

# Psychological distress among infectious disease physicians during the response to the COVID-19 outbreak in the Republic of Korea

Se Yoon Park<sup>a,1</sup>, Bongyoung Kim<sup>b,1</sup>, Dong Sik Jung<sup>c</sup>, Sook In Jung<sup>d</sup>, Won Sup Oh<sup>e</sup>, Shin-Woo Kim<sup>f</sup>,  
Kyong Ran Peck<sup>g</sup>, Hyun-Ha Chang<sup>f,\*</sup>: The Korean Society of Infectious Diseases

<sup>1</sup> Division of Infectious Diseases, Department of Internal Medicine, Soonchunhyang University Seoul Hospital, Soonchunhyang University College of Medicine, Seoul, Republic of Korea  
<sup>2</sup> Department of Internal Medicine, Hanyang University College of Medicine, Seoul, Republic of Korea  
<sup>3</sup> Division of Infectious Diseases, Department of Internal Medicine, Dong-A University College of Medicine, Busan, Republic of Korea  
<sup>4</sup> Department of Infectious Diseases, Chonnam National University Medical School, Gwangju, Republic of Korea  
<sup>5</sup> Division of Infectious Diseases, Department of Internal Medicine, Kangwon National University Hospital, Kangwon National University School of Medicine, Chuncheon, Republic of Korea  
<sup>6</sup> Division of Infectious Diseases, Department of Internal Medicine, School of Medicine, Kyungpook National University, Daegu, Republic of Korea  
<sup>7</sup> Division of Infectious Diseases, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea

## Introduction

In response to the COVID-19 outbreak that has continued for more than three months, the psychological effects of this outbreak on medical staff has been analyzed in several countries [1, 2]. However, there has been no analysis of the psychological effects on Infectious Diseases (ID) physicians specifically, specialists who have played a pivotal role in responding to the COVID-19 outbreak in many countries, including the Republic of Korea (ROK).

This study aimed to analyze the extent of psychological distress among ROK ID physicians during the COVID-19 outbreak. Moreover, we aimed to investigate factors protecting against psychological distress and the difficulties facing ID physicians when dealing with the COVID-19 outbreak to determine their specific work-related requirements.

## Materials and Methods

### Study design and population

Three investigators (SY Park, B Kim, and HH Chang) designed a questionnaire that was reviewed by the other study authors, and a survey was conducted over a 5-day period, from 21 to 25 April, 2020, targeting all ID physicians in the ROK (n = 275). At the time of the survey, 10 ID physicians were identified as either having retired or died and were excluded. In total, 265 ID physicians were identified as potential participants in the survey and an online-based survey link was forwarded to them via text messaging and e-mail. No financial incentive was offered for completion of the questionnaire. The respondents were anonymized and were requested to enter their own identification number to distinguish any duplicated answers.

## Survey items

The questionnaire was based on the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) and the Depression, Anxiety, and Stress Scales (DASS-21). Overall burnout is defined as a high score in either the emotional exhaustion or depersonalization subscale [3]. The DASS-21 is a 21-item system that provides independent measures of depression, stress, and anxiety with recommended severity thresholds. Cutoff scores >9, >7, and >14 indicate a positive screen for depression, anxiety, and stress, respectively [4].

We investigated factors protecting against psychological distress among ID physicians. We modified questions from a previous study [3] and divided the questionnaire into four categories, as follows: (1) value of work and recognition from others, (2) human and financial support, (3) housework and childcare, and; (4) ensuring sufficient private time. We also investigated difficulties experienced by ID physicians when responding to the COVID-19 outbreak.

**Table 1.** Prevalence of depression, anxiety, stress, burnout and mean DASS-21/MBI-HSS scale score according to care of patients with COVID-19

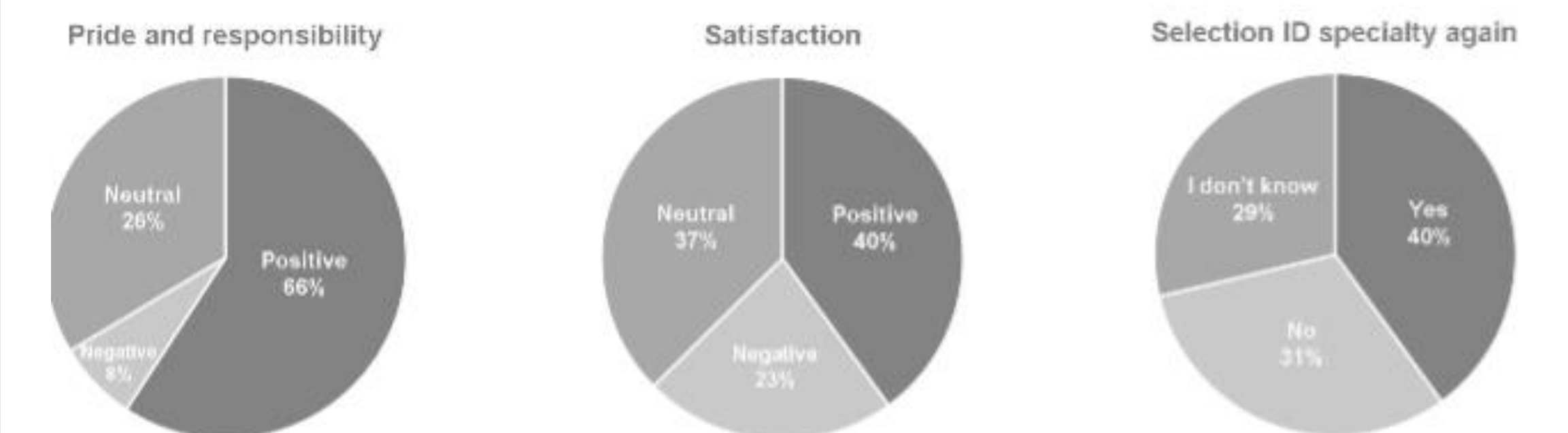
Outcome	Total (n = 115)		COVID-19 patient care, Yes (n = 78)		COVID-19 patient care, No (n = 37)		P-value
	Prevalence, n (%)	Score, mean ± SD	Prevalence, n (%)	Score, mean ± SD	Prevalence, n (%)	Score, mean ± SD	
<b>DASS-21</b>							
Depression	20 (17.4)	5.45 ± 4.16	14 (17.9)	5.58 ± 4.30	6 (16.2)	5.19 ± 3.90	0.643
Anxiety	23 (20.0)	3.88 ± 3.74	17 (21.8)	3.85 ± 3.63	6 (16.2)	3.95 ± 4.01	0.894
Stress	5 (4.3)	6.23 ± 3.86	4 (5.1)	6.21 ± 3.94	1 (2.7)	6.30 ± 3.75	0.905
<b>MBI-HSS scale</b>							
Emotional exhaustion	97 (84.3)	34.92 ± 10.01	68 (87.2)	35.96 ± 10.32	29 (78.4)	32.73 ± 9.25	0.108
Depersonalization	76 (66.1)	10.55 ± 5.69	51 (65.4)	10.71 ± 6.01	25 (67.6)	10.22 ± 5.01	0.669
Personal accomplishments	76 (66.1)	31.66 ± 8.18	51 (65.4)	32.21 ± 8.54	25 (67.6)	30.51 ± 7.34	0.302
Burnout	104 (90.4)	NA	71 (91.0)	NA	33 (89.2)	NA	0.774

## Results

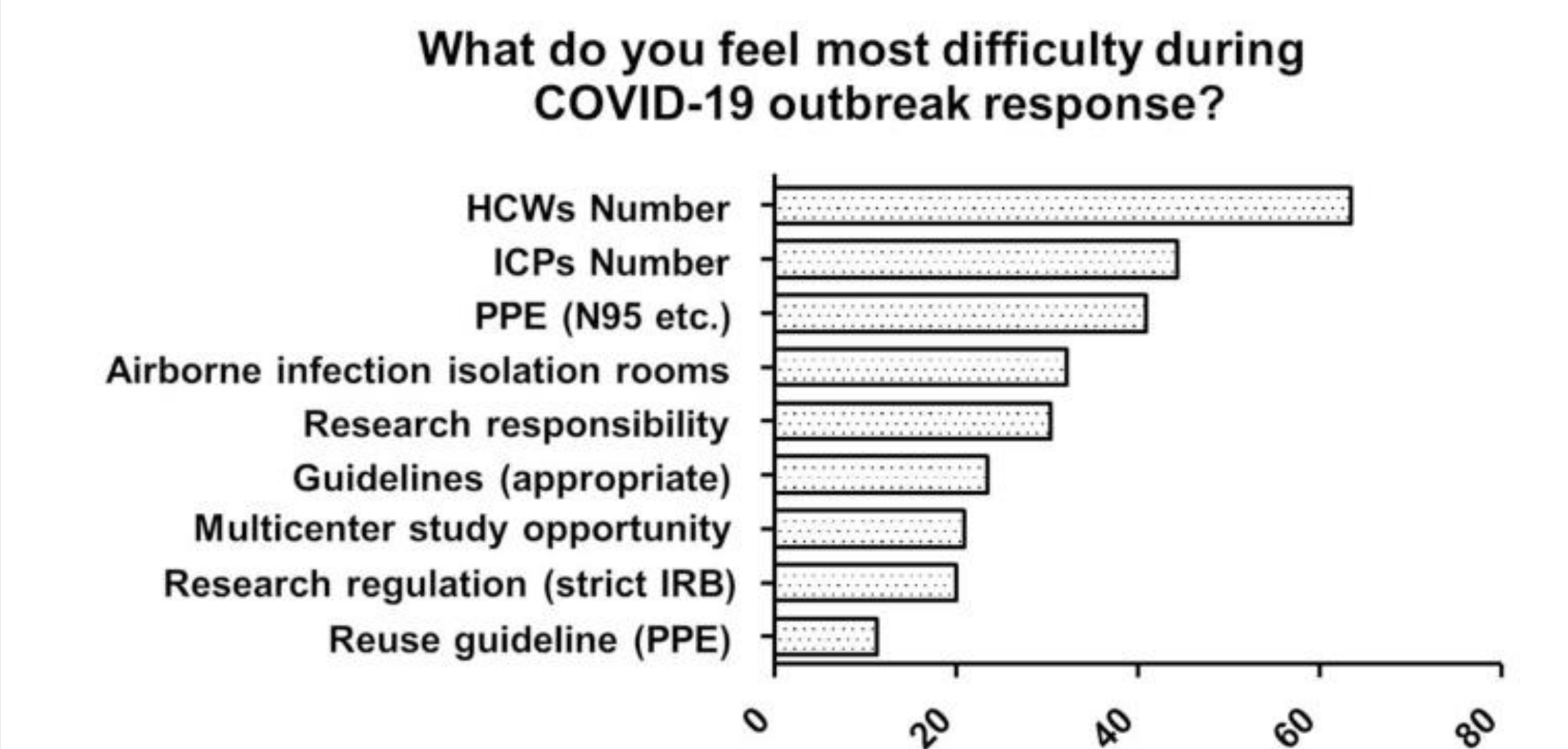
Of 265 ID physicians, 115 (43.3%) responded, showing burnout (97, 90.4%), depression (20, 17.4%), anxiety (23, 20.0%), and stress (5, 4.3%). There were no differences in terms of distress between ID physicians who were directly involved in the care of patients with COVID-19 or not. Greater than 50% of physicians valued their work and felt recognized by others, whereas <10% indicated that sufficient human and financial support and private time had been provided during the outbreak. The most challenging issues concerned a lack of human resources for COVID-19 treatment or infection control, a shortage of personal protective equipment or airborne infection isolation rooms, pressure for research, and lack of guidelines for COVID-19 management.

**Table 2.** Factors protective against burnout as an ID physician

Categories	n (%)
<b>Value of work and recognition from others</b>	
I feel my professional opinions are valued by other physicians	102 (88.7)
I feel that my spouse or partner values my work	81 (70.4)
I feel that my career is a large part of my identity as an adult	80 (69.6)
I feel that my contributions are adequately recognized and acknowledged by my supervisors	67 (58.3)
<b>Human and financial support</b>	
I feel that I have adequate support staff for maximum productivity in this role	19 (16.5)
I feel that I am adequately financially compensated for my work	11 (9.6)
I feel that it is possible to balance work and non-work responsibilities	10 (8.7)
I feel that I have adequate coverage of my work responsibilities to tend to personal matters, emergencies, illness, etc.	9 (7.8)
<b>Housework and childcare</b>	
My spouse/partner and I try our best to share household responsibilities equally	38 (33)
Childcare is not a significant source of stress for me	18 (15.7)
<b>Ensuring enough private time</b>	
I do not often have to complete work at home (clinician, infection control, and research)	3 (2.6)
I have enough time to do something I enjoy	3 (2.6)



**Figure 1** Pride and responsibility, and satisfaction as an infectious disease physician, and intention to select infectious disease specialty again if responders were to have another opportunity to choose a specialty.



**Figure 2** Difficulties in response to the COVID-19 outbreak.

## Conclusions

The findings of our study showed that the COVID-19 outbreak imposed considerable psychological distress on ID physicians and that greater numbers of ID physicians and support staff were needed for patient care and infection control. Strategies to train and support more ID physicians are crucial to prepare effectively for future epidemic/pandemic infectious outbreaks.

## References

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