

# Humanistic burden and prevalence of mental conditions among COVID-19 patients in Japan and China

Wen-Hao Tan<sup>1</sup>, Yirong Chen<sup>1</sup>, Amanda Woo<sup>1</sup>, Huey-Chwen Lin<sup>2</sup>, Vince Grillo<sup>1</sup>

<sup>1</sup>Cerner Enviza, Singapore; <sup>2</sup>Cerner Enviza, Taiwan

Cerner Enviza  
an Oracle company

## Introduction

- The COVID-19 pandemic results in widespread health, economic, and social disruptions
- It is therefore important to understand the multifaceted effects of COVID-19, including the humanistic burden and impact on mental conditions

## Objectives

This study aims to:

- Assess the humanistic burden and prevalence of mental conditions among COVID-19 patients in Japan and China.

## Methods

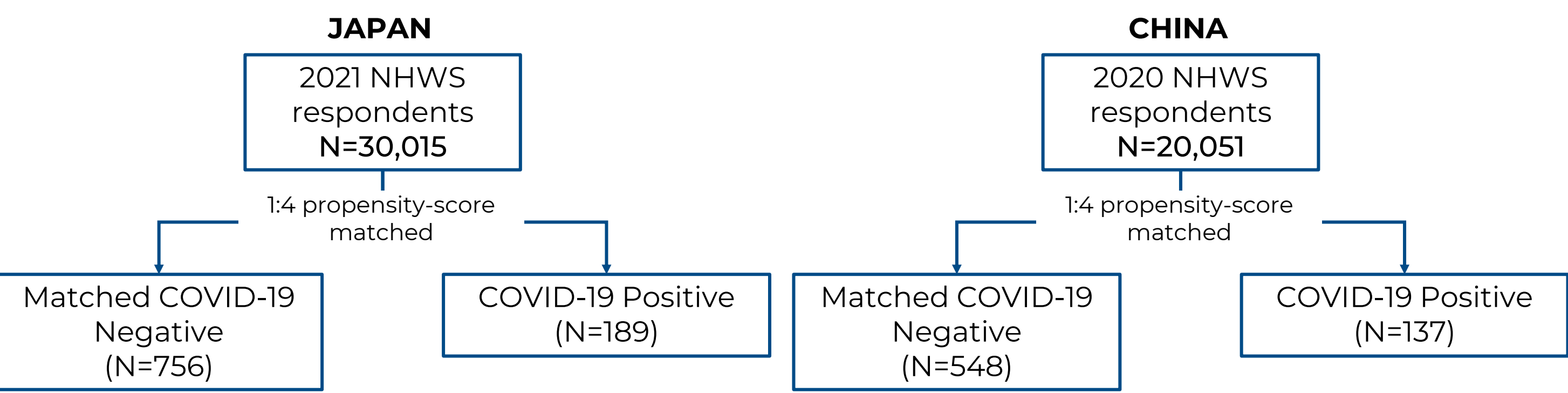
### Study Design:

- Cross-sectional study using Internet-based National Health and Wellness Survey (NHWS) conducted in Japan and China conducted after COVID-19 outbreak:  
2021 Japan NHWS (n=30,015) | 2020 China NHWS (n=20,051)

### Study population:

- COVID-19 patients were identified based on self-reported physician diagnosis
- 1:4 propensity score-matched<sup>†</sup> [based on demographic characteristics] of COVID-19-positive respondents compared to COVID-19-negative respondents (Figure 1)

Figure 1. Study population distribution



### Study variables & outcomes:

- Demographic characteristics, Health-related Quality of Life (HRQoL), Work Productivity and Activity Impairment (WPAI), and Prevalence of Emotional and Mental Conditions

Table 1: Demographics of COVID-19 positive vs. matched COVID-19 negative respondents

	COVID-19 Status	Japan		China	
		Negative	Positive	Negative	Positive
Age (years)	18-29	27.7%	27.5%	22.1%	27.0%
	30-49	39.8%	40.2%	59.7%	53.3%
	50-69	24.8%	23.8%	16.2%	16.8%
	≥70	7.7%	8.5%	2.0%	2.9%
Sex	Male	58.5%	53.4%	67.0%	46.7%
	Female	41.5%	46.6%	33.0%	53.3%
Education level	University degree	57.8%	57.7%	78.8%	75.9%
	Decline to answer	42.2%	42.3%	21.2%	24.1%
Employment status	Currently employed	67.6%	65.6%	87.2%	86.1%
	Not employed	32.4%	34.4%	12.8%	13.9%
Body mass index (BMI)	Underweight (18.5<BMI)	11.5%	11.1%	14.4%	20.4%
	Normal (18.5≤BMI<25)	64.8%	65.1%	63.5%	58.4%
	Obese (25≤BMI)	19.8%	19.0%	20.1%	19.0%
	Decline to answer	3.8%	4.8%	2.0%	2.2%
Smoking status	Never	59.8%	57.1%	32.8%	36.5%
	Former	20.1%	21.7%	10.2%	8.8%
	Currently smoking	20.1%	21.2%	56.9%	54.7%

## Results

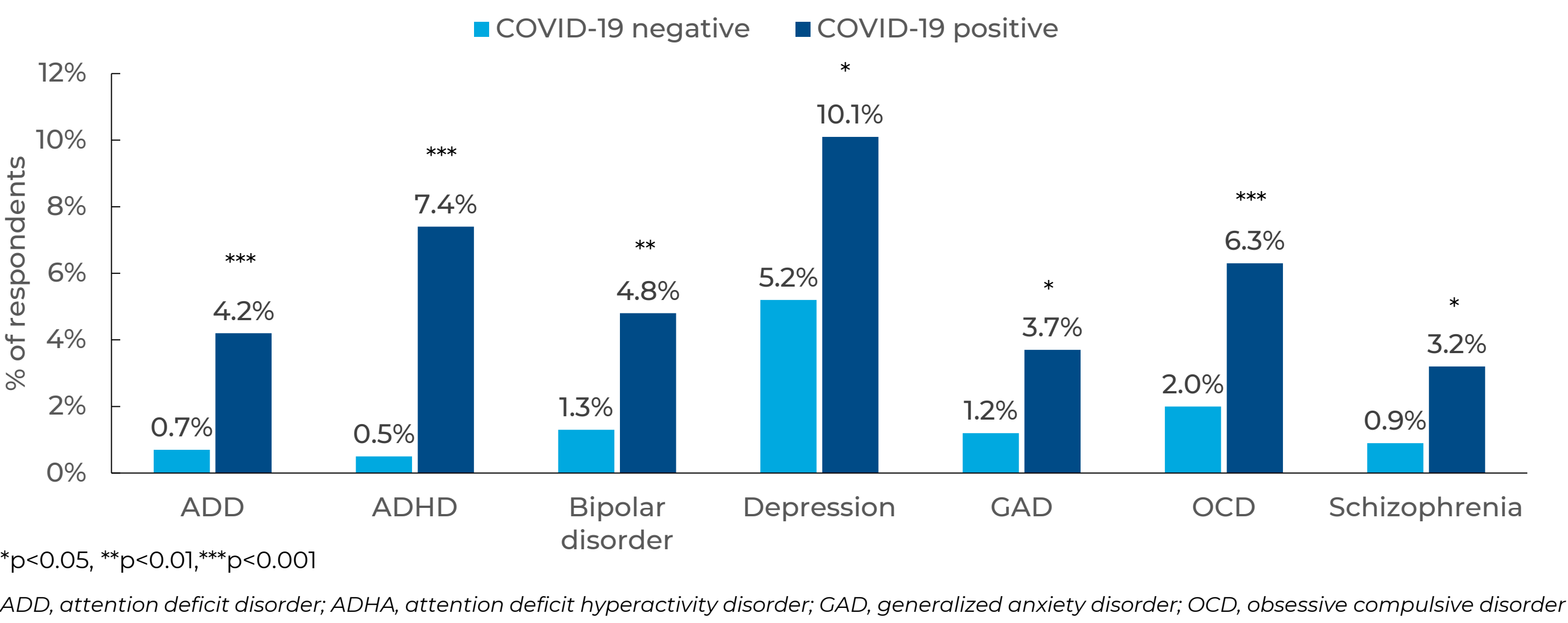
### Elevated rate of mental conditions in COVID-19 positive population

Covid-19 positive patients had significantly more emotional or mental conditions than Covid-19 negative patients

#### In Japan

- Significantly more COVID-19 positive patients had depression (10.1%) followed by ADHD (7.4%), and OCD (6.4%) than COVID-19 negative patients (Figure 2)

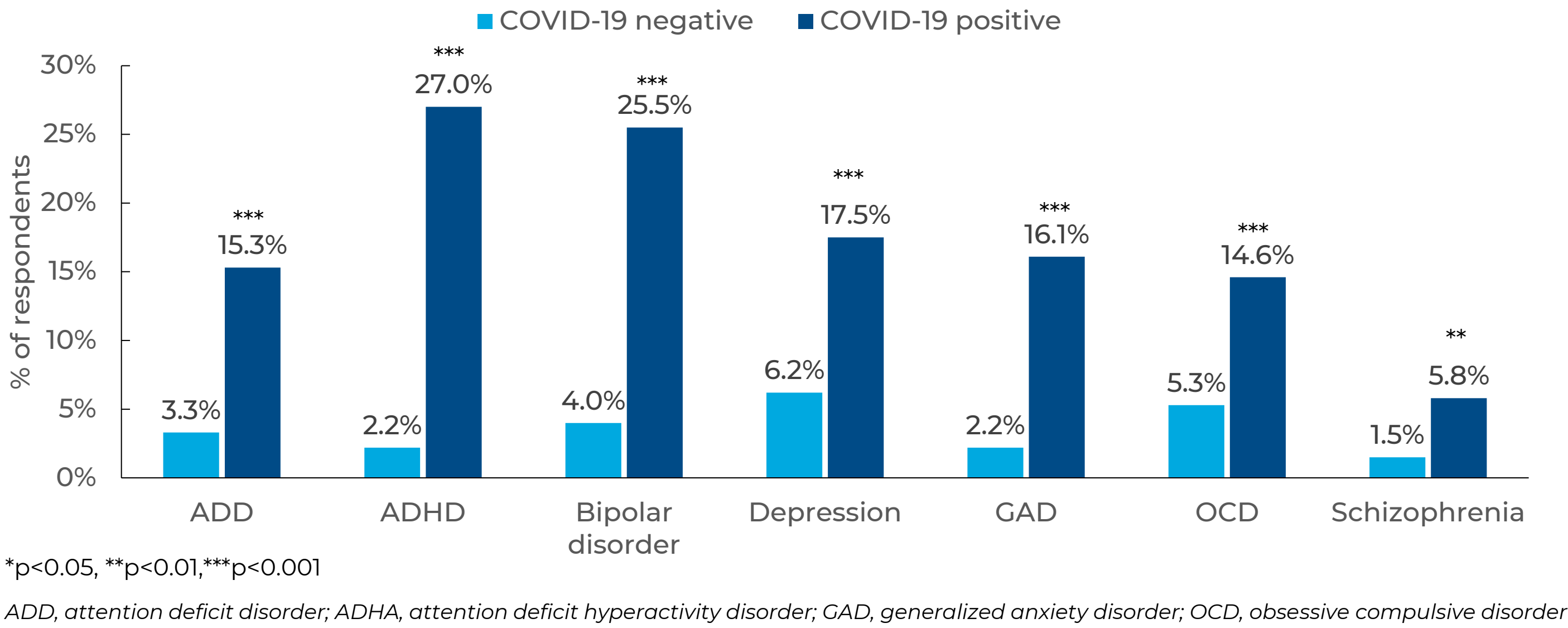
Figure 2. Emotional or mental conditions for COVID-19 positive vs. matched COVID-19 negative respondents in Japan



#### In China

- Significantly more COVID-19 positive patients had ADHD (27%), depression (17.5%), GAD (16.1%), and OCD (14.6%) than COVID-19 negative respondents (Figure 3)

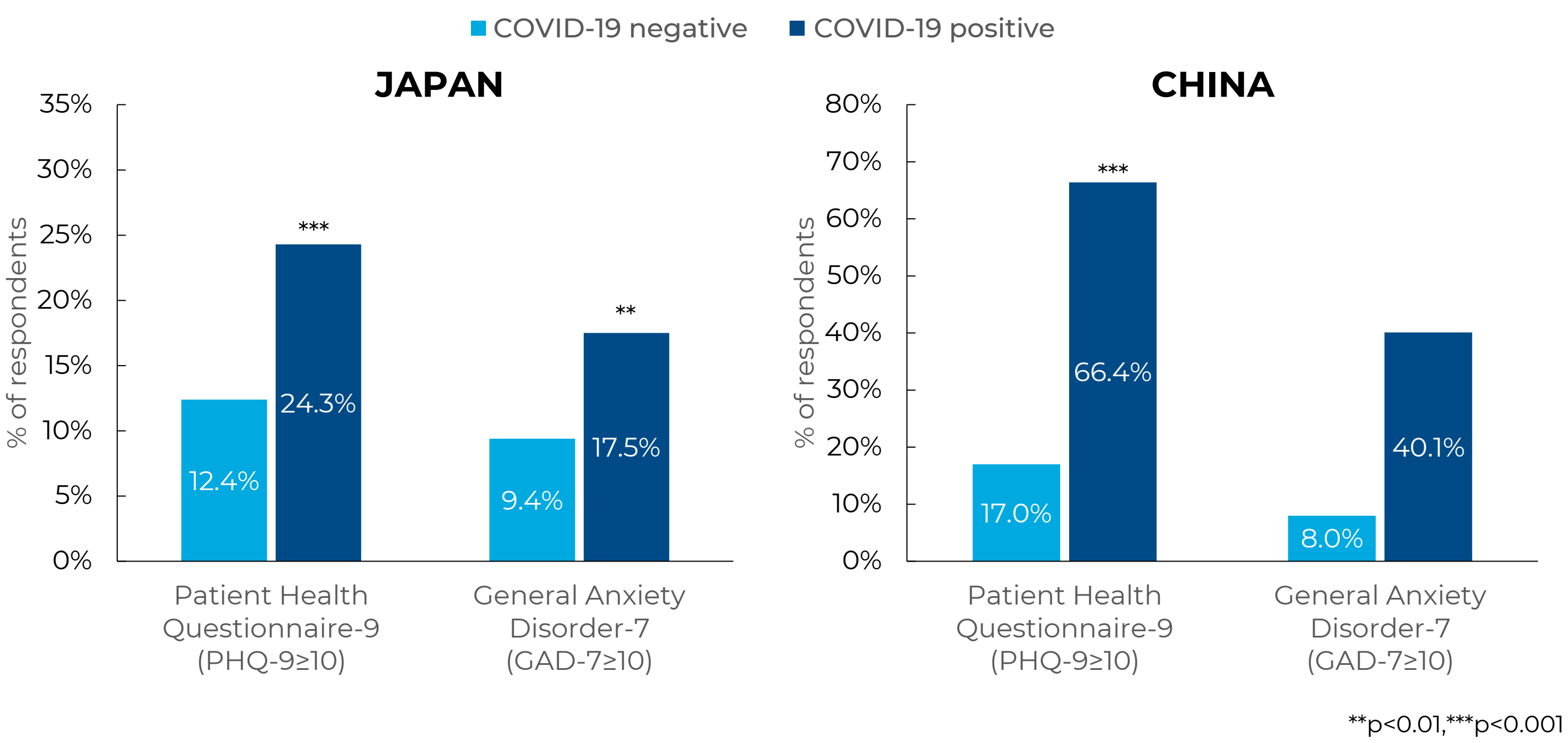
Figure 3. Emotional or mental conditions for COVID-19 positive vs. matched COVID-19 negative respondents in China



### Impact of COVID-19 on Health Related Quality of Life (HRQoL)

Overall, COVID-19 positive patients experienced significantly worse HRQoL than matched COVID-19 negative respondents in China and Japan

Figure 4. HRQOL for COVID-19 positive vs. matched COVID-19 negative respondents in Japan and China



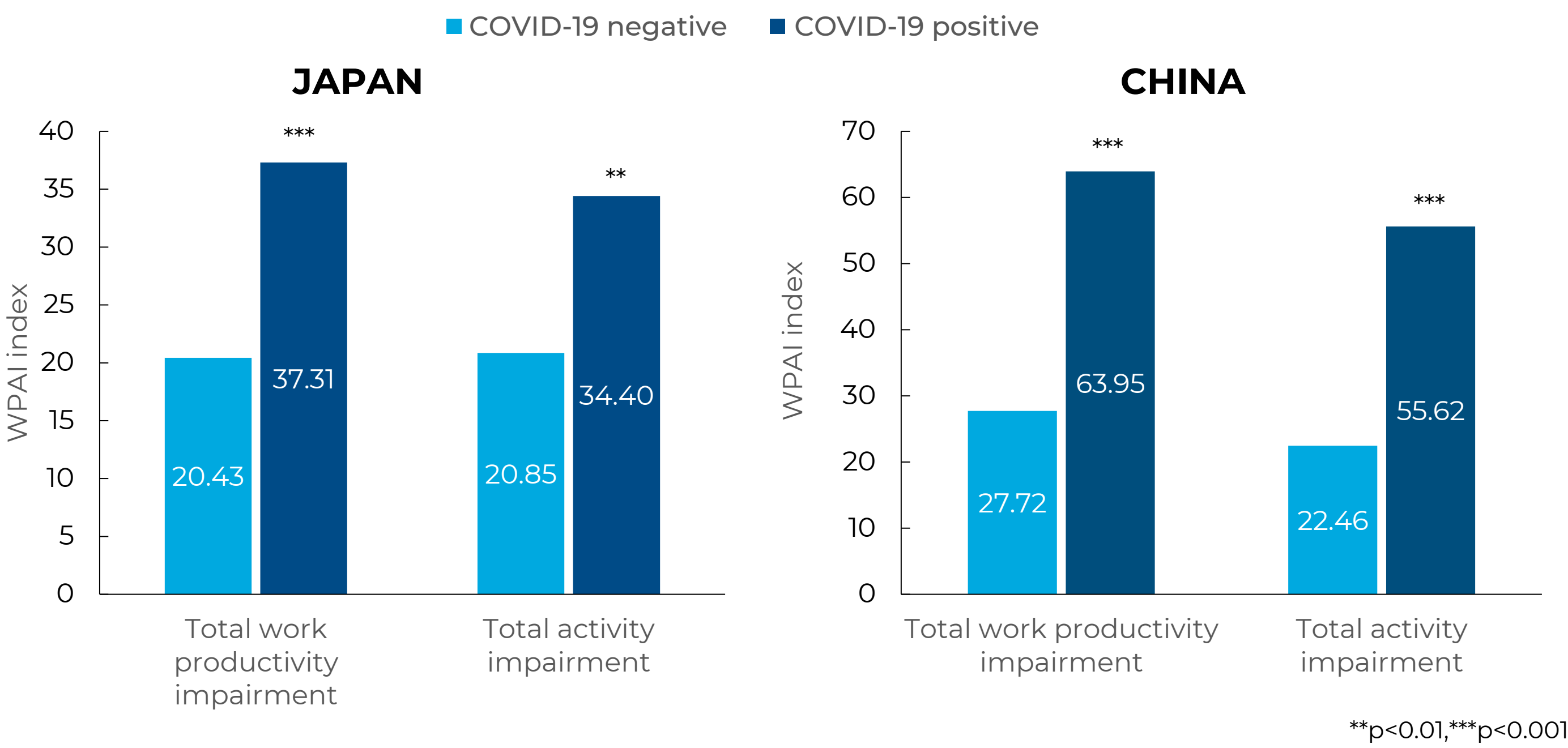
- In Japan, COVID-19 positive respondents exhibited depressive symptoms (24.3% scored PHQ-9≥10) and symptoms of GAD (17.5% scored GAD-7≥10) (Figure 4, left)
- In China, COVID-19 positive respondents exhibited depressive symptoms (66.4% scored PHQ-9≥10) and symptoms of GAD (40.1% scored GAD-7≥10) (Figure 4, right)

### Impact of COVID-19 on Work Productivity and Activity Impairment (WPAI)

COVID-19 positive respondents experienced significantly worse WPAI than COVID-19 negative population

- WPAI and total activity impairment were significantly higher in COVID-19 positive respondents than matched COVID-19 negative respondents in both Japan and China (Figure 5)

Figure 5. WPAI for COVID-19 positive vs. matched COVID-19 negative respondents in Japan and China



## Conclusion

- This study demonstrated a substantial impact of COVID-19 on HRQoL, WPAI, and mental conditions in both Japan and China
- COVID-19 positive respondents experienced significantly worse HRQoL and WPAI, as well as an elevated rate of mental conditions than respondents who are COVID-19 negative