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## Characteristics associated with empathic behavior in Japanese oncologists

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**Abstract:**

*Objective:* Oncologists must have empathy when breaking bad news to patients who have incurable advanced cancer, and the level of empathy often depends on various individual characteristics. This study aimed to clarify the relationship between these characteristics and empathic behavior in Japanese oncologists.

*Methods:* We videotaped consultations in which oncologists conveyed news of incurable advanced cancer to simulated patients. Oncologists' empathetic behaviors were coded, and regression analysis was performed to determine the existence of any relationships with factors such as age, sex, and specialism.

*Results:* Sixty oncologists participated. In a multivariate model, only age was related to the empathy score ( $r = 0.406$ ,  $p = 0.033$ ); younger oncologists scored higher than did older oncologists.

*Conclusions:* We found that empathic behaviors were more frequent in younger oncologists.

*Practice implications:* This information could be useful in determining the best approach for implementing future empathy and communication training programs for experienced oncologists in Japanese medical institutions.

**Keywords:** empathy; communication; bad news; cancer; interpersonal relationship

## **1. Introduction**

Patients with incurable advanced cancer suffer intense emotional anguish, particularly when first receiving the bad news of their disease. However, physicians' empathy—defined in medical settings as “a predominantly cognitive attribute that involves an understanding of experiences, concerns and perspectives of the patient” [1]—is reportedly related to relatively high patient satisfaction and relatively low distress, especially when bad news is being delivered [2-4].

Oncologists' characteristics—such as age, sex, and specialism—may be associated with their empathic behavior. Previous studies analyzed empathy using self-reported questionnaires or audio-recorded conversations, with researchers investigating oncologists' reactions to patients' verbal distress cues. However, self-report questionnaires lack objectivity; furthermore, empathy has non-verbal aspects. Indeed, cancer patients' behavior is richly varied, making it difficult to identify empathy through oncologists' reactions to verbal expressions. Therefore, video-recorded conversations between oncologists and simulated patients (SPs) reacting to oncologists' behavior in a standardized way would allow us to make comparisons between consultations, leading to more useful information.

To examine how oncologists' characteristics influence their empathic behavior when breaking bad news, we analyzed video-recorded conversations between oncologists and SPs.

## **2. Methods**

This study was approved by the Ethics Committee of the National Cancer Center of Japan.

## *2.1. Participants*

### *2.1.1. Oncologists*

Sixty oncologists from the National Cancer Center Hospital in Tokyo and the National Cancer Center Hospital East participated. Investigators (*M.F. & Y.Y.*) met with each interested oncologist and fully described the study to them. Oncologists who volunteered to participate signed a consent form and gave information on 4 characteristics: age, sex, specialism, and years in practice.

### *2.1.2. Simulated Patients (SPs)*

Trained adult SPs participated in the study. Two male and four female adult SPs, all of whom had received at least 3 years of training as simulated cancer patients, participated in this study. The scenario was of middle-aged or elderly patients with advanced cancer, who had undergone numerous diagnostic procedures such as biopsy, having a consultation with their oncologists when being informed of their diagnosis. We videotaped each consultation. None of the SPs had encountered the oncologists previously.

## *2.2. Survey Measures*

*Empathy Score:* To score empathy, we used the behavior rating scale, which was based on our previous survey on Japanese cancer patients' communication style preferences when receiving bad news [5-7]. The behavior rating scale included 32 items in 4 subscales, with each item rated on a 5-point scale (0 = not at all to 4 = extremely). The scale assesses the quality and quantity of each empathic behavior, encompassing verbal

and non-verbal communication (*e.g.*, atmosphere, tone of voice, expressions, and glances throughout the interview). All items were chosen through discussion with research experts in the field and experienced oncologists and psycho-oncologists. Of the subscales, we chose to use “Reassurance and Emotional support,” which consists of 9 items, with a total empathy score ranging from 0 to 36 (Table 1). This subscale correlates with the Interpersonal Reactivity Index, a self-reported questionnaire used for assessing empathy ( $r = 0.676$ ,  $p < 0.05$ ). Two independent coders received over 3 months of training in using the scale manual and videotaped 17 interviews as a preparatory experiment, which accounted for approximately 30% of the analyzed data. Inter-rater and intra-rater reliability for these preliminary interviews were high for the behavior rating scale ( $\kappa = 0.826$  and  $0.800$ , respectively).

### *2.3. Statistical Analyses*

Univariate analysis between empathy scores and characteristics was performed using Spearman’s rank correlation coefficients and the Mann-Whitney U test, where appropriate; all characteristics (age, sex, specialism, and years in practice;  $p < 0.05$ ) were retained. The correlation between age and years of practice was strong ( $r = 0.924$ ,  $p < 0.001$ ); thus, we only included age as an independent variable in the multiple regression model to control for multicollinearity. Multiple regression analysis was then performed with empathy score as the dependent variable and the characteristics as independent variables. All  $p$  values are two-tailed. Analyses were conducted using SPSS version 15.0J (PASW Collaboration and Deployment Services).

## **3. Results**



### *3.1. Participant Characteristics*

Sixty Japanese oncologists (50 men; mean age = 36 years) participated in this study (Table 2). Most were surgeons (57%), whereas others specialisms included internal medicine (42%) and radiology (3%).

### *3.2. Empathy Score*

Across all consultations, the median empathy score was 20 (Table 1).

### *3.3. Relationships between Characteristics and Empathy*

In the multivariate model, only age was related to the empathy score: younger oncologists scored higher than older oncologists (Table 3).

## **4. Discussion and Conclusion**

### *4.1. Discussion*

This is the first reported study on the relationship between oncologists' characteristics and the verbal and non-verbal empathic behavior of oncologists, performed by videotaping oncologists delivering bad news to a SP.

In Western countries, characteristics such as age, sex, and specialism have been found to be associated with oncologists' empathic behavior [8]. In a multivariate model in this study, age was the only factor related to the empathy score: younger oncologists scored higher than older ones. This was in agreement with a previous study and could be because younger oncologists are less likely to have experienced emotional burnout from cancer care [9].

Additionally, younger oncologists may score higher because of changes in

educational methods and content. In Japanese medical settings, “empathy” is often confused with “sympathy”—feelings of pity or sorrow for patients’ suffering [10]—and senior Japanese physicians are more likely to have been discouraged from empathizing by mentors, because intense emotional involvement with patients could lead to difficulties in making clinical judgments [11] or cause physician burnout [12]. Physician-patient communication skills were commonly taught in medical schools and residencies in the early 1990s in Western countries; however, such practices did not begin in Japan until the early 2000s.

None of the oncologists in this study had taken a communication skills course; education via these courses might be the key to unlocking more empathetic behavior and improving patient-physician communication. Some researchers believe that empathy is a personality trait that can decline over time with medical education and medical care [13], and Fujimori *et al.* have reported that oncologists, who participate in communication skills course, behave more empathic than the oncologists who have not participated in [14]. Therefore, further investigation should be conducted to determine the best timing for communication skills courses during the medical career.

In multivariate analysis, sex and specialism were not significantly associated with empathic behavior.

Regarding specialism, Hojat *et al.* reported that average empathy ratings were significantly higher among physicians in “people-oriented” specialties (primary care, psychiatry, *etc.*) than among those in “technology-oriented” specialties (surgery, surgical subspecialties, *etc.*) [15, 16].

Gender differences in empathy have been attributed to intrinsic factors (*e.g.*, evolutionary-biological gender characteristics) and extrinsic factors (*e.g.*, socialization

and gender role expectations) [1, 8, 17]. For example, women are believed to develop more caregiving attitudes toward their offspring than men, according to the evolutionary theory of parental investment. Furthermore, women are more receptive to emotional signals [15]. Other researchers reported that female physicians spend more time with fewer patients and conduct more patient-oriented care [18]. Although we found no significant correlation between sex and the empathy score, this might be due to a small number of women in the sample, resulting in a lack of statistical power to detect any effect of sex. It could be inequality in sex among Japanese doctors, the ratio that women occupy is around 20%, but increases of late years.

This study has several limitations. First, the sample size was small. Second, data from SPs, not real cancer patients, was used; furthermore, the conversation was video-recorded, so oncologists could have modified their behavior to meet the experimental demands. However, all participants had reported that the SPs had seemed like real patients, they did not give thought to being recorded. Finally, all oncologists who participated in this study belonged to the National Cancer Center Hospitals, and this may limit generalization. Many oncologists employed by these hospitals communicate daily with their patients, and thus, most would score well. Nevertheless, this study is a step towards measuring and improving oncologists' empathy in Japan.

#### *4.2. Conclusion*

This report investigated the relationship between oncologists' personal characteristics and their empathic behavior. In multivariate analysis, age was the only factor related to the empathy score: younger oncologists scored higher than older ones.

### *4.3. Practice Implications*

Our research could have implications for the selection and education of oncologists. The findings indicate that communication skills training in Japan should be provided not only to younger physicians, but perhaps more importantly also to more experienced physicians.

### **Disclosure**

I confirm that all personal identifiers have been removed or disguised so the persons described are not identifiable and cannot be identified through the details of the story.

### **Conflict of interest**

Dr Shirai, Yamada, and Kondo had received research and salary support through for the Third Term Comprehensive 10-Year Strategy for Cancer Control and Research, Japanese Ministry of Health, Labour and Welfare.

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**Table 1.** Empathy score of oncologists during bad news consultations (*N* = 60)

	Range	Median	<i>SD</i>	correlation
9 items total <sup>a</sup>	6-35	20.5	7.8	-
Empathy score item <sup>b</sup>				
Encouraging patients to ask qu	0-4	4	1.6	0.657
<b>Asking about your worries a</b>	0-4	0	1.4	<b>0.748</b>
Saying words to prepare you r	0-4	3	1.9	0.634
Remaining silent to consider y	0-4	1	1.7	0.689
<b>Accepting your expression of</b>	0-4	3	1.7	<b>0.702</b>
<b>Saying words that soothed yo</b>	0-4	3	1.7	<b>0.755</b>
Telling the news in a hopeful v	0-4	4	1.0	0.265
Telling what you can hope for	0-4	4	1.1	0.373
Assuming responsibility for yc	0-4	2	1.6	0.536

<sup>a</sup> Sum of 9 items of empathy score (range; 0-36)

<sup>b</sup> Responses were based on a 5-point scale (0 = not at all, 4 = extremely).  
Correlations greater than 0.7 are in bold.

**Table 2.** Characteristics of oncologists (*N* = 60)

	<i>N</i>	%
<b>Age (years)</b>		
range	28-65	
Mean	36	
<i>SD</i>	6.7	
<35	29	48.0%
36-45	22	37.0%
46<	9	15.0%
<b>Sex</b>		
male	50	83.0%
female	10	17.0%
<b>Specialism</b>		
<b>surgery</b>	34	56.7%
gastroenterology	18	30.0%
otorynolaryngology	6	10.0%
urology	3	5.0%
gynecology	3	5.0%
breast oncology	3	5.0%
respiratory	1	1.7%
<b>internal medicine</b>	25	41.7%
gastroenterology	12	20.0%
respiratory	6	10.0%
breast oncology	5	8.3%
hematology	1	1.7%
radiation oncology	1	1.7%
<b>radiology</b>	1	1.7%
<b>Physicians' experience (years)</b>		
range	4-31	
Mean	10	
<i>SD</i>	6.4	
<10	30	50.0%
11-20	21	35.0%
21-30	8	13.3%
>31	1	1.7%



**Table 3.** Multiple regression analysis of factors associated with

factor	Coefficient $\beta$	Standardized $\beta$	$t$	$p$ value
Age*	-0.335	-0.289	-0.289	0.033
Sex; male	2.325	0.112	0.862	0.392
Specialis m; internal medicine / the	-2.159	-0.138	-0.995	0.324

Multiple  $R = 0.461$ , multiple  $R^2 = 0.165$ , adjusted multiple  $R^2 = 0.120$

\*; continuous variable