



Physician empathy in Korean clinical contexts: developing a conceptual framework and exploring influencing factors

Su Hyun Kim¹ and Young-Mee Lee²

¹*Pukyong National University Industry-University Cooperation Foundation, Busan and* ²*Department of Medical Education, Korea University College of Medicine, Seoul, Korea*

Purpose: Despite its well-known clinical importance, physician empathy (PE) has been variably defined and its concepts among cultures are yet to be studied. This study aimed to develop a conceptual framework of PE and explore influencing factors on physicians' empathetic behavior in the Korean clinical context.

Methods: Forty-two faculty members and 67 residents participated in the two-round Delphi survey to arrive at a consensus regarding the conceptual framework of PE in 2019. To explore individual and external factors affecting physicians' empathetic behavior, a Likert scale questionnaire based on an initial free-text response was administered to the same participants.

Results: The conceptual framework of PE among Korean doctors consisted of basic communication skills and attitudes, cognitively understanding of patients' thoughts and emotions, and communicating the doctors' understandings to patients. Individual attributes and system- and patient-factors were revealed as influencing factors for PE in real practice. The former included communication ability, self-awareness and management, humanism, clinical competence, and good personality traits. Excessive workload, time constraints, aggressive attitudes, and negative preconceptions towards doctors were perceived as inhibiting or hindering empathy in patient care.

Conclusion: PE in the Korean clinical context comprised behavioral and cognitive components. Individual attributes, as well as external factors including system- and patient-factors were identified to affect PE in clinical settings. Further studies are needed to enhance the conceptual clarity of PE and identify how to promote doctors' empathetic practice even in less favorable healthcare environments.

Key Words: Empathy, Physicians, Conceptual framework, Influencing factors

Introduction

Physician empathy (PE) has been well-known to be associated with better clinical outcomes, more accurate diagnosis and treatment plans through better doctor-patient relationships, sharing of more diagnostic information with patients, and greater patient adherence and

satisfaction [1–4]. Hence, PE is considered not only a core element of medical practice but also part of the essential curriculum for medical students and trainees, and there have been various studies conducted about empathy education and training at both the undergraduate and postgraduate training levels [5–9].

In spite of its importance in medical practice and education, PE is still variably defined without a clear

Received: November 8, 2022 • Revised: January 4, 2023 • Accepted: January 26, 2023
Corresponding Author: Young-Mee Lee (<https://orcid.org/0000-0002-4685-9465>)
Department of Medical Education, Korea University College of Medicine, 73 Goryeodae-ro, Seongbuk-gu, Seoul 02841, Korea
Tel: +82.2.2286.1098 Fax: +82.2.928.1647 email: ymleehj@korea.ac.kr

Korean J Med Educ 2023 Mar; 35(1): 9–20
<https://doi.org/10.3946/kjme.2023.245>
eISSN: 2005-7288

© The Korean Society of Medical Education. All rights reserved. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

consensus [10,11]. Empathy has often been perceived as multi-dimensional concepts such as emotional, cognitive, behavioral, and moral aspects [12–14]. Earlier studies focused on the emotional aspects of empathy, including sharing feelings and emotions among people [15–17]. Mercer and Reynolds [18] defined empathy as a complex, multi-dimensional concept, but they emphasized more on the actionable component of PE through expression. Hojat et al. [5] defined empathy in the context of patient care as a predominantly cognitive attribute that involves an understanding of the experiences, concerns, and perspectives of the patient, combined with a capability to communicate this understanding [19].

The conceptual framework of PE can vary according to cultural backgrounds [5,7,20–23]. For example, a Japanese study of medical students and residents emphasized that the moral component seems to be a major factor in developing empathy [23]. The other study showed that culture was one of the significant influencing factors on the students' empathy levels [21]. Notwithstanding, previous Korean studies on PE have applied empathy measurement tools developed from the other countries without a conceptual framework of PE reflected Korean cultural differences [24,25]. Research without a proper definition or a conceptual framework of PE reflecting unique cultural contexts may constrain the interpretation and implications of study findings. Therefore, defining PE in reference to the local culture in real healthcare settings is critical not only to conduct robust research but also to provide better empathy education.

Despite numerous studies on PE, what and how individual and system-related factors including working conditions may affect empathetic practice is under-investigated [26]. Thus, identifying influential factors or barriers to PE in real clinical settings is also necessary to provide proper education through creating a better environment to perform empathetic patient care. To the

best of our knowledge, studies for defining a conceptual framework of PE and influencing factors on it have not been carried out in Korea.

The authors of this study aimed (1) to develop a conceptual framework of PE by gaining a richer understanding of Korean doctors' perceptions of empathy; (2) to explore individual and external factors affecting physicians' empathetic behavior in real clinical settings.

Methods

1. Study design and process

A Delphi method was applied to arrive at an expert consensus regarding the conceptual framework of PE [27]. Two rounds of Delphi were administered via online surveys, which included emails and Google surveys. Along with the Delphi surveys, an open-ended questionnaire and a Likert scale were also administered to explore the individual and external factors affecting physicians' empathetic behavior in clinical fields.

To develop a Delphi survey questionnaire, a workshop with six clinicians and three medical education specialists was held. Six clinicians were one oncologist, two family physicians, two surgeons and one preventive medicine resident from a university-based tertiary hospital. They participated in a face-to-face, open-ended brainstorming session to explore the essential components and attributes of PE in patient care. The workshop contents were transcribed and analyzed using open and axial coding [28]. A list of 15 statements on the concept and key components of PE was generated using the categories produced by the axial coding, along with a comparison of the literature reviews on PE.

The Delphi Round 1 was conducted from May 22, 2019 to May 28, 2019, by way of a questionnaire using the 15

statements on PE mentioned above. The Delphi panelists were asked to rate the extent to which they agreed with each statement using a 5-point Likert scale (1: not relevant at all-5: highly relevant), together with narrative comments on each item. During the analysis of Round 1, statements that earned a mean rating score of ≥ 4.0 [27] on the item and a content validity ratio (CVR) of < 0.29 [28] were selected for the Round 2 questionnaire. During this process, three statements that did not meet these criteria were eliminated. These were: “imagining the patient’s emotions and feelings as if I were them,” “controlling my actions and judgments to ensure that the patient’s interests come first,” and “treating the patients comfortably and friendly.” In the case of three items with a borderline score of 4.0, the research team iteratively discussed the same while reviewing the narrative responses, and two statements were ultimately included (items 9 & 10 in Appendix 1). The remaining item, “responding to the patient’s verbal/non-verbal cues (item 8 in Appendix 1),” was merged with a similar question- “picking up verbal/non-verbal cues from the patient” (item 3 in Appendix 1). This led to the creation of a new statement: “picking up verbal/non-verbal cues from the patient responding to them,” in the following questionnaire

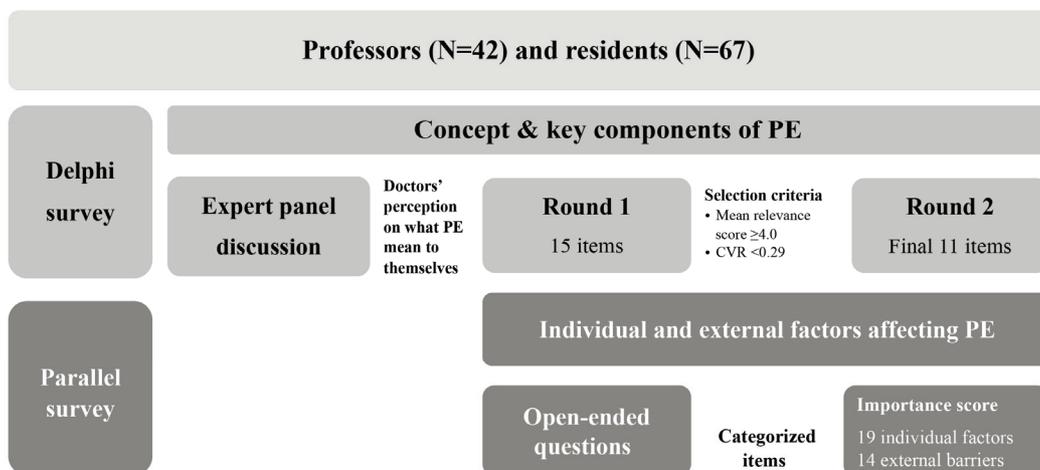
round (item 16 in Appendix 1). As a result, 11 items for the survey on PE were developed for the Delphi Round 2 and distributed to the participants from May 29, 2019 to June 20, 2019 (Fig. 1).

Along with the Delphi Round 1, the respondents also participated in a freewriting assignment on their opinions about the factors that affect PE in real clinical settings. A qualitative thematic analysis of the responses was conducted, which categorized them into individual factors, with 19 items, and external factors, with 14 items. In the following survey, a questionnaire investigating doctors’ perceptions of the importance of the factors generated on a 5-point Likert scale (1 [not important at all]-5 [very important]) was distributed.

2. Participants of the Delphi rounds

The convenient sampling method was used to recruit the panel for the Delphi survey of faculty members from 40 medical schools. Those who worked for medical education departments and have a clinical background in their university hospitals were included. Recruitment to the resident panel was conducted with the cooperation of the Korean Intern Residents Association (KIRA). The corresponding author contacted the president of KIRA and

Fig. 1. Flow Diagram of This Study



PE: Physician empathy, CVR: Content validity ratio.

requested to recruit the senior residents, including third- and fourth-year residents of the KIRA. The rationale for selecting the senior residents was to obtain opinions from those who had substantial clinical experience in their own practice. The surveys were performed online; the faculty members responded to an attached survey questionnaire form via e-mail, and the residents responded to a Google survey link which was texted by the KIRA. The faculty members and residents who responded to the simultaneously administered open-ended questions and the subsequent survey on influencing factors and barriers in PE were the same groups as the Delphi participants.

3. Statistical analysis

Baseline characteristics and the scores of item relevance on a 5-point Likert scale were analyzed using descriptive statistics such as number (%) or mean and standard deviation. For the Delphi survey, The CVR was calculated using the following equation: $CVR = (n_e - N/2) / (N/2)$, where n_e is the number of panel members that indicated the statement as “essential” and; N is the total number of panel members. The minimum CVR that indicates agreement between the panels is 0.29 when the number of Delphi panelists is 40 or over [28]. In this study, the statements satisfied with both a mean rating score of ≥ 4.0 and a CVR of < 0.29 were selected [27–29]. Student t-test was conducted to compare the difference between faculty members’ and residents’ opinions on personal and external factors affecting physicians’ empathetic behavior. All statistical analyses were performed using IBM SPSS ver. 27.0 (IBM Corp., Armonk, USA), and a p-value of < 0.05 was considered statistically significant.

4. Ethics statement

All participants voluntarily agreed to participate in this study, and informed consent of each was obtained either by email or through an online form at the beginning of

the survey. This study was approved by the Institutional Review Board of Korea University College of Medicine (KUIRB-2019-0341-01).

Results

1. Baseline characteristics of the participants

Forty-two faculty members from 16 medical schools and 67 residents completed the two rounds of Delphi and parallel surveys. The faculty respondents’ age ranged from 33 to 60 years, and their experience in clinical practice was 8 to 35 years. Conversely, the residents’ age ranged from 28 to 44 years, with 4 or 5 years of medical practice. The specialties of the participants were diverse. The faculty’s self-assessed empathy level in clinical settings tended to be slightly higher than that of a general setting (3.8 versus 4.0), but there was no difference in residents’ response to empathy levels between clinical and general settings (3.8 in both) (Table 1).

2. Concept and key components of PE through Delphi round

A conceptual framework of PE among Korean doctors consisting of three categories with 11 components was developed. The first category consisted of the elements related to basic communication skills and attitudes that are required in successful doctor-patient relationships. These include (1) attention to the patient’s emotional status; grasping the patient’s emotional status; (2) respecting the patient’s circumstances/opinions/emotions; (3) reassuring and encouraging the patient; (4) taking an interest in the patient as a human being beyond the disease; and (5) picking up verbal/non-verbal cues from the patient and responding to them. The second category included cognitively understanding the patients’ thoughts, opin-

Table 1. Demographics of the Participants

Characteristic	Faculty members (N=42)	Residents (N=67)
Sex		
Women	19 (45.2)	24 (37.1)
Men	23 (54.8)	43 (62.9)
Age (yr)		
<30	-	14 (20.9)
30-34	3 (7.1)	42 (62.7)
35-39	5 (11.9)	10 (14.9)
40-49	19 (45.2)	1 (1.5)
50-60	15 (35.7)	-
Practice experience (yr)		
>30	9 (21.4)	-
20-29	14 (33.3)	-
10-19	15 (35.7)	-
<10	4 (9.5)	70 (100.0)
Job title		
Professor	17 (40.5)	-
Associate professor	10 (23.8)	-
Assistant professor	15 (35.7)	-
4th-year resident	-	57 (85.1)
3rd-year resident	-	11 (16.4)
Specialty		
Internal medicine	16 (38.1) ^{a)}	14 (20.9)
Family medicine	8 (19.0) ^{a)}	3 (4.5)
Emergency medicine	3 (7.0)	7 (10.4)
Pediatrics	2 (4.8)	3 (4.5)
Psychiatry	-	5 (7.5)
Neurology	2 (4.8)	2 (3.0)
Obstetrics & gynecology	2 (4.8)	4 (6.0)
General surgery	6 (14.3)	3 (4.5)
Orthopedic/plastic surgery	1 (2.4)	2 (3.0)
Ophthalmology/otolaryngology/dermatology	-	6 (9.0)
Rehabilitation medicine	1 (2.4)	6 (9.0)
Radiology	-	9 (13.4)
Anesthesiology	1 (2.4) ^{a)}	-
Pathology/nuclear medicine	-	2 (3.0)
Occupational medicine	-	1 (1.5)
Self-assessed level of empathy		
General setting	3.8±0.7	3.8±0.9
Clinical setting	4.0±0.7	3.8±0.7

Data are presented as number (%) or mean±standard deviation.

^{a)}Among faculty members, three internal medicine, one anesthesiologist, and one family doctor worked for medical education simultaneously.

ions, and perspectives, understanding patients' emotions/feelings without immersing in them, and standing in a patient's shoes. The third category included how doctors demonstrate and express their understanding of patients' thoughts and emotions efficiently through verbally and

non-verbally (Table 2).

3. Individual and external factors affecting physician's empathetic behaviors

Table 3 depicts the individual factors that affect PE in

Table 2. Concept and Its Key Components of Physician Empathy in Korean Clinical Contexts

Key components	Mean ^{a)} ± SD	CVR
Basic communication skills and attitudes		
Paying attention to the patient's emotional status	4.4 ± 0.7	0.80
Grasping the patient's emotional status	4.4 ± 0.7	0.78
Respecting the patient's circumstances, opinions, or emotions	4.3 ± 0.7	0.78
Reassuring and encouraging the patient	4.2 ± 0.8	0.71
Taking an interest in the patient as a human being beyond the disease	4.1 ± 0.8	0.58
Picking up verbal/non-verbal cues from the patient and responding to them	4.1 ± 0.8	0.54
Cognitively understanding the patient		
Cognitively understanding the patient's thoughts/opinions/perspectives	4.2 ± 0.7	0.69
Understanding the patient's emotions/feelings without immersing in them	4.2 ± 0.7	0.78
Standing in a patient's shoes	4.2 ± 0.7	0.61
Communicating to the patient what is understood by the doctor		
Verbally expressing doctors' understanding of the patient's thoughts or emotions	4.0 ± 0.7	0.58
Non-verbally demonstrating doctors' understanding of the patient's thoughts or emotions	4.0 ± 0.7	0.49

SD: Standard deviation, CVR: Content validity ratio.

^{a)}Scores on a 5-point Likert scale (1 [not relevant at all]–5 [highly relevant]).

Table 3. Individual Factors Enhancing Physician Empathy

Items	Scores ^{a)}		
	Faculty members (N=42)	Residents (N=67)	Total score by category ^{b)}
Communication skills			4.5 ± 0.5
Ability to attentively listen	4.5 ± 0.6	4.5 ± 0.7	
Ability to respond and communicate with others	4.6 ± 0.5	4.4 ± 0.7	
Self-awareness & management			4.2 ± 0.6
Doctors' physical and mental fitness to practice*	4.6 ± 0.5	4.4 ± 0.7	
Awareness of the doctor's own emotional state	4.2 ± 0.8	4.1 ± 0.9	
Ability to self-reflect**	4.3 ± 0.6	3.9 ± 1.0	
Humanism			4.2 ± 0.7
Attitude of respect and consideration for others**	4.7 ± 0.5	4.3 ± 0.8	
Interest in humans	4.3 ± 0.8	4.1 ± 0.8	
Altruism	4.0 ± 0.8	4.1 ± 0.8	
Tolerance to diversity	4.1 ± 1.0	4.1 ± 0.7	
Clinical competence			4.2 ± 0.7
Competency in patient care	4.2 ± 0.8	4.3 ± 0.8	
Clinical experience and mastery	4.2 ± 0.8	4.2 ± 0.8	
Self-confidence in patient care	3.9 ± 0.8	4.2 ± 0.9	
Personal trait			4.1 ± 0.6
Responsibility	4.2 ± 0.9	4.4 ± 0.7	
Warm personality	4.1 ± 1.0	4.2 ± 0.8	
Self-esteem	4.0 ± 0.8	4.1 ± 0.8	
Conscientiousness	4.0 ± 0.8	4.1 ± 0.9	
Flexibility	3.9 ± 0.8	3.7 ± 0.9	
Interest & sensitivity to the other areas			3.2 ± 0.8
Broad knowledge in general	3.2 ± 0.8	3.4 ± 1.0	
Sensitivity to the arts, such as literature, film, music, and fine arts	3.0 ± 0.8	3.0 ± 1.0	

Data are presented as mean ± standard deviation. Values in bold are statistically significant (p < 0.05).

*p < 0.05 and **p < 0.01 by Student t-test. ^{a)}Scores on a 5-point Likert scale (1 [not important at all]–5 [highly important]). ^{b)}Average category score of total participants.

Table 4. External Factors Hindering Physician Empathy

Factor	Scores ^{a)}		
	Faculty members (N = 42)	Residents (N = 67)	Total
System factor			
Excessive clinical workload*	4.1 ± 1.0	4.5 ± 0.9	4.4 ± 0.9
Time constraints in patient care	4.5 ± 0.9	4.2 ± 0.9	4.3 ± 0.9
Lack of administrative support or human resources from the hospital	3.9 ± 1.1	4.2 ± 0.9	4.1 ± 1.0
Institutional culture lacking communication/cooperation between clinical departments or other healthcare professionals**	3.7 ± 1.0	4.2 ± 0.9	4.0 ± 1.0
Lack of good role models in empathy in clinical practice*	4.3 ± 0.8	3.8 ± 1.0	4.0 ± 0.9
Insufficient education/training on identifying and responding to patients' emotions***	4.4 ± 0.7	3.6 ± 1.0	3.9 ± 0.9
Lack of continuity in patient encounters (episodic care)	3.8 ± 1.0	3.8 ± 1.0	3.8 ± 0.9
Insufficient efforts by doctors' associations to restore public trust	3.6 ± 1.2	3.9 ± 0.9	3.8 ± 1.0
Patient factor			
Patient/family's aggressive attitude or lack of respect towards healthcare professionals	4.1 ± 1.1	4.0 ± 1.1	4.1 ± 0.9
Patient/family's negative preconceptions of doctors and hospitals	4.0 ± 1.0	4.1 ± 0.9	4.1 ± 0.9
Low level of patient/family's understanding of the doctor's explanation	3.9 ± 1.0	4.2 ± 0.7	4.1 ± 0.9
Patients/family's demands for secondary gain such as reimbursement from private insurance policies	3.8 ± 0.8	3.9 ± 1.0	3.9 ± 0.9
Excessive demands by patients/family's beyond medical care itself	3.7 ± 1.1	3.7 ± 1.1	3.7 ± 1.1

Data are presented as mean ± standard deviation. Values in bold are statistically significant ($p < 0.05$).

* $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$ by Student t-test. ^{a)}Scores on a 5-point Likert scale (1 [not important at all]–5 [highly important]).

clinical practice and the differences in PE between medical faculty members and residents. Six categories, namely, communication skill (4.5 ± 0.5), self-awareness management (4.2 ± 0.6), humanism (4.2 ± 0.7), clinical competence (4.2 ± 0.7), personal traits (4.1 ± 0.6), and interest and sensitivity to other areas (3.2 ± 0.8), were extracted and listed in order of average importance score of the total participants. Faculty members scored significantly higher than the residents on the items related to self-awareness management and humanism: “physical and mental fitness” (faculty versus resident 4.6 versus 4.4 , $p < 0.05$), “ability to self-reflect” (4.3 versus 3.9 , $p < 0.01$) and “attitude of respect and consideration for others” (4.7 versus 4.3 , $p < 0.01$) (Table 3).

External factors were categorized into system-related and patient-related factors, as seen in Table 4. Among system-related factors, “excessive clinical workload” (4.4 ± 0.9) had the highest scores, followed by “time constraints” (4.3 ± 0.9) and “lack of administrative support or

human resources” (4.1 ± 1.0). Among patient-related factors, “aggressive attitude or lack of respect for health-care professionals” (4.1 ± 0.9), “negative preconception of doctors and hospitals” (4.1 ± 0.9), and “low level of understanding of the doctor's explanation” (4.1 ± 0.9) scored the highest. Faculty members scored significantly higher on “lack of good role models in empathy” (4.3 versus 3.8 , $p < 0.05$) and “insufficient education and training on identifying and responding to patients' emotions” (4.4 versus 3.6 , $p < 0.001$). While residents scored significantly higher on “excessive clinical workload” (4.1 versus 4.5 , $p < 0.05$) and “institutional culture lacking communication/cooperation” (3.7 versus 4.2 , $p < 0.01$) (Table 4).

Discussion

The present study created a conceptual framework of PE among Korean doctors, comprising three categories:

basic communication skills and attitude, cognitively understanding the patient, and communicating to the patient what is understood by the doctor. Individual attributes and external factors were revealed as influencing factors for PE in real practice.

Although PE is regarded as an essential component in medical practice and education, the consensus on its definition and conceptual clarity needs to be further studied [10,11]. Earlier studies on the subject tended to focus on the emotional aspects of empathy [15–17] while others underlined its multi-dimensional nature, including emotional, cognitive, behavioral, and moral aspects [12–14]. Hojat et al. [5] emphasized PE as having a cognitive component with an actionable aspect [19], which has been widely adopted by many empathy studies across the world.

Our study reveals that Korean doctors perceived PE as falling within the cognitive and behavioral domains. This finding is consistent with the studies by Hojat [19] or Mercer and Reynolds [18] but is distinct from previous literature on the multi-dimensional aspects of empathy [12–14]. In particular, our participants' perception of basic communication skills and attitude as an essential component of PE was similar to the findings of the study by Mercer and Reynolds [18] that emphasized actionable components in the practice of PE. In addition, these behavioral items were perceived as significant attributes of PE and regarded as important individual factors in facilitating empathy in real practice settings. Therefore, the authors may interpret that Korean doctors consider basic communication skills and behaviors as essential pre-requisites to practicing clinical empathy.

Not surprisingly, the concept of PE can vary depending on cultural backgrounds [7,21,22]. A Japanese study on PE revealed that medical students and residents regarded the moral component as a major factor in developing empathy, despite the decrease in the importance of the moral aspect

during the training years [23]. However, our study participants did not mention any moral aspect during both the Delphi rounds and accompanied surveys. This discrepancy could be ascribed to the study participants' level of training and experience. Our participants were all physicians with more than three years of residency training, whereas the Japanese study respondents included medical students and junior residents who were still in their formative years, professionally.

Influencing factors in physicians' empathetic behaviors in actual practice settings included individual attributes and external factors. Interestingly, the participants of our study tended to regard individual or personal attributes as promoting factors for empathy, whereas external factors, including working environment and patient/family matters, were perceived as inhibiting or hindering empathy in patient care. Among individual attributes, communication skills, self-awareness management, humanism, clinical competence, and some positive personality traits such as responsibility and conscientiousness scored high as PE enhancers, whereas interest and sensitivity to other areas were relatively less recognized in practicing PE. In contrast to the previous studies that proposed sensitivity to art, literature, or poetry as facilitating PE [30–32], Korean doctors regarded this attribute as less important in the practice of PE.

External factors can be classified as a system- and patient-related factors. Among various system factors, excessive workload and time constraints scored higher in hindering PE. Excessive workload has been well-known to lead to negative clinical outcomes, including medical error, low quality of patient care, and doctors' psychosocial stress and burnout [33,34]. Among patient-related factors, "patient's aggressive attitude and negative preconception" was identified as an external barrier to physicians' empathic behavior. This finding emphasizes that the need to restore mutual trust between the patients/their family and

medical professionals is critical to improving clinical empathy.

A patient's demand for secondary gains, including requesting documentation for reimbursement from private insurance policies, was also identified as hindering PE in real practice settings, a unique finding of this study. Many Koreans have private health insurance (PHI) schemes to compensate for the insufficient coverage by the national health insurance and patients often ask doctors to fill out extensive documentation [35], which they consider extra, futile, and time-consuming work. Sometimes, doctor-patient relationships are strained after doctors reject the patients' requests for a fake diagnosis. A majority of the clinicians responded that PHI was an additional burden to their practice and had a negative influence on doctor-patient relationships without benefitting patients' health [36]. The doctors' opinions on PHI uncovered in this study reflect the specificity of the Korean medical insurance system and suggest the need to improve the PHI system.

There were some significant differences between the responses of faculty members and residents in the perception of individual and external factors affecting PE. To summarize, faculty members paid more attention to the areas that could be improved by better education and training in both individual and external factors. Meanwhile, trainees perceived the system issues, such as working conditions and institutional communication cultures more highly.

There are some limitations of this study. First, the participating faculty members of this study were selected from the clinical educators who worked in medical education. Therefore, the perspectives of those who are not interested in medical education may be different from our findings. Second, although the study attempted to recruit participants across the country, the number of participants was small and fell short in the representativeness of Korean doctors. A further larger-scale

study to validate our findings including three categories and its items should be followed. Lastly, the conceptual model of PE in the study could not reflect patient/public views or expectations of clinical empathy. Nevertheless, the present research is the first empirical study to define the conceptual framework of PE, drawing from Korean clinicians' opinions based on their real-world practice experience, and to identify factors affecting physicians' empathetic behavior in clinical settings.

In conclusion, the concept of PE among Korean doctors includes behavioral and cognitive aspects. Individual attributes and external system- and patient-related factors were revealed as influencing factors for PE in Korea. Further studies are needed to enhance the conceptual clarity of PE in the Korean clinical context and to promote doctors' empathetic practice even in less favorable health-care environments.

ORCID:

Su Hyun Kim: <https://orcid.org/0000-0002-7968-4649>

Young-Mee Lee: <https://orcid.org/0000-0002-4685-9465>

Acknowledgements: We, the authors, appreciate Professor Hyung Seok Shin in developing the survey instrument construction and statistical advice. We also acknowledged the effort of Professor Hyunmi Park in assisting with the English translation of the survey items.

Funding: This research was supported by the National Research Foundation of Korea (NRF) grant funded by the Korean Government (MIST) (R1A2B4013614).

Conflicts of interest: No potential conflict of interest relevant to this article was reported.

Author contributions: Kim SH contributed substantially toward the data analysis & interpretation, and drafting & revision of the manuscript. Lee YM contributed substantially to the conception and design of the study, data collection, and critical revision of the manuscript. All

authors have reviewed and approved the final version of the manuscript.

References

1. Derksen F, Bensing J, Lagro-Janssen A. Effectiveness of empathy in general practice: a systematic review. *Br J Gen Pract.* 2013;63(606):e76-e84.
2. Hojat M. Empathy and patient outcomes. In: Hojat M, ed. *Empathy in Health Professions Education and Patient Care.* New York, USA: Springer; 2016:189-201.
3. Hojat M, Louis DZ, Markham FW, Wender R, Rabinowitz C, Gonnella JS. Physicians' empathy and clinical outcomes for diabetic patients. *Acad Med.* 2011;86(3):359-364.
4. Rakel D, Barrett B, Zhang Z, et al. Perception of empathy in the therapeutic encounter: effects on the common cold. *Patient Educ Couns.* 2011;85(3):390-397.
5. Hojat M, Gonnella JS, Mangione S, Nasca TJ, Magee M. Physician empathy in medical education and practice: experience with the Jefferson Scale of Physician Empathy. *Semin Integr Med.* 2003;1(1):25-41.
6. Hong M, Lee WH, Park JH, et al. Changes of empathy in medical college and medical school students: 1-year follow up study. *BMC Med Educ.* 2012;12:122.
7. Park KH, Roh H, Suh DH, Hojat M. Empathy in Korean medical students: findings from a nationwide survey. *Med Teach.* 2015;37(10):943-948.
8. Platt FW, Keller VF. Empathic communication: a teachable and learnable skill. *J Gen Intern Med.* 1994;9(4):222-226.
9. Winter R, Issa E, Roberts N, Norman RI, Howick J. Assessing the effect of empathy-enhancing interventions in health education and training: a systematic review of randomised controlled trials. *BMJ Open.* 2020;10(9):e036471.
10. Batt-Rawden SA, Chisolm MS, Anton B, Flickinger TE. Teaching empathy to medical students: an updated, systematic review. *Acad Med.* 2013;88(8):1171-1177.
11. Hall JA, Schwartz R. Empathy present and future. *J Soc Psychol.* 2019;159(3):225-243.
12. Reynolds WJ. *The measurement and development of empathy in nursing.* New York, USA: Routledge; 2017.
13. Davis MH. Measuring individual differences in empathy: evidence for a multidimensional approach. *J Pers Soc Psychol.* 1983;44(1):113-126.
14. Morse JM, Anderson G, Bottorff JL, et al. Exploring empathy: a conceptual fit for nursing practice? *Image J Nurs Sch.* 1992;24(4):273-280.
15. Batson CD, Coke JS. Empathy: a source of altruistic motivation for helping. In: Rushton JP, Sorrentino RM, eds. *Altruism and Helping Behavior: Social, Personality, and Developmental Perspectives.* Hillsdale, USA: Lawrence Erlbaum Associates; 1981:167-187.
16. Eisenberg N. *Empathy and related emotional responses.* San Francisco, USA: Jossey-Bass; 1989.
17. Rushton JP, Chrisjohn RD, Fekken GC. The altruistic personality and the self-report altruism scale. *Pers Individ Dif.* 1981;2(4):293-302.
18. Mercer SW, Reynolds WJ. Empathy and quality of care. *Br J Gen Pract.* 2002;52(Suppl):S9-S12.
19. Hojat M. *Empathy in patient care: antecedents, development, measurement, and outcomes.* New York, USA: Springer; 2007.
20. Hojat M, Spandorfer J, Louis DZ, Gonnella JS. Empathic and sympathetic orientations toward patient care: conceptualization, measurement, and psychometrics. *Acad Med.* 2011;86(8):989-995.
21. Dehning S, Gasperi S, Tesfaye M, et al. Empathy without borders?: cross-cultural heart and mind-reading in first-year medical students. *Ethiop J Health Sci.* 2013;23(2):113-122.
22. Kataoka HU, Koide N, Ochi K, Hojat M, Gonnella JS. Measurement of empathy among Japanese medical stu-

- dents: psychometrics and score differences by gender and level of medical education. *Acad Med.* 2009;84(9):1192-1197.
23. Aomatsu M, Otani T, Tanaka A, Ban N, van Dalen J. Medical students' and residents' conceptual structure of empathy: a qualitative study. *Educ Health (Abingdon).* 2013;26(1):4-8.
 24. Roh MS, Hahm BJ, Lee DH, Suh DH. Evaluation of empathy among Korean medical students: a cross-sectional study using the Korean Version of the Jefferson Scale of Physician Empathy. *Teach Learn Med.* 2010;22:167-171.
 25. Yeo S, Kim KJ. A validation study of the Korean version of the Toronto empathy questionnaire for the measurement of medical students' empathy. *BMC Med Educ.* 2021;21(1):119.
 26. Pedersen R. Empirical research on empathy in medicine: a critical review. *Patient Educ Couns.* 2009;76(3):307-322.
 27. Holey EA, Feeley JL, Dixon J, Whittaker VJ. An exploration of the use of simple statistics to measure consensus and stability in Delphi studies. *BMC Med Res Methodol.* 2007;7:52.
 28. Lawshe CH. A quantitative approach to content validity. *Pers Psychol.* 1975;28(4):563-575.
 29. Bank L, Jippes M, van Luijk S, den Rooyen C, Scherpbier A, Scheele F. Specialty Training's Organizational Readiness for curriculum Change (STORC): development of a questionnaire in a Delphi study. *BMC Med Educ.* 2015;15:127.
 30. Lancaster T, Hart R, Gardner S. Literature and medicine: evaluating a special study module using the nominal group technique. *Med Educ.* 2002;36(11):1071-1076.
 31. Clouser KD. Humanities in medical education: some contributions. *J Med Philos.* 1990;15(3):289-301.
 32. Calman KC, Downie RS, Duthie M, Sweeney B. Literature and medicine: a short course for medical students. *Med Educ.* 1988;22(4):265-269.
 33. von dem Knesebeck O, Klein J, Grosse Frie K, Blum K, Siegrist J. Psychosocial stress among hospital doctors in surgical fields: results of a nationwide survey in Germany. *Dtsch Arztebl Int.* 2010;107(14):248-253.
 34. Ahmad R, Lee MY, Othman AE, et al. The impact of workload on job performance among doctors in Malaysian public hospitals: a case study. *Int J Bus Soc.* 2019;20(3):1276-1293.
 35. Korea Institute for Health and Social Affairs. 2019 Korea Welfare Panel Study descriptive report. Sejong, Korea: Korea Institute for Health and Social Affairs; 2019.
 36. Yi SW, Shin GH, Choi EY, Park EW, Bin SH, Cheong YS. Changes in clinical atmosphere after the introduction of private insurance: a survey of private practitioners' experiences. *Korean J Med Ethics.* 2015;18(1):70-79.

Appendix 1. Results of Delphi Round 1

No.	Item	Mean ± SD	CVR	Result
1	Paying attention to the patient's emotional status	4.3±0.8	0.77	Remained
2	Observing and grasping the patient's emotional status	4.4±0.7	0.79	Remained
3	Picking up verbal/non-verbal cues from the patient	4.2±0.8	0.64	Combined to 16
4	Cognitively understanding the patients' thoughts/opinions/perspectives	4.1±0.9	0.63	Remained
5	Understanding the patient's emotions/feelings without immersing in them	4.2±0.8	0.73	Remained
6	Standing in a patient's shoes	4.3±0.8	0.73	Remained
7	Imagining the patient's emotions and feelings as if I were them	3.9±0.9	0.36	Removed
8	Responding to the patient's verbal/non-verbal cues	4.0±0.9	0.57	Combined to 16
9	The doctor verbally expresses their understanding of the patient's thoughts or emotions	4.0±0.8	0.48	Remained
10	The doctor non-verbally demonstrates their understanding of the patient's thoughts or emotions	4.0±0.9	0.45	Remained
11	Taking an interest in the patient as a human being beyond just the disease	4.3±0.9	0.63	Remained
12	Controlling my actions and judgments to ensure that the patient's interests come first	3.9±0.9	0.38	Removed
13	Respecting the patient's circumstances: opinions or emotions	4.4±0.7	0.80	Remained
14	Reassuring and encouraging the patient	4.2±0.8	0.70	Remained
15	Treating the patient comfortably and friendly	3.9±0.9	0.38	Removed
16	Picking up verbal/non-verbal cues from the patient and responding to them			New (no. 3 and 8 combined)

SD: Standard deviation, CVR: Content validity ratio.