Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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An analytical cross-sectional study to describe the mental health status of doctors in three selected tertiary care hospitals and medical undergraduates, Colombo, Sri Lanka during the first wave of COVID-19 pandemic

Dear Sir,

COVID-19 pandemic had a significant impact on people's lives across the globe not only due to its physical effects, but mental, social, and financial effects not known to be caused by any other pandemic in the recent past. Health care workers (HCW) worldwide were affected by the same issues mentioned above and more due to additional risks imposed on them due to their work. A significant number of HCW succumbed to COVID-19, which worsened the psychological distress leading to anxiety, depression, burn out, insomnia and stress (Gupta and Sahoo, 2020). In addition to being subject to similar constraints like the general public due to the pandemic, medical undergraduates faced dramatic changes in their teaching, learning and assessment methods (Piryani et al., 2020).

During first wave of Sri Lanka, from 11th March 2020–17 th March 2021, there have been 88,524 positive cases and 534 related deaths. Since the first reported patient with COVID-19, Sri Lanka imposed strict regulations to prevent further worsening of the situation. Curfew was imposed in high-risk districts, including Colombo, for around 66 days. Only essential services were maintained with essential goods distributed by mobile services. Some other measures included quarantining of suspected individuals and their contacts with the assistance of armed forces, intelligent services, HCWs, media and government officials. This resulted in stigma and discrimination not only towards patients with COVID-19 but their family members and the HCWs who treated them (Erandi et al., 2020). Therefore, we aimed to describe mental health status of doctors in three selected main tertiary care hospitals and medical undergraduates in Colombo and its correlates during the first wave of the COVID-19 pandemic in Sri Lanka.

An analytical cross-sectional study was conducted among two groups. First group comprised of doctors of National Hospital for Sri Lanka (NHSL), Lady Ridgeway hospital for children (LRH) and National Institute for Infectious Disease of Sri Lanka (NIID). NHSL and LRH are leading hospitals providing health care services for adults and children coming from the whole of Sri Lanka. NIID provides care for patients with infectious diseases, and only patients with confirmed COVID-19 infection. The second group comprised of medical undergraduates of three senior most batches in Colombo Medical Faculty (CMF) situated near the main three hospitals. The final calculated sample size was 384 and further inflated to 422.4 to accommodate 10% drop out rate which was then rounded off to 423 from doctors and medical students. Disproportionate stratified sampling was used to select 423 doctors from the three hospitals. All 40 doctors from NIID were recruited for the study since it represented nation's reference hospital for COVID 19 where all patients with Corona virus infection were provided inward care during the first wave of pandemic. Proportionate number of students were planned to recruit from three senior batches of CMF. Ethical approval was obtained from the ethics review committee of Faculty of Medicine, University of Colombo (EC-20-EM06) and electronic consent was obtained from each participant. Google form based questionnaire with pretested questions on socio-demographic characteristics and views about the health and pandemic were used. GHQ-12 was used as the screening tool which was validated to Sri Lanka. Data were analyzed using Statistical Package for Social Sciences 21. Multivariate analysis was carried out using logistic regression to examine the relationships.

The study included 468 participants with an overall response rate of 55%. Among them 243(51.9%) were doctors and 57.9% were females. The mean age of the doctors was 34.54(SD=7.43) years, and the mean years in service was 7.73(SD=7.17) years. More than half (50.6%) of doctors were postgraduate trainees.

Amongst doctors 182(76.7%) were psychologically distressed. The mean GHQ score was 12.64(SD=4.54). Considering their working institution, 161,53 and 26 participants were from NHSL, LRH and NIID. Majority (n = 160, 65%) were worried about their health. However, 219 doctors (90.1%) were worried about the health of their loved ones and 220 (90.5%) thought that they were having a moderate or higher risk of acquiring COVID-19. Significant or some impact on income was perceived by 56% (n = 136) and 67.9% were worried about inability to attend their daily routine. Only 62(25.5%) perceived the response by the public as favourable towards the medical profession. Being a junior doctor was considered a risk factor for high exposure by 98(40.3%) doctors. Excessive information received on COVID-19 was deemed to be distressing by 92(37.9%) of doctors and 38 (15.6%) stated that they would not have worked due to risk if possible. Age less than 35 years($p = 0.039$), worry on inability to attend daily routine ($p = 0.010$) and impact on income (0.025) were significantly associated with the psychological distress of doctors.

The sample of medical undergraduates consisted of 143(63.6%) females. The mean age was 25.20(SD=1.34), and 78.2% of undergraduates were psychologically distressed which was higher than that of doctors. The mean GHQ score was 14.32(SD=6.67). Majority of distressed students were worried about their own health and health of their loved ones. Like doctors, undergraduates too perceived that their risk of contracting COVID-19 was high (143, 63.5%). Psychological distress was associated with impact on their daily routines($p = 0.000$). About half of the undergraduates were in view that excess news on pandemic as necessary while 24% perceived it distressing.

Medical staff are more likely to suffer from psychological disturbances in comparing to general population (Zhou et al., 2020). A study for doctors' mental health in Sri Lanka in 2008 and 2009 revealed that average GHQ-12 score was 1.9 and only 9.9% of the participants had scored above the cut off level for Psychological distress (Rodrigo et al.,

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2013). In comparison to that study, the observed psychological distress was significantly high during the first wave of COVID-19 pandemic. More than half of doctors in our study were in post graduate training. In the same pandemic, prevalence of depression, anxiety and acute stress disorder among postgraduate trainees in Pakistan were 26.4%, 22.6% and 4.4% respectively (Imran et al., 2020). Uncertainty about specific treatment and a vaccine during first wave may have contributed to a higher level of distress among participants of our study. Association of Psychological distress with less than 35 years of age group can be explained by inability to pursue their carrier on the postgraduate training. Association of impact on income with psychological distress may be due to disruption of out-of-hours-private-consultation of patients which is commonly practiced by the doctors in Sri Lanka (De Silva et al., 2013).

This study revealed that psychological distress among medical undergraduates was higher than that of the doctors. A prospective longitudinal study conducted in India among 269 medical undergraduates yielded baseline level of depression, anxiety and stress levels of 33.2%,21.2% and 20.7% respectively and levels of anxiety, stress were increased and depressive symptoms remained unaltered during the pandemic (Saraswathi et al., 2020). In a study conducted among medical undergraduates in Sri Lanka from July to August 2018 (before pandemic) reported that 40.4% had severe psychological distress (Wimberly et al., 2020). This elevated baseline psychological distress must have culminated with pandemic related changes and barriers for academic routines in resource constrained setting. Psychological distress was associated with interruption of daily routines of medical students. This may be due to absence of clinical training and worry about how they would perform at clinical examinations and the stress related to adapting to novel online teaching-learning activities (Piryani et al., 2020). In conclusion three quarter of doctors and slightly higher number than that of medical undergraduates were having psychological distress according to GHQ-12 score and it is higher compared to other countries in the region. Further assessment of these participants should be undertaken to ascertain the prevalence of definitive diagnosis. By the time of submission of this letter, Sri Lanka was gravely affected by third wave of COVID-19 pandemic. We would like to strongly recommend further research and timely interventions for the identified elevated psychological distress level of medical professionals and undergraduates in Sri Lanka.

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Declaration of Competing Interest

None.

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