

## ORIGINAL ARTICLE

# Effect of COVID-19 pandemic on the well-being and training of medical interns: an experience from a university of Eastern India

Smriti Madhusikta<sup>1</sup>, Ipsa Mohapatra<sup>2</sup>, Subodh Panoria<sup>3</sup>

<sup>1</sup>Post-graduate Trainee, Department of Community Medicine, Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha;

<sup>2</sup>Associate Professor, Department of Community Medicine, Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha;

<sup>3</sup>Intern, Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha.

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## Corresponding Author

Dr. Ipsa Mohapatra, Associate Professor, Department of Community Medicine, Kalinga Institute of Medical Sciences (KIMS), Bhubaneswar, Odisha 751016

E Mail ID: [dr\\_ipsa@yahoo.co.in](mailto:dr_ipsa@yahoo.co.in)



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## Abstract

**Background:** COVID-19 pandemic changed routines, with social distancing, quarantines, online classes, negatively affecting the mental health of the medical fraternity. **Objectives:** To assess the impact of COVID-19 pandemic on the mental well-being and training and identify stressors experienced by medical-interns. **Methods:** A cross-sectional study among 150 interns, from 1<sup>st</sup> June- 30<sup>th</sup> September 2021, using Google form with 3sections-demographics, stressors experienced during the pandemic and WHO well-being index; data analyzed using EPI INFO software en-US version7.2.3.1. **Results:** of the 150 interns, 138 responded. Mean-age was 25.19 ± 1.62SD years; 60.8% were males, 56.5% were hostellers,30% suffered from COVID-19. 78.9% stated “lack of supervision during postings”, 73.9%“postponement of NEET PG” and 60.8%“lack of learning opportunities” as reasons of stress. 65.2% had a good “WHO well-being index”. Their COVID-19 infectivity status had a statistically significant (p=0.004) association with WHO well being index. “Lack of learning opportunities”(p=0.02), “fear of contracting COVID-19”(p=0.03) & “limited time for PG preparation(p=0.01) were associated with their well-being. **Conclusion:** COVID-19 was associated with stress and poor mental health among the interns. Fear of disease, lack of regular duties and postponement of PG exams were factors leading to stress. Lack of learning opportunities, fear of contracting the virus were associated with poorer mental well-being.

## Keywords

COVID-19; Interns; Stress; Wellbeing

## Introduction

COVID-19, declared a pandemic by the World Health Organization [WHO], affected lives of thousands of people, slowing down global-economy, changing routines, social distancing, quarantines, online classes, increased usage of digital technology and work from home. (1,2,3) It's impact on the well-being of health-care workers [HCWs] has been documented. (4,5,6) The well-being and stress experienced by medical undergraduates [UGs] was a subject of concern as medical curriculum involves skills for patient treatment, commitment and responsibility. (7) The pandemic negatively affected the mental health of the UG students with an increasing prevalence of anxiety

and stress.(8) Countries had senior clerks graduating prematurely, being pulled from their rotations. (9) The Indian medical system is of five & half-years[pre-clinical, para-clinical, clinical and internship (12 months)]. Internship has compulsory clinical rotation and is a crucial period for UGs, when fresh minds are trained to enter the world of healers. (10) In India, most of the interns experienced disruption in their regular clinical rotational duties, due to engagement in COVID 19 duties. Added to the stress was a delay announced in their postgraduate [PG] entrance exams. This study was planned during the 2<sup>nd</sup> wave, when the medical fraternity including interns were providing their services.

## Aims & Objectives

Considering this situation, and the fact, that the impact of COVID-19 on stress and medical training schedule had not been researched, this study was planned

1. To assess the impact of COVID-19 pandemic on the mental well-being and training of medical interns
2. To identify the stressors experienced

## Material & Methods

**Study Type:** cross-sectional study

**Study Population:** The 150 interns of the MBBS 2015 batch (intern batch 2020-21)

**Study Area:** Kalinga Institute of Medical Sciences, Bhubaneswar

**Study Duration:** The duration of the study period was 4 months i.e from June 2021 to September 2021

**Sample Size calculation:** All 150 interns were approached. The students were explained about the objective of the study, informed that participation was voluntary and that confidentiality will be maintained. A total of 138 interns out of 150 gave consent and participated in the study. [Figure 1]

**Inclusion criteria:** All willing to participate in the study and giving consent.

**Exclusion criteria:** Those who no longer continued internship in the institute and continued as interns in other institutes were excluded from the study

**Strategy for collection:** Purposive sampling method and consecutive sampling technique was used for the study.

Data were collected via Google forms, comprising of 3 sections: demographics, stressors, WHO well-being index. Demographic variables like age, sex, present residence, COVID 19 status, family COVID infectivity status and preferred Postgraduate subject were asked. Section-2 which was stressors was developed by adapting existing resources, (11) and by conducting short focus group discussion with a small group of interns of the 2019-20 batch. Section 3 was a validated WHO well- being index scale, (12) which is a short self-reported measure of current mental wellbeing.

**Ethical Approval:** The study was approved by Institutional Ethics committee; letter no KIIT/KIMS/IEC/686/2021 dt 18.6.21.

**Consent:** The students were explained about the objective of the study, informed that participation was voluntary and that confidentiality will be maintained. Consent was obtained and those who gave consent were taken in the study.

**Data Analysis:** Data was compiled using Microsoft excel spreadsheet and the data analysis was done using EPI INFO software en-US version 7.2.3.1.

## Results

A total of 138 out of the 147 eligible study participants completed the survey, yielding a response rate of 93.88%. Of them, 65.9% were aged 20-25years; the mean age of

the study participants was  $25.19 \pm 1.62$  SD years. Of all the participants, 60.8% were males and 56.5% were residing in the hostel at the time of study. (Table 1)

A considerable proportion of the study participants (30%) were already infected and had been positive for COVID-19 whereas 38% of their family members had, had the infection prior to the study.

Amongst the participants 78.9% stated "lack of supervision during postings", 73.9% "postponement of NEET PG" and 60.8% "lack of learning opportunities" as one of the major reasons leading to stress. (Figure 2) 65.2% of the interns had a good "WHO well being index". Their COVID-19 infectivity status had a statistically significant ( $p=0.004$ ) association with WHO well being index, with 53.66% of those infected, while 26.8% of those without reporting a poorer score. (Table 2)

Among other factors that have been stated, "lack of learning opportunities" ( $p=0.02$ ), "fear of contracting COVID-19" ( $p=0.03$ ) & "limited time for PG preparation" ( $p=0.01$ ) were found to be statistically significantly associated with the wellbeing. (Table 3)

## Discussion

In this study, an attempt was made to assess the impact of COVID 19 pandemic on the mental well being and training of medical interns. Although a plethora of studies have been done to assess the psychological impact of the pandemic among the general population and HCWs, not many studies have been done among the medical interns, who have been most actively involved in the detection and care of COVID-19 patients and have been one of those, who have been most affected.

In the current study the mean age of the study participants was  $25.19 \pm 1.62$  SD years which is similar to a study done by Lis Campos Ferreira on mental health and illness of medical students and newly graduated doctors during COVID-19 in Brazil which showed the mean age to be 25.6 years.(13) 60.8% of the study participants were males in contrast to a study done by Chandrashekar B. Huded titled Psychological impact of COVID-19 on medical interns where majority of the respondents were females.(14) This may due to the fact that the current study was a single centre study whereas the other two were multi-centric. The same study stated that 60.6% of the interns were staying in the hostel which is similar to the current study which had 56.5% of the participants residing in hostel during the pandemic.(14) A considerable proportion of the study participants (30%), reported to have an attack of COVID-19 whereas 38% of their family members had had an episode of the same. A study done by Christophers et al. on Mental Health of US Medical Students during the COVID-19 Pandemic stated that students who reported symptoms of COVID-19 or who reported a close contact with symptoms constituted 40%.(15) 71% of the medical interns had a fear of contracting the virus; a study done by Maria M. C.

Carrascosa on Medical interns and COVID-19, showed 80.8% had the fear of being contaminated.(3) In the present study 60.8% of the interns stated the reason of their stress as the lack of learning opportunities due to COVID duties in comparison to a study done by Chandrashekar B. Huded where 85.9% of the interns felt that the pandemic had hampered their learning process and 72% felt that their performance in the postgraduate entrance examinations would be negatively affected due to the pandemic which is similar to the result of the present study where 71% of the participants were stressed due to limited time for PG preparation.(14) In the present study lack of learning opportunities, fear of contracting COVID-19 and limited time for PG preparation was associated with poorer mental well being whereas in a study done by Amy Dawel titled the effect of COVID-19 on mental health and well being in a representative sample of Australian adults stated that lower psychological wellbeing (WHO-5), was associated with job loss and financial distress, and overall work and social impairment due to COVID-19. The difference in findings might be due to the different study population. (16)

**Strengths:** COVID-19 pandemic negatively affected the mental health of the medical fraternity with an increasing prevalence of varied levels of anxiety and stress. Hence this study helped to assess the impact of COVID 19 pandemic on the mental well-being and training of medical interns and identify the stressors experienced by them during the pandemic.

### Conclusion

COVID-19 pandemic was associated with stress and poor mental health among the interns. The fear of the disease, lack of regular duties and postponement of PG exams were the identified factors leading to stress. Female interns had a poorer wellbeing index. The lack of learning opportunities and fear of contracting the virus were associated with poorer mental wellbeing.

**Implications:** The identified problems helped find solutions to reduce their stress during training. This study can further help develop coping strategies and these can be implemented as solutions into the medical training system for the doctors /interns at large.

### Recommendation

Pandemics have had a negative impact on the mental health of the population; COVID-19 taking a heavy toll on the medical fraternity at large with an increasing prevalence of varied levels of anxiety and stress. Hence this study helped to assess the impact of COVID 19 pandemic on the mental wellbeing and training of medical interns and identify the stressors experienced by them during the pandemic. These stressors can further be researched and solutions be identified. The ways identified in coping with mental health can be used in future during such pandemics for crisis management.

### Limitation of the study

Being a single-centre study, the generalizability of the study results may not be applicable, as different states followed different protocols for engagement of the category of HCWs. Response based on self-reporting of the respondents, cannot rule out self-reporting bias.

### Relevance of the study

The identified problems helped find solutions to reduce their stress during training. This study can further help develop coping strategies and these can be implemented as solutions into the medical training system for the doctors /interns at large.

### Authors Contribution

All authors contributed equally.

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**Tables**

**TABLE 1 Socio-demographic characteristics of the study participants (n=138)**

Socio-demographic characteristics	Frequency (in number)	Frequency (percentage %)
Age	20-25	91 (65.90)
	26-30	46 (33.30)
	>30	01 (0.70)
Sex	Males	84 (60.80)
	Females	54 (39.10)
Present place of residence	Hostel	78 (56.50)
	Home	48 (34.70)
	Self-accommodation	10 (7.20)
	Hospital campus	1 (0.70)
	Others	1 (0.70)

**TABLE 2 MENTAL WELL BEING OF THE PARTICIPANTS WITH SELECTED VARIABLES**

Selected Variables	WHO well being index		P-value
	Poor	Good	
Age group	20-25(n=91)	27(29.76) 64(70.33)	0.108
	26-30(n=46)	20(43.48) 26(56.52)	
	>30(n=1)	1(100) 0 (0)	
Sex	Male(n=84)	24(28.57) 60(71.43)	0.008
	Female(n=54)	24(44.44) 30(55.56)	
Present place of posting	Hostel(n=78)	26(33.33) 52(66.67)	0.07
	Home(n=48)	14(29.17) 34(70.83)	
	Self accommodation(n=10)	7(70) 3(30)	
	Others(n=1)	0 (0) 1(100)	
	Hospital campus(n=1)	1(100) 0(0)	
	Yes (n=41)	22(53.66) 19(46.34)	

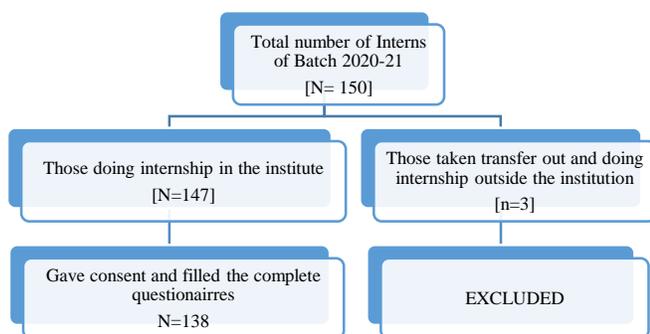
COVID 19 infectivity status	No(n=97)	26(26.8)	71(73.19)	
Family COVID 19 status	Yes(n=53)	24(45.28)	29(54.72)	0.06
	No(n=85)	24(28.24)	61(71.76)	

**TABLE 3: WHO WELL BEING INDEX WITH REASONS RELATED TO STRESS**

Reasons related to stress	WHO well being index		P-value
	Poor	Good	
Lack of supervision during postings	Yes(n=109)	35(32.11) 74(67.89)	0.29
	No(n=29)	13(44.83) 16(55.17)	
Lack of learning opportunities	Yes(n=84)	36(42.86) 48(57.14)	0.02
	No(n=54)	12(22.22) 42(77.78)	
Uncertainty regarding returning to normal clinical postings	Yes(n=96)	37(38.54) 59(61.46)	0.23
	No(n=42)	11(26.19) 31(73.81)	
Fear of contracting COVID 19	Yes(n=98)	40(40.82) 58(59.18)	0.03
	No(n=40)	8(20) 32(80)	
Disruption of duty during your choice posting	Yes(n=101)	38(37.62) 63(62.38)	0.34
	No(n=37)	10(27.03) 27(72.97)	
Limited time for preparing for PG exams	Yes(n=98)	41(41.84) 57(58.16)	0.01
	No(n=40)	7(17.50) 33(82.50)	
Starting residency during pandemic & potentially being exposed to COVID-19	Yes(n=102)	31(30.39) 71(69.61)	0.10
	No(n=36)	17(47.22) 19(52.78)	
Repeated COVID duties during the 1 <sup>st</sup> and 2 <sup>nd</sup> wave	Yes(n=96)	36(37.5) 60(62.5)	0.41
	No(n=42)	12(28.57) 30(71.43)	
Postponement of NEET PG 2021 of the senior batch	Yes(n=102)	36(35.29) 66(64.71)	1.00
	No(n=36)	12(33.33) 24(66.67)	

**Figures**

**FIGURE 1 SAMPLE SIZE OF THE STUDY**



**FIGURE 2 REASONS RELATED TO STRESS**

