

# Mental Health of Foreign Medical Graduates in Tamil Nadu, India: A Mixed-methods Study

V KARTHIKEYAN<sup>1</sup>, RAGHUNATH ELANGO<sup>2</sup>

## ABSTRACT

**Introduction:** Over the last five years in India, there has been a three-fold increase in the number of candidates taking the Foreign Medical Graduate Examination (FMGE). Foreign Medical Graduates (FMGs) have recently experienced the Coronavirus Disease-2019 (COVID-19) pandemic and wars/internal conflicts in the countries where they study.

**Aim:** To assess the mental health status of FMGs and analyse the associated socio-demographic, economic, and academic factors, as well as the impact of COVID-19 on their mental health.

**Materials and Methods:** This explanatory mixed-method study utilised a quantitative method (Phase 1- Self-administered questionnaire GHQ-12) followed by a qualitative method {Phase 2- Focus Group Discussion (FGD)}. The study included 169 FMGs doing their internship (academic year 2022-23) at Government Medical College Krishnagiri, Tamil Nadu, India, and their colleagues/batchmates who were willing to participate

in the study. Descriptive statistics and student t-test were used to analyse the variables.

**Results:** In the present study, 99 (58.6%) study participants were male, 130 (76.9%) were in the age group of 23-25 years, and 114 (67.5%) belonged to the upper socio-economic class. About 80 (47.3%) respondents scored higher than the overall mean GHQ-12 score, indicating mental distress. FMGs who had not yet joined the internship reported significant mental health issues compared to those currently in internship. FGD participants felt a lack of confidence in patient care, academic burden, financial burden, family bereavement, and personal health issues were the impacts of the COVID-19 pandemic on their mental health.

**Conclusion:** Almost half of the FMGs in the present study were under stress, which could be attributed to the financial burden in the family, lack of academic confidence, and personal loss during the COVID-19 pandemic.

**Keywords:** Coronavirus disease-2019, Depressive disorders, Internship, Stress disorders

## INTRODUCTION

The World Health Organisation conceptualises mental health as a state of mental well-being that enables people to cope with the stresses of life, realise their abilities, engage in activities, learn effectively, work well, and contribute to their community [1]. Medical students, who are exposed to hectic academic activities, prolonged course durations, and highly competitive exams, are at risk of compromised mental health [2,3]. In India, the number of FMGs appearing for FMGE has been increasing over the last decade [4].

The COVID-19 pandemic had a severe impact on the education of the majority of medical students. The stress and anxiety during the pandemic were relatively higher than usual, indicating a generalised deterioration of mental health [5]. FMGs who pursued the course during the COVID-19 pandemic also faced restrictions during lockdown, which in turn affected their academics. The differences in academic and assessment methods between countries might also impact their performance. The pass percentages in FMGE for the years 2021, 2020, and 2019 were 24.5%, 16.4%, and 25.7% respectively [4]. Additionally, it often takes multiple attempts to clear the FMGE. All these factors warranted an assessment of the mental health of FMGs returning to India.

Research work exploring the mental health of FMGs returning to India is lacking. The present study aimed to assess the mental health status of FMGs and evaluate the socio-demographic, economic, and academic factors associated with it. The impact of COVID-19 on the mental health of FMGs was also assessed.

## MATERIALS AND METHODS

It was an explanatory mixed-method study conducted from September 2022 to February 2023. The study utilised a quantitative method (Phase 1- Self-administered questionnaire GHQ-12) followed by a qualitative method (Phase 2- FGD). The study participants

included FMG interns of the academic year 2022-23 at Government Medical College Krishnagiri, Tamil Nadu, India, along with their willing colleagues/batchmates.

**Sample size:** Based on a meta-analysis by Dutta G et al., which reported a pooled prevalence of depression among Indian medical students at 50% [6], the present study determined a sample size of 169 using a prevalence of 50% and a relative error of 15%.

The study was conducted following the guidelines of the Helsinki declaration and after obtaining clearance from the Institutional Ethics Committee (EC/NEW/INST/2023/15250). Data was anonymised to ensure confidentiality, and participants were given the option to seek help for any problems identified during the study.

**Inclusion criteria:** FMG interns of the academic year 2022-23 were included.

**Exclusion criteria:** Interns from the previous academic year who had not yet completed their internship (18 members) were excluded.

## Procedure

**Phase 1:** A pre-designed and pre-tested questionnaire, along with the 12-item General Health Questionnaire (GHQ-12), was used to assess the mental health status of 169 FMG volunteers [7,8]. This questionnaire can assess non psychotic psychiatric disorders like depression and anxiety. Each item is rated on a bimodal scale (not at all-0, no more than usual-0, rather more than usual-1, much more than usual-1). The total score ranges from 0 to 12 [8,9]. The mean GHQ score was used as a cut-off point to determine the respondents' level of mental health, with a higher score indicating poorer mental health [7,8]. The questionnaire also included socio-demographic, economic, and academic details.

**Phase 2:** Based on the findings from Phase 1, guidelines for FGDs were developed. Two FGDs were conducted among 10 purposively

selected FMGs to explore the impact of COVID-19 on their mental health. The selection of these 10 FMGs was based on either their personal experience or their family members' experience with COVID-19.

## STATISTICAL ANALYSIS

The quantitative data was analysed using the Statistical Package for Social Sciences (SPSS) version 16.0. Descriptive statistics were employed to analyse the socio-demographic, economic, and academic details. The association between variables and mean GHQ-12 score was assessed using the Student t-test. The FGDs were transcribed, and manual content analysis was conducted to generate themes.

## RESULTS

Out of 169 participants, 99 (58.6%) were male, and 70 (41.4%) were female. The majority of participants, 130 (76.9%), were in the age group of 23-25 years. Most of them, 82 (48.5%), had a family size of four. 101 (59.8%) were urban residents, while 68 (40.2%) were rural residents [Table/Fig-1].

The majority, 101 (65.1%), completed their medical graduation in the Philippines. 19 participants (11.2%) completed their medical graduation in Russia, and 14 (8.3%) completed it in China. The remaining 35 participants (20.7%) completed their degrees in countries like Armenia, Ukraine, Kyrgyzstan, Guyana, Georgia, Moldova, and Mauritius [Table/Fig-1].

About 37 participants (21.9%) reported taking more than one attempt to clear FMGE. Out of the total respondents, 10 (5.9%) have not cleared the FMGE. Around 137 (81.1%) are currently doing an internship [Table/Fig-1]. A total of 125 participants (74%) reported that their academic activities were impacted by the COVID-19 pandemic. Eleven (6.5%) participants reported increased screen time. Social media and mobile games were the most commonly reported mobile usage activities [Table/Fig-1].

S. No.	Variables	N=169 (100%)	Mean GHQ-12 score (SD)	p-value
1	<b>Gender</b>			
	Male	99 (58.6%)	5.25 (3.8)	0.22
	Female	70 (41.4%)	5.9 (3.9)	
2	<b>Age group (in Years)</b>			
	23-25	130 (76.9%)	5.36 (3.8)	0.602
	26-30	39 (23.1%)	6.18 (4.1)	
3	<b>Socio-economic status</b>			
	Upper class	114 (67.5%)	5.42 (3.8)	0.642
	Upper middle class	16 (9.4%)	5.06 (3.7)	
	Middle class	39 (23.1%)	6.0 (4.2)	
<b>Residence</b>				
4	Urban	101 (59.8%)	5.6 (3.8)	0.735
	Rural	68 (40.2%)	5.4 (3.9)	
5	<b>Country studied</b>			
	Philippines	101 (65.1%)	5.11 (3.8)	0.65
	Russia	19 (11.2%)	5.26 (3.8)	
	China	14 (8.3%)	7.14 (4.1)	
	Others	35 (20.7%)	6.58 (3.7)	
6	<b>Whether cleared FMGE</b>			
	Yes	159 (94.1%)	5.42 (3.8)	0.176
	No	10 (5.9%)	7.10 (4.1)	
7	<b>No. of attempts to clear FMGE</b>			
	1 <sup>st</sup> attempt	132 (78.1%)	5.26 (3.8)	0.076
	>1 attempts	37 (21.9%)	6.42 (3.8)	

<b>Coronavirus Disease-2019 (COVID-19) had impacted your academics?</b>				
8	Yes	125 (74%)	5.82 (3.9)	0.095
	No	44 (26%)	4.68 (3.6)	
<b>Currently doing internship</b>				
9	Yes	137 (81.1%)	5.22 (3.7)	0.036
	No	32 (18.9%)	6.81 (4.1)	

**[Table/Fig-1]:** Association between socio-demographic, academic variables and mean GHQ-12 score (student t-test).

The overall mean GHQ score among the study participants was observed as 5.5 with a standard deviation of 3.8. Since the mean value is 5.5, the authors considered 6 as the cut-off point to determine mental health status. In the present study, 80 (47.3%) respondents scored above the cut-off point, suggesting that the mentioned percentage of respondents were in mental distress.

The mean GHQ-12 score was significantly higher ( $p < 0.05$ ) among those who are currently not in an internship period compared to those who are currently doing their internship. The present study could not find any significant association between other socio-demographic, economic, academic variables, and mean GHQ-12 score [Table/Fig-1].

In the present study, 43 (43.5%) male and 37 (52.8%) female respondents scored above the overall mean GHQ-12 score. About 20 (51.3%) respondents in the 26-30 years age group, 22 (56.4%) respondents in the middle class, 9 (64.3%) respondents studied in China, 7 (70%) respondents who have not cleared FMGE, and 21 (56.8%) respondents who took more than one attempt to clear FMGE scored above the overall mean GHQ-12 score, indicating that they are in mental distress [Table/Fig-2].

S. No.	Variables	Frequency n (%) GHQ score < overall mean GHQ score (N=89)	Frequency n (%) GHQ score > overall mean GHQ score (N=80)	Total
1	<b>Gender</b>			
	Male	56 (56.5)	43 (43.5)	99
	Female	33 (47.2)	37 (52.8)	70
2	<b>Age group (in Years)</b>			
	23-25	70 (53.8)	60 (46.2)	130
	26-30	19 (48.7)	20 (51.3)	39
3	<b>Socio-economic status</b>			
	Upper class	62 (54.4)	52 (45.6)	114
	Upper middle class	10 (62.5)	6 (37.5)	16
	Middle class	17 (43.6)	22 (56.4)	39
4	<b>Residence</b>			
	Urban	50 (49.5)	51 (50.5)	101
	Rural	39 (57.3)	29 (42.7)	68
5	<b>Country studied</b>			
	Philippines	54 (53.4)	47 (46.6)	101
	Russia	11 (57.9)	08 (42.1)	19
	China	05 (35.7)	09 (64.3)	14
	Others	19 (54.3)	16 (45.7)	35
6	<b>Whether cleared FMGE</b>			
	Yes	86 (54)	73 (46)	159
	No	03 (30)	07 (70)	10
7	<b>No. of attempts to clear FMGE</b>			
	1 <sup>st</sup> attempt	73 (55.3)	59 (44.7)	132
	>1 attempts	16 (43.2)	21 (56.8)	37
8	<b>COVID-19 had impacted your academics?</b>			
	Yes	63 (50.4)	62 (49.6)	125
	No	26 (59)	18 (41)	44

9	Currently doing internship			
	Yes	76 (55.5)	61 (44.5)	137
	No	13 (40.6)	19 (59.4)	32

**[Table/Fig-2]:** Distribution of variables based on the cut-off point (Overall mean GHQ Score).

In the FGD, the present study aimed to explore the impact of the COVID-19 pandemic on their mental health. As they mostly completed their medical graduation through online lectures, they reported a lack of self-confidence in patient care. Academic/financial burden and family bereavement had a huge impact on their mental health. They also reported personal health issues in the post-COVID-19 period [Table/Fig-3].

Categories	Themes
Online mode of classes	Lack of self-confidence in patient care
Less clinical exposure	
No contact/Not able to interact with patients	
Not able to complete the course on time	Academic burden
2 years internship for those who completed course in online mode	
Worry about the future and career	
Even after clearing the FMGE unable to complete the internship process due to travel restrictions	Financial burden
Lack of income to family members	
Financial dependence on parents for extended time period	Family bereavement
Death of parents/family members to COVID-19	
Health issues of family members due to COVID-19	Personal health issues
Physical and mental health issues post COVID-19	

**[Table/Fig-3]:** Impact of COVID-19 Pandemic on mental health of FMG's-FGD findings.

## DISCUSSION

In the present study, 47.3% of the respondents scored above the cutoff point for the mean GHQ-12 score (>6), indicating that they were in mental distress. Similar findings were reported in a cross-sectional study by Jafari N et al., on the mental health of medical students in Iran. In their study, 49.5% of the students scored above the threshold on the GHQ-12 (>3.5), and the level of training significantly contributed to psychological distress [9]. In the present study, the mean GHQ-12 score was also significantly higher among those who were not currently in an internship period compared to those who were currently doing their internship.

Another study titled "Pattern and correlates of depression among medical students: An 18-month follow-up study" by Mohammed S et al., in Kerala, India, showed that factors such as the course not being of the student's choice, having an unemployed parent, alcohol use, and male gender were significantly associated with depression. Other socio-demographic variables were not significantly associated with depression [10]. Similarly, the present study did not find a significant association between socio-demographic, economic, academic variables, and the mean GHQ-12 score.

A meta-analysis by Dwivedi N et al., (2014-18) found that the pooled prevalence of depression among medical students in India, using a random effects model, was 40%. Girls had a slightly higher risk of depression than boys [11]. However, the present study did not find a significant association between gender and psychological distress.

A systematic review by Cuttilan AN et al., on mental health issues in Asian medical students (2000-2015) showed that the pooled prevalence of depression and anxiety disorders was 11% and 7%, respectively [2]. In contrast, a systematic review and meta-analysis conducted by Jia Q et al., to assess mental health among medical students during COVID-19 revealed that the pooled prevalence of depression and anxiety was 37.9% and 33.7%, respectively [12].

These variations in prevalence patterns could be attributed to increased psychological distress due to the COVID-19 pandemic.

A cross-sectional study by Sidhana S et al., among medical students in New Delhi showed that factors such as gender, type of social support, family structure, and education of parents were not significantly associated with the prevalence of depression, which is consistent with the findings of the present study [13].

A meta-analysis conducted by Puthran R et al., among medical students shows that depression affects almost one-third of medical students globally, but treatment rates are relatively low [14]. Similarly, in a systematic review by Rotenstein LS et al., the estimate of the prevalence of depression or depressive symptoms among medical students was 27.2%, and the prevalence of suicidal ideation was 11.1% [15]. In contrast, the present study among FMGs returning to India shows that almost half of the FMGs are under stress, which could be attributed to the COVID-19 pandemic.

A study done by Venkatarao E et al., in Orissa showed that higher scores of depression, anxiety, and stress were associated with female gender, lower semester, younger age, and non-smokers [16]. Similarly, in a narrative review of previously published research conducted by Mirza A et al., female medical students were found to have a higher prevalence of depression (31.5%) [17]. However, the present study shows no significant association between age, gender, and other socio-demographic variables.

About 74% of participants in the present study reported that they had an impact on their academic activities due to the COVID-19 pandemic. During the pandemic, FMGs completed their courses mostly through online lectures while adhering to COVID-19 appropriate behavior. FGD participants expressed that they lost their self-confidence in patient care as they couldn't interact with patients and had very few bedside clinics. These findings can help teachers in devising the internship curriculum accordingly.

The National Medical Commission (NMC) has set various competencies for Indian Medical Graduates (IMGs) who are expected to fulfill roles such as clinician, leader, communicator, lifelong learner, and professional [18]. FMGs returning to practice in India should also acquire these competencies to effectively serve the community. Thus, the mental health of FMGs needs to be addressed more carefully.

## Limitation(s)

The majority of participants (81%) were currently doing an internship. Only 32 participants (19%) who were yet to join an internship participated in the study. This study would have been more significant if a higher proportion of FMGs who have not cleared the examination were included.

## CONCLUSION(S)

Almost half of the FMGs were found to be worried, unhappy, and agitated, highlighting a neglected aspect of psychology that requires immediate attention and care. Various factors such as the pandemic situation, prolonged course duration, highly competitive exams, financial dependence/burden on the family, personal loss, and lack of confidence in clinical skills due to the online mode of classes have contributed to mental stress. To address this morbidity, counseling services must be made available and accessible.

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**PARTICULARS OF CONTRIBUTORS:**

1. Assistant Professor, Department of Community Medicine, Government Medical College, Krishnagiri, Tamil Nadu, India.
2. Assistant Professor, Department of Community Medicine, Government Medical College, Krishnagiri, Tamil Nadu, India.

**NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:**

V Karthikeyan,  
Door No. 2/23, VSKN Nagar, Kaveripattinam, Krishnagiri-635112, Tamil Nadu, India.  
E-mail: karthikeyanveerabadran@gmail.com

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