1	91 (12%)	
2-3	349 (47%)	
4-6	198 (27%)	
7-12	91 (12%)	
> 12		
Emotional skills (theoretical range from 5 to 25)	18 \pm 3	18
Perceived health: Duke scores ^a		
Physical health	51 \pm 25	16
Mental health	65 \pm 24	30
Social health	68 \pm 20	19
General health	61 \pm 18	52
Perceived health: I am basically a healthy person	140 (19%)	15
No	382 (52%)	
Somewhat	215 (29%)	
Yes		
Self-esteem	72 \pm 21	28
Anxiety	38 \pm 21	27
Depression	39 \pm 25	26
Pain: trouble with hurting or aching	115 (15%)	5
None	416 (56%)	
Some	216 (29%)	
A lot		

	Number (%) or median [Q1; Q3] or mean \pm 1 standard deviation	Missing value N
Disability during the past week (stay at home, at a nursing home or in hospital)	659 (88%)	5
None	61 (8%)	
1–4 days	27 (4%)	
5–7 days		
Patient-perceived physician empathy (theoretical range from 10 to 50)	45 [39 ; 50]	0
Length of the last consultation as reported by the patient (minutes)	20 [15 ; 20]	14
Number of chronic diseases ^b	2 [1 ; 3]	63
Type of chronic diseases ^b :	198 (26%)	
1. Cardiac (heart only)	381 (51%)	
2. High blood pressure	69 (9%)	
3. Vasculo-haematopoietic	112 (15%)	
4. Respiratory system	43 (6%)	
5. Ophthalmology and head and neck	50 (7%)	
6. Upper gastrointestinal	60 (8%)	
7. Lower gastrointestinal	25 (3%)	
8. Liver	31 (4%)	
9. Kidney	55 (7%)	
10. Genitourinary	148 (20%)	
11. Musculoskeletal integuments	63 (8%)	
12. Central and peripheral nervous system	316 (42%)	
13. Endocrine and Metabolic	104 (14%)	
14. Psychiatric/behavioural disorders		
Years since diagnosis of the earliest chronic disease ^b	12 [7 ; 20]	27
Number of long-term treatments ^b	4 [2 ; 6]	12
Consultations directly concerned with one of the patient's chronic diseases ^b	612 (82%)	7

^a Duke scores theoretically range from 0 to 100: for health measures, high scores indicate good health whereas for dysfunction measures (anxiety, depression, pain and disability), high scores indicate greater dysfunction. ^bInformation reported by the physician.

Variables explaining PPPE

Controlling for physician variables, independent patient and contextual variables associated with PPPE are described in Table 3. PPPE increased with the patient mental health score (although the effect was small) and decreased with patient self-esteem, but only for patients with low self-esteem (i.e. ≤ 40 points).

PPPE increased with the frequency of GP visits, that is when the number of visits was greater than six per year compared to a single visit per year. Among all types of chronic diseases, only upper gastrointestinal tract and genitourinary system diseases were associated with less perceived empathy. For chronic diseases diagnosed within the last 20 years, PPPE decreased slightly for earlier diagnoses. Finally, we found a significant interaction between the length of consultations and patient ES, but only for a length of consultations ≤ 20 minutes: PPPE was higher for patients with high ES when the consultation was very short (5–10 minutes), but this effect of ES on PPPE decreases with longer consultations (Fig. 1). In other words, in very short consultations, patient ES made a difference in PPPE, whereas in longer consultations, ES no longer had any influence.

Table 3
linear regression explaining Patient Perception of Physician Empathy (PPPE)

Variables	Unstandardised coefficients	95% Confidence Interval	<i>p</i> value
Patient variables			
Mental health (for 10 points of Duke score†)	0.3	[0.1 ; 0.5]	0.008
Self-esteem (for 10 points of Duke score†)	-1.6	[-2.7 ; -0.4]	0.007
Only for a score ≤ 40 points			
Patient emotional skills (for 5 points‡)	7.6	[3.2 ; 12.0]	0.0008
Contextual variables			
Number of consultations with the GP during the last 12 months	reference	[-1.9 ; 5.5]	0.0004
1	1.8	[-0.9 ; 6.1]	
2-3	2.6	[0.5 ; 7.7]	
4-6	4.1	[1.5 ; 9.0]	
7-12	5.3		
> 12			
Type of chronic disease: upper gastrointestinal	-2.4	[-4.4 ; -0.4]	0.02
Type of chronic disease: genitourinary	-3.7	[-5.6 ; -1.8]	0.0002
Time since the diagnosis of the earliest disease (for 10 years)	-0.9	[-1.7 ; -0.2]	0.02
For a period ≤ 20 years			
Length of the last consultation			
When length ≤ 20 minutes			
Length of the last consultation (for 5 minutes)	8.0	[3.4 ; 12.6]	0.0007
Interaction: patient emotional skills (for 5 point) * length of the last consultation (for 5 minutes)	-1.7	[-2.9 ; -0.4]	0.009
When length > 20 minutes			
Length of the last consultation (for 5 minutes)	0.7	[0.3 ; 1.1]	0.002
Notes. †Duke scores theoretically range from 0 to 100 with high scores = high mental health and self-esteem. ‡Patient emotional skills theoretically range from 5 to 25 with high scores = better emotional skills. Model adjusted for physician age.			

DISCUSSION

This study is one of the rare studies that focuses on patient and contextual variables, rather than solely on physicians, in order to explain PPPE in family medicine dealing with chronic diseases. The first striking result is that when physician variables were placed in competition with patient and contextual variables in the same model, PPPE was not explained by physician variables (except for physician age, one of the 11 physician variables tested, but with a small effect size). Even reflective activities by the physician, such as Balint-group attendance and being a clinical supervisor, were not significant. This finding may help take some of the spotlight off the GPs, who may be unfairly considered as the sole individuals responsible for PPPE. Consequently, empathy training for physicians would gain from being embedded more fully in specific contexts, not only bad-news contexts, which have been extensively studied, but also such as short consultations, which have received almost no attention despite their high frequency. Indeed, the average length of GP consultations is 15 minutes in continental Europe [34] and 10.9 minutes in England [35]. Congruent with previous meta-analytic data [36], we found that longer consultations led to increased PPPE, especially for a time < 20 minutes. It is difficult for physicians to be perceived as empathic within the space of 10 minutes, which underlines the dynamic and interpersonal process at stake in empathy [19, 37]. As Main (2022) and Murphy et al. (2022) have convincingly argued, empathy is an iterative process of genuine curiosity towards patients that involves paying attention to them, drawing inferences, seeking feedback from the patient to check the inferences drawn, trying to consider what might help and so on. The back-and-forth communication requires more than just a few minutes, especially in a setting where medical issues are front and centre, leaving limited cognitive resources available for this empathic process.

Nevertheless, in 10-minute consultations, patients with high ES were able to compensate for the lack of time and still perceive high physician empathy. High ES helps patients to communicate their needs efficiently, as well as to understand and tolerate frustration. Therefore, we assume that, despite limited time, patients with high ES were able to get the help they needed. For this reason, physicians were still perceived as empathetic, as, with the help of cooperative and “efficient” patients, they were able to respond to their needs despite time constraints. This explanation aligns with the finding that cooperative/thankful patients are more susceptible to perceiving health-care professionals as empathetic (Pavlova et al., 2022). By contrast, in five- to ten-minute consultations, patients with low ES did not find their physician empathetic. They probably need more support, which requires more time. Moreover, the greatest effect size in our results was found for the number of consultations in the last 12 months. The mutual understanding that builds up over the course of consultations enables greater PPPE. Our findings confirm similar results that have been found in GP, revealing the benefits of higher frequencies of visits for both therapeutic alliance [38] and patients’ ability to cope with their health problems [39].

Taken together, our results point to three recommendations.

First, the first consultation(s) with a new patient whose ES is unknown, as well as consultations with infrequently seen patients, should ideally last at least 20 minutes, to allow the empathic process to

unfold, leading to PPPE and the numerous positive outcomes of empathy. Twenty minutes may be considered costly from an economic perspective, but cost-effectiveness analyses show that reduced health-care costs are made possible by patient-centered care [40, 41], of which empathy is a core element. Furthermore, given an eight-hour working day, twenty-minute consultations allow 24 consultations a day, which is the threshold of general practice deemed sustainable [34].

Second, another recommendation is that more time be devoted to patients with low ES. These patients can be identified by physicians using several different criteria. They have more somatic symptom disorders and related conditions [42], more health consumption, such as reimbursed and non-reimbursed drug consumption or consultations with GP and psychiatrists [43], increased rates of alcohol disorders, anxiety, depression, perceived stress, social phobia, emotional, mental and physical work fatigue, and suicidal ideation [44]. These symptoms/signs or medical antecedents could help GPs not only to prioritise longer consultations with such patients, but also to refer them to mental health specialists, as these fragile patients need tailored help. In fact, results from cancer care suggest that even the most empathetic GPs would probably not be able to alleviate these patients' suffering [29].

Third, chronic illnesses that can have an impact on patients' intimacy may require more attention. Time was an important component for understanding PPPE, but the content and unfolding of doctor-patient interactions should also be considered. When doctors talk much more than patients in consultations, hindering the unfolding for the empathic process, patients show a poor prognosis understanding in cancer care [45]. In clinical domains dealing with intimate areas, such as prostate cancer, consultation duration does not always coincide with a prolonged conversation on psychosocial relevant issues [46]. This may be the reason why we found that patients with genitourinary issues report lower physician empathy scores. Intimate concerns related to incontinence, prostate and reproductive organs may be difficult for patients to disclose and may be overlooked by physicians, leading to less perceived empathy. In fact, if the patients themselves do not spontaneously raise the topic of sexual health, most physicians fail to address it with chronic patients in GP [47]. Furthermore, patients with genitourinary issues may also have to get undressed for clinical examination, which makes them vulnerable, thus requiring greater physician empathy and consideration, which may also explain why PPPE was lower in those patients.

Limitations

The mean PPPE score of 45 in our sample is slightly higher than those for GPs in other countries which are around 42–43 [36]. Many hypotheses are possible. Although the GPs were clearly invited to enroll eligible patients consecutively over three days, most of them took more time to recruit patients. They may have proposed the study to their most “willing” patients or when they had enough time. It is also possible that patients who were dissatisfied with their GP did not dare to participate and were thus underrepresented. Furthermore, our patient sample was mostly poorly educated (only 13% have a university degree), and low education is known to be associated with higher PPPE [48], probably due to reduced expectations from GPs. Finally, it is possible that physicians, knowing that they would be assessed on their empathy, made extra efforts to appear empathetic, even without being aware of it. Two

specificities of our physician sample should also be kept in mind. Women were underrepresented, with only 22% of the doctors being female, whereas it is now estimated that 49% of GPs in France are women [49]. The GPs were also mostly experienced ones. Finally, the five items used to assess ES yielded a poor Cronbach's alpha so that the results should be replicated using a short validated version of ES such as the 12-item scale of ES published after our patient recruitment in 2020 [50].

CONCLUSIONS

Physician empathy cannot be reduced to physicians' characteristics and behaviours. Patient-related and contextual variables were of great interest in understanding PPPE, which is extremely important, as associated with numerous positive outcomes. Consultations with patients who are rarely seen, patients with low emotional skills and patients with genitourinary and upper gastrointestinal diseases are likely to result in low PPPE and should thus be prioritised, ideally so that they last 20 minutes. Indeed, except for patients with strong emotional skills, physicians cannot be perceived as empathetic by their patients with chronic diseases when they only have 5–10 minutes to spend with them. These findings are important as they can help GPs to determine which patients they need to spend more time with, while simultaneously providing a further argument that more time resources are necessary. Even the most empathetic GP runs the risk of overlooking important patient needs and concerns if there is insufficient time for the empathic process to unfold.

Abbreviations

PPPE

patient-perceived physician empathy

ES

emotional skills

GP

general practitioner

Declarations

Ethics approval and consent to participate

The study has been approved by the Ethical Committee of the University of Lille on the 28th of January 2019 (reference number 2018-317-S66). Informed consent was obtained from all the participants.

Consent for publication

Not applicable

Availability of data and materials

The dataset used and analysed during the current study is available from the corresponding author on reasonable request.

Competing interests

No competing interests

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Authors' contributions

AD, CP and SL designed and supervised the entire study, and TP, AD, AS, EL and MAR contributed significantly to design the study. TP, AD, AS, EL and MAR recruited the physicians, performed the data collection and managed the study on site. CP analysed the data, prepared the figures and wrote the tables, the statistical section and the results section. SL wrote the article with substantial support from NG, who also assisted with the literature search. All authors approved the submitted version.

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Figures

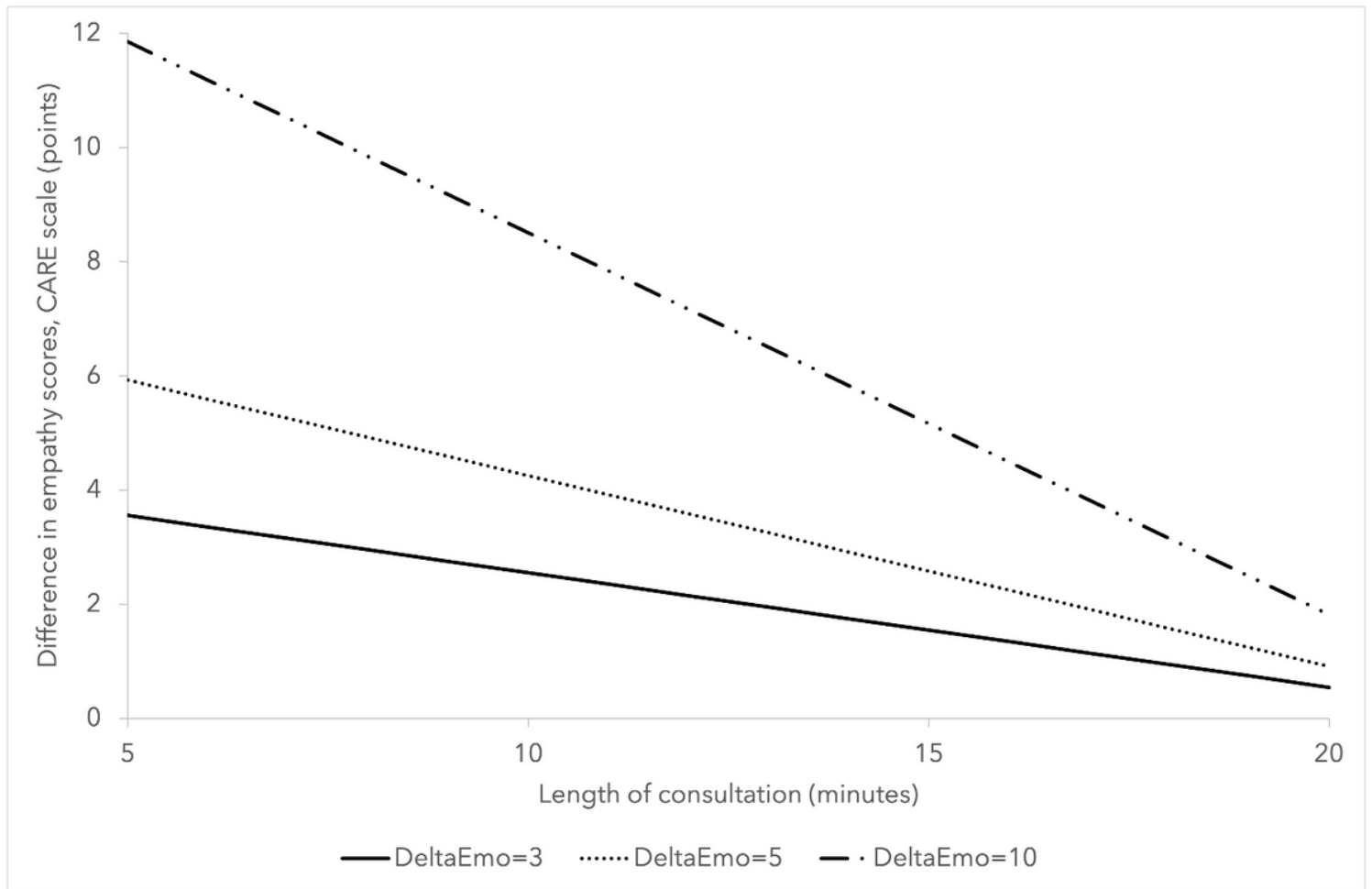


Figure 1

Interaction between the length of consultation and patient emotional skills on patient-perceived physician empathy

Note. DeltaEmo = difference of patient emotional skills