

# The Impact on Working Conditions and Income Amongst Internists in Indonesia: Lesson Learned from the COVID-19 Pandemic

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## ABSTRACT

*Internists are at the forefront of providing care for COVID-19 patients. This situation adds more strain on already overburdened internists, particularly in Indonesia, where resources are scarce and unevenly distributed. The pandemic altered working conditions due to restrictions and regulatory changes. Multiple evidence exists for the effect of the COVID-19 pandemic on physicians' well-being, but less is known about its impact on their work dynamics and livelihoods. This study provides some lessons learned during the COVID-19 pandemic regarding the changes in working conditions and earnings experienced by Indonesian internists.*

*There were 3,115 and 1,772 participants in the first and second survey, respectively. After one year, the proportion of internists handling COVID-19 cases, including critical COVID-19 cases, increased; with fewer internists over 60 years old involved. Working hours, number of patients, and monthly earnings decreased for the majority of internists. The increased workload was experienced by most participants one year of the pandemic, predominantly reported by female internists.*

*The COVID-19 pandemic caused a considerable impact on working conditions and income amongst internists in Indonesia. These findings may provide information to institutions in formulating strategies and tools to improve the working conditions and livelihoods of internists in Indonesia amidst the pandemic and potential public health emergencies in the future.*

**Keywords:** *COVID-19, working conditions, monthly earnings, internist, LMIC.*

## INTRODUCTION

The COVID-19 pandemic starting in 2020 has caused a global crisis in which internists were heavily involved in providing care for COVID-19 patients. That situation added even

more strain on already overburdened internists, particularly in low and middle-income countries (LMIC). This is notably true in Indonesia where resources are scarce and unevenly distributed. There were 4,584 and 4,665 Indonesian internists

working in June 2020 and February 2021, respectively. However, the concentration varied, and most internists practiced in Java (57.13%).<sup>1,2</sup>

As a result of the COVID-19 rapid spread, internists were faced with increasing clinical and nonclinical stressors. Working conditions and environment were altered due to pandemic restrictions and associated regulatory changes. Senior physicians tended to work from home during the pandemic and all physicians were advised to limit their number of patients and decrease their working hours.

Multiple evidence exists for the effect of the COVID-19 pandemic on the physical and mental well-being of physicians<sup>3-5</sup>, but less is known about its impact on their work dynamics and livelihoods; especially in internists in LMICs. This study provides some lessons learned from the COVID-19 pandemic regarding the changes in working conditions and earnings experienced by Indonesian internists.

## METHODS

Two nationwide cross-sectional surveys amongst Indonesian Society of Internal Medicine (*Perhimpunan Dokter Spesialis Penyakit Dalam Indonesia, PAPDI*) members were conducted two times. The first survey was done 6 months after the start of the pandemic (June 2020) and the second survey was done 1 year after the start of the pandemic (February 2021). The inclusion criteria were Indonesian internists who were registered as Indonesian Society of Internal Medicine members. To participate, respondents were needed to be able to access the survey using a computer or smartphone. Participants who refused to participate in the study or did not fill out the online questionnaire completely were excluded from the analysis.

All of the data were collected via an online questionnaire in Indonesian using Google Forms, comprising 51 questions divided into 4 parts: demographic data, working conditions, and monthly earnings. Questions regarding changes in the second survey were compared to the first survey. During the data collection period, the questionnaire was distributed to the internists using email, PAPDI's official website, PAPDI's official social media accounts, and messaging

applications.

This study was approved by the Health Research Ethics Committee of the Faculty of Medicine, Universitas Indonesia, and Cipto Mangunkusumo Hospital. Consent was obtained from the participants using an informed consent form on the first page of the survey, declaring that the questionnaire was filled out voluntarily. Methods conducted in this study were by the Declaration of Helsinki. Data were analyzed using SPSS 24.0 (SPSS Inc., Chicago, IL). Unless stated otherwise, continuous data were presented as mean or median, while categorical data were presented as frequency and percentage.

## RESULTS

A total of 3,116 internists responded to the first survey, one of which was removed due to incomplete data. The analysis included 3,115 participants with a median age of 44 years (interquartile range [IQR]: 38–53). Of all respondents, 1,907 (61.3%) were male. Most respondents resided in Java (53.8%), followed by Sumatra, Central Indonesia, and Eastern Indonesia (25.8%, 11.7%, and 8.7%, respectively). In the second survey, a total of 1,773 internists responded, of which 1 was removed due to incomplete data. A total of 1,772 participants were included in the analysis with a mean age of 45.31 (SD = 10.05) years. Most of the respondents were male (82.4%), with a similar distribution regarding location. Study demographics can be seen in detail in **Table 1**.

### Involvement in COVID-19 Management

In the first survey, 67.0% of participants worked in COVID-19 referral hospitals, 62.2% were appointed to the COVID-19 response team, and 67.4% were involved in handling COVID-19 patients, of which 42.6% also handled severe or critical COVID-19 cases (**Figure 1A**). However, only 50.2% were assigned as the physicians in charge. Additionally, 37.6% of internists experienced an increased workload in the first six months of the pandemic. This condition changed six months later in the second survey. The percentage of internists working in COVID-19 referral hospitals increased by 19.6%, and 12.9% more internists were appointed to the

**Table 1.** Respondent Characteristics.

Characteristics	6 months of the COVID-19 pandemic (n = 3,115)	1 year of the COVID-19 pandemic (n = 1,772)
	n (%)	n (%)
Sex		
Male	1,909 (61.3)	1,461 (82.4)
Female	1,206 (38.7)	311 (17.6)
Age group		
≤ 40	1,164 (37.4)	723 (40.8)
41–60	1,597 (51.3)	878 (49.5)
>60	354 (11.4)	171 (9.7)
Location		
Java	1,677 (53.8)	934 (52.7)
Sumatera	804 (25.8)	464 (26.2)
Central Indonesia	364 (11.7)	262 (14.8)
Eastern Indonesia	270 (8.7)	112 (6.3)

COVID-19 response team. The involvement of internists in COVID-19 cases also increased by as much as 19.2%, and 71.7% were assigned as physicians in charge. **Figure 2** displays the proportion of COVID-19 patients handled by internists compared to non-COVID-19 patients. Notably, the number of internists handling severe or critical COVID-19 cases almost doubled to 80.9%. Furthermore, the percentage of internists reporting an increased workload in the second survey increased by 15.6%.

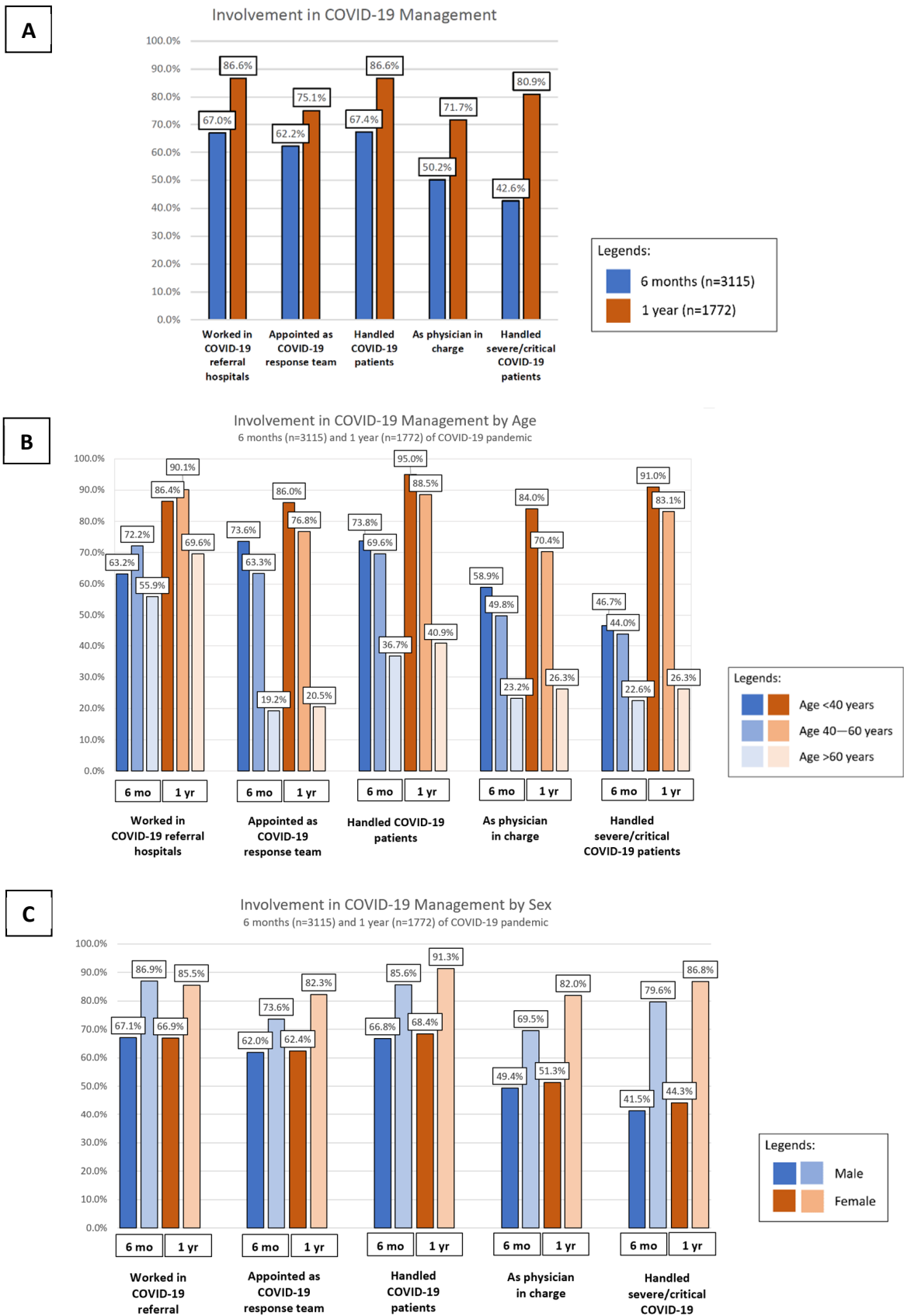
**Figure 1B** demonstrates the involvement of COVID-19 management by age. Compared to other age groups, fewer internists over 60 years old worked in COVID-19 referral hospitals, were appointed as the hospital's COVID-19 response team, handled COVID-19 patients, and treated critical cases. Most internists working in COVID-19 referral hospitals were 40–60 years old (72.2%), but younger internists under 40 years old dominated the COVID-19 response team (86.0%) and handling of COVID-19 cases (95.0%), including being the physicians in charge (84.0%). In the second survey, the overall numbers increased in all age groups. Notably, the number of internists under 40 years old handling severe or critical COVID-19 cases doubled (from 46.7% to 91.0%). There were no discernible differences in the involvement of COVID-19 management between both sexes as seen in **Figure 1C**. In the second survey, there was a 30.7% increase in the proportion of female internists assigned as physicians in

charge, compared to the 20.1% increase in male internists. In addition, compared to the male participants, more female physicians experienced an increased workload both in the first (43.0% vs 34.2%) and second (65.0% vs 50.7%) surveys.

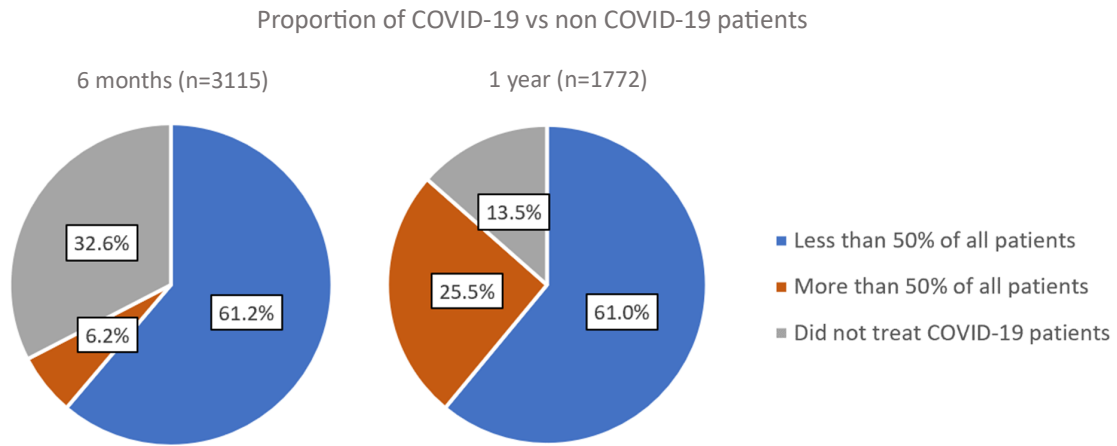
### Changes in Working Conditions

In the first 6 months, 59.2% of internists experienced a decrease of more than 50% in working hours and 57.5% reported a decrease of more than 50% in the number of patients compared to before the pandemic (**Figure 3A**). Reduction in working hours was more prevalent in internists over 60 years old (50.8% experienced less than a 50% decrease and 28.5% experienced more than a 50% decrease in working hours). Similarly, more internists over 60 years old reported a more than 50% decrease in the number of patients compared to other age groups as seen in **Figure 3B**. In the second survey, internists over 60 years old who experienced no change in working hours remained steady, albeit the majority still reported a decrease.

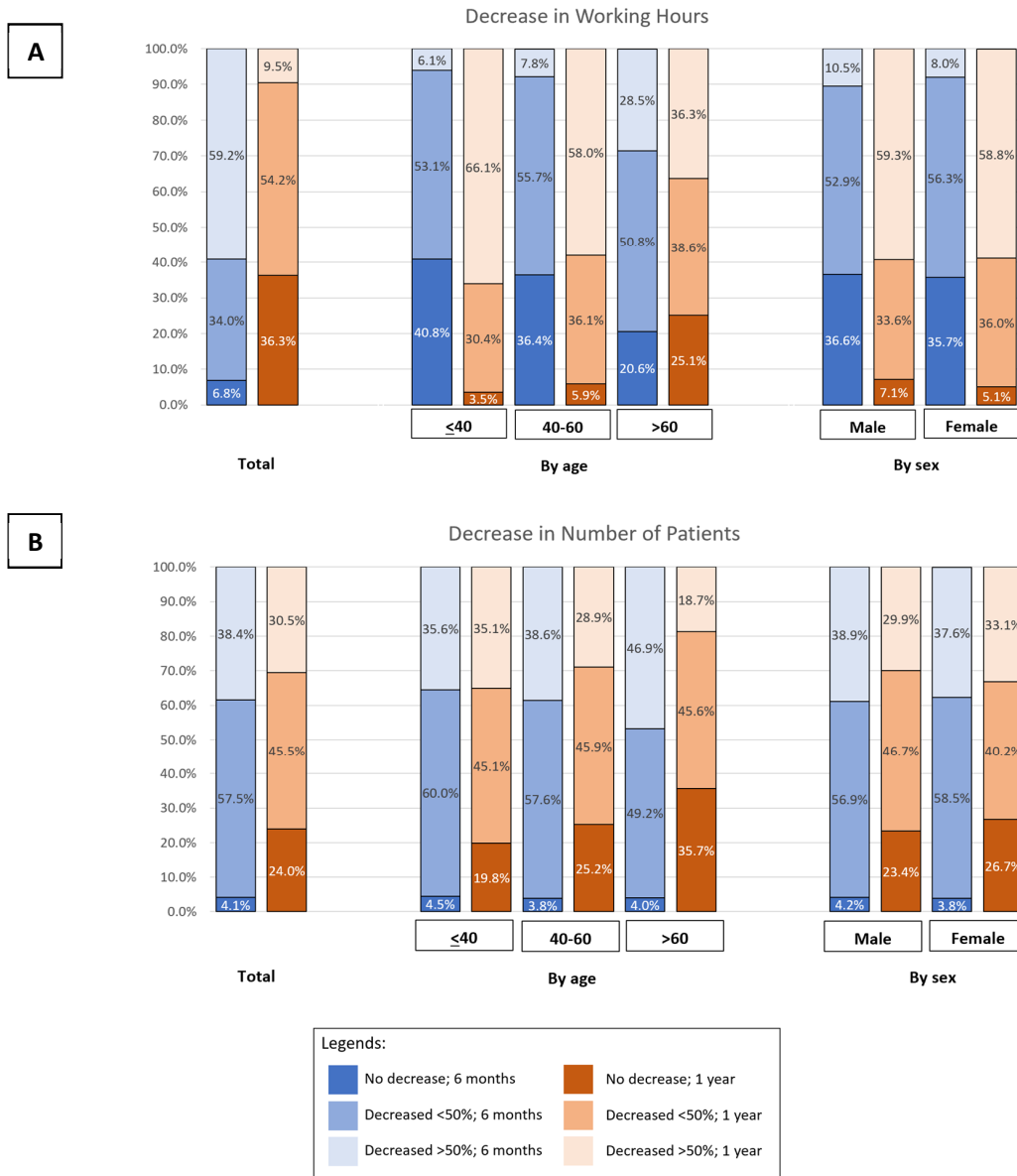
The number of consultations and night shift schedules remained steady for most internists (69.9% and 64.6% for the first and second surveys, respectively) as displayed in **Figure 4A**. Accounting for age, more internists over 60 years old experienced a decrease in the number of consultations and night shifts compared to other age groups in the first survey. Both sexes experienced similar changes in the first and second surveys.



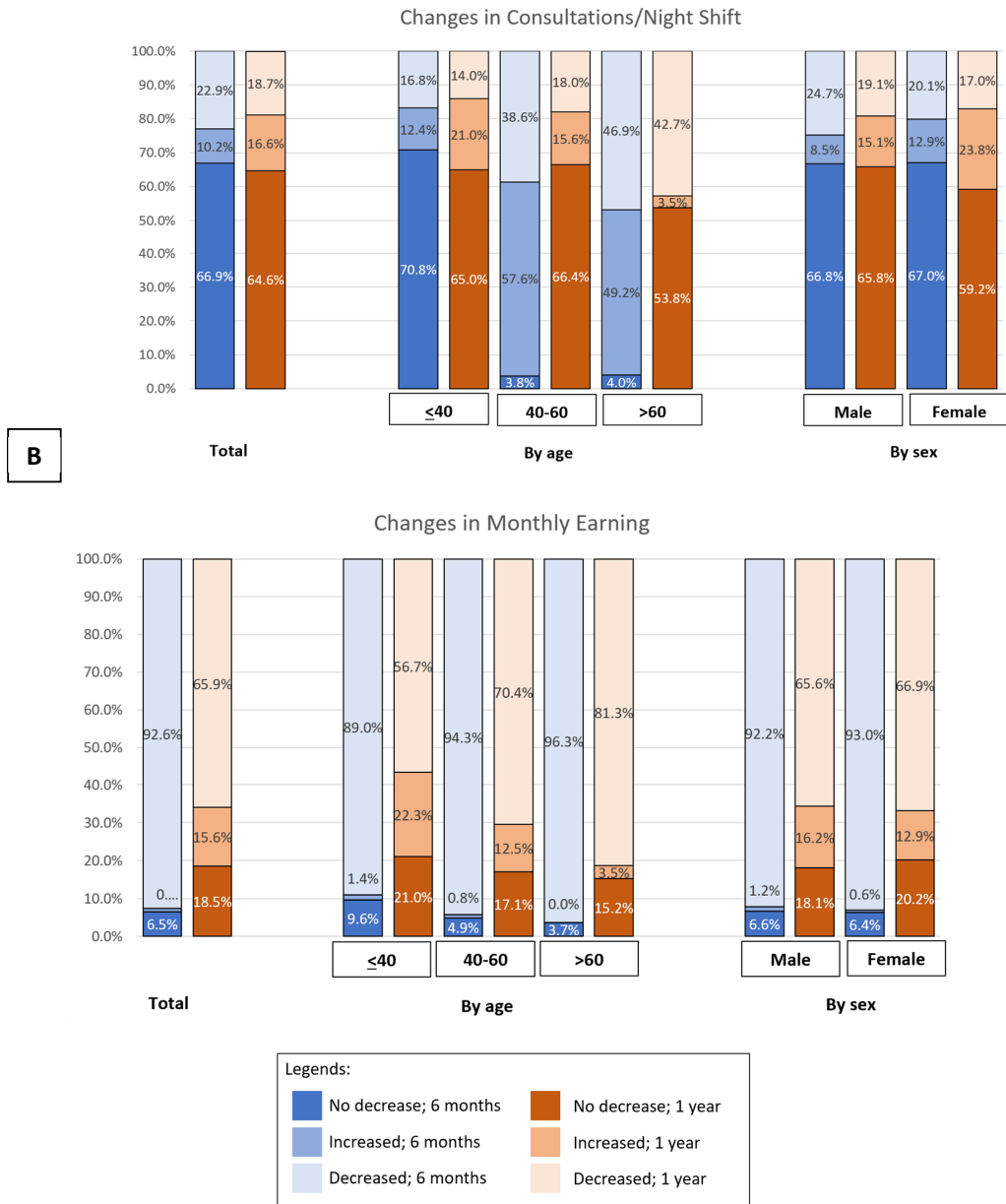
**Figure 1.** Involvement in COVID-19 management during 6 months and 1 year of the COVID-19 pandemic (A) and further categorizing by (B) age and (C) sex.



**Figure 2.** Proportion of COVID-19 vs non-COVID-19 patients in 6 months (n = 3115) and 1 year (n = 1772) of the pandemic.



**Figure 3.** Decreases in (A) working hours dan (B) number of patients in 6 months and 1 year of the COVID-19 pandemic.



**Figure 4.** Changes in (A) number of consultations or night shifts and (B) monthly earnings in 6 months and 1 year of the COVID-19 pandemic.

A decrease in monthly earnings was experienced by nearly all of the respondents in the first survey (92.68%). More than half (65.9%) of participants saw a decrease in income six months later in the second survey, particularly in the 40–60 and over 60 age groups (Figure 4B). Among internists over 60 years old, there was a predominance of those who reported a reduced income at six months and one year of the COVID-19 pandemic (96.3% and 81.3%, respectively). The proportion of internists who experienced a decrease in monthly income was

similar in both sexes.

**DISCUSSION**

During the first survey, confirmed COVID-19 cases reached 55,092 cases with a mortality rate of 2.85 (CFR 5.1%).<sup>6</sup> The number increased to 735,124 cases with a 21.944 mortality rate (CFR 3.0%) six months later in the second survey.<sup>7</sup> To overcome the increased number of patients, the Indonesian government appointed hundreds of COVID-19 referral hospitals. By October 12, 2020, there were 903 COVID-19 referral

hospitals in Indonesia, and each was given the liberty to form its own COVID-19 response team.<sup>8</sup> In this study, most of the internists worked in COVID-19 referral hospitals and were included in the COVID-19 response team. The majority also handled COVID-19 cases, including patients infected with severe or critical COVID-19. The involvement of internists in the management of COVID-19 was increased in the second survey, in line with the surge in COVID-19 cases.

Only half of internists (50.2%) who handled COVID-19 cases were assigned as the physicians in charge in the first survey, but the numbers rose to 71.7% six months later. This number was similar to a study done by Cheong et al, who reported that 80% of patients hospitalized for COVID-19 were mostly treated by internists, especially the infectious disease physicians.<sup>9</sup> Internists were heavily involved after one year of the pandemic, possibly due to a better understanding of COVID-19, its interplay with preexisting conditions, comorbidities, and complications that involve multiple organ systems.<sup>10</sup>

A smaller proportion of older doctors over 60 years old worked in referral hospitals, took part in COVID-19 response teams, and handled COVID-19 cases. This might be because older physicians over 60 or physicians with chronic conditions were urged not to practice directly with patients during the pandemic in Indonesia.<sup>11</sup> No notable discrepancy was noted between the proportion of male and female internists in this regard. This result contrasted with a study done by Soares et al., which reported that male physicians were more likely to handle COVID-19 patients.<sup>12</sup>

Our study showed that most internists in Indonesia reported a reduction in working hours during the pandemic. The regular working hours for the general population in Indonesia are 40 to 42 hours per week, but the numbers vary between physicians depending on the healthcare facility or unit. This decrease in working hours was also experienced by other medical practices worldwide.<sup>13</sup> A survey conducted in early May 2020 by the Texas Medical Association showed that 68% of doctors saw a reduced working hours

during the pandemic.<sup>14</sup> Compared to January 2019, the average weekly hours worked by US physicians dropped significantly from 50.8 hours to 47.5 hours in May 2020.<sup>15</sup> de Oliveira et al. reported changes in the working hours of 1,182 physicians in Brazil during the COVID-19 pandemic. The study demonstrated that working hours were increased for physicians working in the public sector, while most of the private-only physicians saw a decrease.<sup>16</sup>

Nearly all participants in our study experienced a declining number of patients during the pandemic. This is in line with a study on general physicians in Germany which showed that the number of patient per week was significantly reduced by 49.0% during the COVID-19 lockdown.<sup>17</sup> During the initial two months of the COVID-19 pandemic, Baum et al. found that outpatient visits in the US Department of Veterans Affairs declined by 55.5%.<sup>18</sup> Byun et al. also reported a decrease of 10.2% in the number of outpatient internal medicine visits in South Korea from March to April 2020.<sup>19</sup> Although the number of patients decreased for most internists, half of our study's respondents had no changes in the number of consultations or night shift schedule.

The decline in working hours and number of patients during the pandemic may suggest the changes in health behavior, such as reduced social contacts and the tendency to watch and wait. External factors such as medical institutions' lockdowns, fear of hospital-acquired infection, and the stigma of confirmed COVID-19 infection may play a role in the decrease in healthcare utilization. Improved flexibility brought by COVID-19-driven policies can also contribute by allowing patients to receive medical services via telemedicine. Indeed, the COVID-19 pandemic urged many practitioners to incorporate teleconsultation into their practice. Unfortunately, we have no data about the condition after the pandemic in Indonesia. A survey evaluating the use of telemedicine in the post-pandemic era among French oncologists revealed some barriers encountered by the practitioners, including the lack of physical examination, technical difficulties (network, connection, sound), and

additional workload (if the teleconsultations are not part of their standard schedules). Thus, teleconsultation should be used as an adjunct to in-person visits and integrated into standard consultation schedules.<sup>20</sup>

Despite the reduced working hours and number of patients, 37.6% of internists experienced an increased workload in the first survey. This number surged by 15.6% after one year of the COVID-19 pandemic. Some reasons might affect these results. In our survey, the number of patients generally decreased for most internists, but the proportion of COVID-19 patients increased. The increased workload was mostly experienced by internists under 40, who mostly functioned as physicians in charge compared to those of other age groups. The escalating number of COVID-19-related-hospitalization imposed burdens on internists, especially when the disease's complexity was still novel and unpredictable in the first few months of the pandemic.<sup>10</sup> Furthermore, internists are not only responsible for handling COVID-19 cases and their complications but also various other internal medicine conditions. This may also be further aggravated by the morbidity and mortality of physicians due to COVID-19 infection. There is no official report on the COVID-19 infection rate amongst physicians in Indonesia, but a study by Soebandrio et al. reported that from March to May 2020, 46 out of 1,201 specimens obtained from healthcare workers in Jakarta tested positive for COVID-19.<sup>3</sup> Additionally, according to the Indonesian Medical Association (IMA), the number of doctors who died in Indonesia was amongst the highest in the world.<sup>21</sup> Until March 2023, a total of 2,172 doctors died of COVID-19.<sup>22</sup> Moreover, increasing number of research projects and online meetings outside of working hours may also contribute to the increased workload amongst internists during the COVID-19 pandemic.

More female internists in this study perceived an increased workload both at six months and one year after the pandemic. An Italian survey of physicians and other healthcare professionals found that women were more likely to report an increased workload during the pandemic.<sup>23</sup> Female physicians working as frontline providers

have been demonstrated to have a greater complexity of work-life balance, evidenced by spending 8.5 more hours per week on child-rearing and domestic tasks compared to their male counterparts.<sup>24</sup> Furthermore, the COVID-19 pandemic exacerbated these obstacles by forcing school closures and childcare restrictions during lockdown.<sup>25,26</sup> Morgan et al. reported that during crises (pandemics, epidemics, and natural disasters), female healthcare workers were more likely to experience an increased workloads and caregiving responsibilities at home.<sup>27</sup> During the pandemic, women have been compelled to reduce their working hours four to five times more than men due to childcare and domestic work.<sup>28</sup>

A decrease in monthly income was experienced by nearly all respondents. The COVID-19 pandemic has had a detrimental impact on medical practices worldwide, especially regarding decreased revenue. The American Medical Association (AMA) survey in July and August 2020 reported that out of 3,500 physicians, 81% experienced a drop in income compared to the pre-pandemic era with an average of 32% decrease.<sup>29</sup> De Oliveira et al. also reported that the earnings of physicians in the public sector in Brazil remained stable, while 52.2% of private-only physicians reported a decrease in their monthly earnings.<sup>16</sup> This negative economic impact seemed to have a greater effect on already vulnerable groups, including senior citizens.<sup>30</sup> This is reflected in the findings of our study, in which 96.3% and 81.3% of internists over 60 reported a reduced monthly earnings six months and one year after the COVID-19 pandemic, respectively.

There are several strengths and limitations in this study. To the best of our knowledge, this was the first study describing the working conditions of Indonesian internists during the COVID-19 pandemic. The nationwide survey covered a broad geographical scope with a large sample size, which represented all provinces in Indonesia. However, this was a self-reported survey, therefore the possibility of underreporting, recall bias, and social desirability bias was likely. Because the survey was held online, only internists who had access to computers or smartphones and internet



access could take part. Due to the anonymous nature of the survey, the association between the six-month and one-year results cannot be deduced. Moreover, the cause-and-effect relationship cannot be determined due to the cross-sectional study design.

## CONCLUSION

The COVID-19 pandemic has had a considerable impact on working conditions and earnings amongst internists in Indonesia. Most of the internists in this study were included in the COVID-19 response team and handled COVID-19 cases, including critically ill patients. Most participants also reported reduced working hours, number of patients, and monthly payments in six months and one year of the pandemic, especially female internists and internists under 40 years old. These findings may provide information to institutions in formulating strategies and tools to improve the working conditions and livelihoods of internists in Indonesia amidst the current pandemic and potential public health emergencies in the future.

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## COMPETING INTERESTS

The authors declare that they have no conflict of interest.

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