

COVID-19 Pandemic a Modifier of Social and Mental Health Issues among Researchers in India

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ABSTRACT

Background: This study aimed to understand the psychosocial impact of the prevailing pandemic and various risk factors associated with adverse mental health outcomes among the scientific community.

Methods: An online survey using semi-structured questionnaires was conducted by researchers using Google forms. A total of 640 responses were received from participants of either sex. Depression levels were assessed using the PHQ-9. Statistical analysis was performed using a standard statistical package (SPSS IBM Version 21).

Results: The pandemic affected both the personal and professional lives of the researchers. Job loss and non-payment/partial salary payments were observed. A substantial reduction in working hours and productivity to a greater extent was also seen. Diverse concentrations of depression were observed in more than 50% of the study participants. The severity of depression was higher among females, students, and researchers due to job loss, no/partial payment of salary, and short tenure.

Conclusions: To combat psychosocial issues of researchers and scientists, psychosocial crisis prevention and intervention models should be urgently developed by various stakeholders. Further extension of the existing projects and provision of grants would help researchers cope with financial losses and employability.

Keywords: Pandemic; Depression; Occupational hazard; PHQ9; Researchers; Psycho-socio

Abbreviations: PHQ-9: Patient Health Questionnaire-9; COVID-19: Coronavirus Disease-19; WHO: World Health Organization; SARS CoV: Severe Acute Respiratory Syndrome Coronavirus; PIs: Project Investigators; OR: Odd Ratio; CI: Confidence Interval

INTRODUCTION

Anthropological society is unquestionably going through the most important phase of this era, during which the entirety of its existence is being tested by the rapid spread of the novel SARS-CoV-2 virus over the world [1]. In Wuhan, China, the first incidence of a human infection was found in December 2019. The World Health Organization (WHO) proclaimed the disease to be a public health emergency of worldwide concern on January 30, 2020, and more global cooperation to stop the rapid spread of the COVID-19 pandemic were requested.

Unprecedented measures have been taken globally to further control the virus's spread. Complete lockdown of the nation, with the exception of critical services, was proclaimed in India. Public transportation, community spaces, tight community supervision, isolation, and special treatment for infected and suspected cases were all completely shut down.

Due to a sudden disruption in global supply and demand chains, the world economy saw a sharp decline in all economic activities. According to a number of research findings, the current 21st century is also a time when a growing epidemic of mental diseases is occurring, in addition to COVID-19 [2].

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In addition to physical hardship, lockdown has numerous negative effects on people's mental health and population wellbeing.

The psychological impact of isolation can range from immediate consequences, such as irritability, anxiety about getting sick and infecting other family members, frustration, loneliness, etc., to extreme consequences, such as suicides [3,4].

Global COVID-19 health crisis has had a quick influence on the scientific landscape, including work patterns and educational programs, as a result of partial or entire shutdowns of the institutions globally. Today, many scientists may feel particularly "stuck" because they are unable to do their job because of limitations. For young researchers, who typically have short-term contracts and may worry about their future prospects, uncertainty in the private sector of employment and in educational institutions, as well as the need to care for children as a result of school closures, can be stressful [5].

There is numerous research on the psychological effects of the epidemic among different age groups [6]. There haven't been many studies done on the mental health of scientists and researchers dealing with the epidemic, though. The current study made an effort to comprehend both the psycho social effects of the pandemic and the many risk variables linked to poor mental health outcomes among the scientific community [7].

MATERIALS AND METHODS

Study design

For the current study, a web based cross-sectional survey design was used. The participants' written consent was obtained online from each one of them. Information confidentiality and anonymity were guaranteed. The participants were also urged to share the poll link with as many of their connections as possible. After clicking the link to the survey, they were automatically taken there, albeit it was entirely up to the participant to decide whether he wanted to fill it out or not. As a result, volunteer respondents have completed the survey. The survey tool was created just in English; no other languages were added. Therefore, the candidates who could understand English and had a working internet connection took part in the study. The responses came from different parts of India. Through the information about socioeconomic questionnaire, and demographic factors as well as inquiries about stress, the perceived effects of lockdown, and work from home options were gathered.

Data collection

A web based survey distributed *via* emails was used to gather information between September 17 and September 27, 2020, on a variety of topics relating to the impact of lockdown and mental health. Several Department of Biotechnology, Government of India, beneficiaries received the link to the questionnaire. The time period under investigation coincides with the apex of the pandemic and the widespread use of work from home schedules in Indian academic and research institutes. The survey's questions was created using Google Forms[®], a free online tool.

Depression status

The Patient Health Questionnaire (PHQ9) was used to evaluate the presence of depression. The diagnostic and statistical manual of mental disorders, fourth edition, American Psychiatric Association, 2000, contains nine items on a Likert scale that evaluate symptoms of depression. All of the questionnaire's items began with the question, "Over the last two weeks, how often have you been troubled by the following problems?" The alternatives for the respondents' responses ranged from 0 ('Not at all') to 3 ('Nearly every day').

Utilizing scoring of the various responses in accordance with the PHQ-9 questionnaire's instructions, the results were analyzed and interpreted [8]. Individuals were scored, and according to the results, they were divided into four categories: Mild depression (scores 5-9), moderate depression (scores 10–14), moderately severe (15–19), and severe depression (scores 20–27). Individuals with scores below 5 are regarded as controls and do not exhibit any signs of depression.

Statistical analysis

The difference in participant distribution between the various groups was compared using bivariate statistical techniques, such as the *Chi-square* test. To investigate the potential risk of several factors for creating stress and depression, logistic regression analysis was used. The Statistical Package for Social Sciences (SPSS) version 21.0 software from IBM Corp. was used to conduct the statistical analyses. All of the P (two-tailed) values at 0.05 were deemed significant.

RESULTS

Baseline characteristics of the study participants were represented in the Table 1. A total of 640 participants of either sex participated in the present study. Of 640 participants 67% (427) of them were males and 33% (209) were females. 90% of the participants were in the age range 31-60 years as shown in the Table 1. Females were observed to be higher in the younger age group as compare to the males. Most of the participants were residing in the urban areas. On analysing the current position of the participants, it was observed that 89% of the participants were either Principal investigator or faculty members whereas 11.1% were researchers or students in various research courses. The number of males as faculty and PIs were comparatively higher than females whereas females were more in numbers as researchers or student's category.

Half of the participants submitted that they have three or more than 3 dependents on them, 46% have 1-2 dependents and only 4% of the total participants said that they don't have any dependents on them. Majority of the participants have all groups of dependents on them followed by child and adolescents, child and elderly respectively. Children, adolescents and elderly dependents are more with female participants whereas all age dependents were more on males as shown in the Table 1. On analysing the distribution of participants whether they are getting their salary or not it was observed that 82.2% of the participants are getting their salary, 10.6% were paid partially and 7.2% were not getting paid during the time of lockdown related to COVID-19 outbreak. Most of the male participants were either getting paid fully or partially. On the other hand,

75% of the females were getting paid fully, 11.1% were paid partially and 14.4% of them were not getting paid. These differences were found to be statistically significant. More than 60% of the participants were residing in a nuclear family followed by joint family (27.3%) and living alone or with friend (12%). The findings were consistent among the groups.

Table 1: Baseline	characteristics (of the	study	partici	oants.
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Variables	Total N (%)	Males	Females	Chi-square (P-value)
Number (%)	640	427 (67)	209 (33)	-
Age group (in years)				
20-30	29 (4.5)	7 (1.6)	22 (10.6)	26.25 (0.00)
31-50	437 (68.2)	304 (71)	132 (63.5)	_
51-60	144 (22.5)	96 (22.4)	46 (22.1)	_
>60	30 (4.7)	22 (5.1)	8 (3.8)	_
Residence setup				
Rural	135 (21.1)	99 (19.4)	36 (17.28)	2.7 (0.9)
Urban	506 (80)	330 (82)	172 (82.7)	_
Current position				
PI/Faculty	566 (89)	407 (95)	159 (76.4)	48 (0.000)
Researcher/Student	71 (11.1)	22 (5)	49 (25)	_
Dependents				
None	23 (4)	6 (1.4)	17 (8.6)	49.4 (0.000)
1-2	285 (46.4)	167 (40)	118 (60)	_
≥ 3	306 (50)	244 (58.5)	62 (31.5)	_
Age group of dependents				
Child+Adolescents	130 (20.4)	70 (16.3)	60 (29)	45.8 (0.000)
Child+Elderly	43 (7)	23 (5.4)	20 (9.6)	_
Child+Adolescents+Adults +Elderly	401 (63)	308 (72)	93 (44.7)	-
Elderly	63 (10)	28 (6.5)	35 (17)	_
Getting salary during lockd	own			
Yes	526 (82.2)	369 (86)	155 (74.5)	(0.000)
No	46 (7.2)	22 (5.1)	23 (11.1)	_
Partially	68 (10.6)	38 (9)	30 (14.4)	_
Residing with				

Alone/Friends	75 (12)	48 (11.2)	27 (13)	0.676
Joint family	174 (27.3)	121 (28.2)	53 (25.5)	
Nuclear family	388 (61)	260 (61)	128 (61.5)	

On analysing the area of research of the researchers it was observed that more than three fourth i.e., 76.4% of the total participants were from the life sciences background, 7% dry labs, 6.3% from field sciences and 10% from other sciences. More than half of the participants submitted that only essential services staff was allowed onsite rest the entire institute has been entirely closed down. 38% reported that their institutions were partially operational with limited staff. Further 62% of researchers reported that they were exempted from the closure and were allowed to travel to their respective work-sites. 30% reported that they were not allowed to travel to their work locations. Due to closures and travel restrictions the impacts of the lockdown and work from home in response to COVID-19 pandemic are divided into economic impact, impact on working hours, and psychological impact along with perceived positive and negative impacts.

Economic impact of the pandemic on the researchers

It was observed that overall job loss among the study participants was 5.5%. Further, on analysing the job loss within the researchers it was observed that job loss was comparatively higher among students and other researchers as compared to the faculties and PIs. 23% of the student researchers have lost their jobs during the pandemic whereas among PIs only 3.3% of them have job loss. These differences were found to be statistically significant (X^2 p<0.00). In addition to this, on analysing whether the participants were getting paid their salary during the pandemic it was observed that 82% of them were getting their full salary, 11% were getting partial salary and 7.2% of them were not getting their salary among total participants. Further, it was observed that 87.5% of PIs were getting full salary, 9.5% and 3% were getting partial and no salary respectively. In contrary to this more than 40% of the students and researchers were not getting paid while 20% of them were paid partially and only 39.4% of them were getting their full salary as shown in the Figure 1.



Impact on research progress and working conditions

Present study established that, there has been a considerable impact of institutional closure and sudden transformation of the work set up on researchers. Significant dip in the working hours as shown in the Figure 2 was observed. The duration of the working hours' changes dramatically after the lockdown. Before lockdown almost 75% of the researchers worked for 6-10 hours whereas majority of the researchers during lockdown worked for 4-8 hours only. In contrast, researchers working for more than 12 hours have increased.



Similarly, considerable impact of the pandemic on scientific community in terms of research patterns, teachings, trainings technical communications and collaborations, and was also realized in the study. There was a significant decline in the research related activities and teaching, whereas not much differences in devoting the time for administrative duties was observed. Most of the participants reported that frequent use of digital platforms for various research related activities were on rise during these times as shown in the Figure 3.



Psychological impact on the researchers

Out of 640 participants, more than half of them were experiencing various degrees of depression, wherein 36%,

Psychological impact on the researchers

Out of 640 participants, more than half of them were experiencing various degrees of depression, wherein 36%, 13.4% and 5.4% have experienced milder, moderate and moderately severe to severe depression respectively. Further, sex wise

distribution of the depression levels reveals that milder form of depression is more among males and moderate to moderately severe and severe depression is comparatively higher among females as shown in the Table 2.

Table 2: Sex wise distribution of the levels of depression among st	tudy participants.
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Stress level	Total N (%)	Males N (%)	Females N (%)
Normal	290 (45.31)	202 (47.3)	88 (42.1)
Mild	229 (36)	158 (37)	71 (34)
Moderate	86 (13.43)	46 (11)	37 (18)
Moderate severe+Severe	35 (5.4)	21 (5)	13 (6.2)

Binary logistic regression analysis (Odd ratio analysis)

In order to understand the factors contributing towards depression binary logistic regression was carried out and the findings were presented in the Table 3. Age group, sex, field of study, designation, locality of residence, number and age group of dependents, salary, job loss, family type, institutional closure, travel to work locations, tenure and working city were tested in the binary logistic regression analysis for mild, moderate and severe level of depression. As shown in Table 3 older age has shown significant reduced risk for both moderate and severe form of the depression. However, based on sex females are at higher risk for developing various form of depression. The study reveals almost 2-fold ((OR=1.8 (95% CI=1.07, 2.9)) significant increased risk among females for having milder form of depression whereas 4-fold ((OR=4 (95% CI=2, 8.5)) significant increased risk was observed for having moderate and severe form of depression. Researchers and students have 2-fold significant increased risk for moderate depression ((OR=2.2 (95% CI=1.12,

 Table 3: Results of binary logistic regression analysis.

4.4)) and 5-fold ((OR=5 (95% CI=2.21, 11.6)) significant increased risk for having moderately severe to severe form of depression.

Living in urban have also shown slight risk for mild and moderate depression levels though the findings were not found to be significant as shown in the Table 3.

Having dependents of higher age groups as compared to children's having significantly reduced risk for both moderate and severe forms of depression. Participants who were not getting their salary were at more risk for developing moderate ((OR=4 (95% CI=1.69, 9.21)) and severe ((OR=3.3 (95% CI=1, 11.06)) forms of depression. Job loss was also posing more than 3-fold, 6-fold significant increased risk for moderate ((OR=3.26 (95% CI=1.27, 8.30)) and severe ((OR=6 (95% CI=2.02, 17.6)) forms of depression among researchers. Closure of institutes during the pandemic had significantly reduced the risk for various form of depression as shown in the Table 3.

Variables	Category	Case I ¹ OR (CI)	p-value	Case II ² OR (CI)	p-value	Case III ³ OR (CI)	p-value
Age group	Young adults ^{&}	0.8 (0.55-1.19)	0.29	0.49 (0.27-0.89)	0.01*	0.2 (0.06-0.69)	0.01**
	Older adults ^{&} Elderly						
Sex	Male ^{&}	1.01 (0.69-1.48)	0.93	1.76 (1.07-2.9)	0.02*	4 (1.89-8.5)	0.00**
	Female						
Field of study	Life sciences ^{&}	0.78 (0.52-1.19)	0.26	0.52 (0.27-1.01)	0.05	1.07 (0.47-2.39)	0.86
	Other sciences						
Role	Form of	0.95 (0.51-1.78)	0.89	2.23 (1.12-4.4)	0.02*	5 (2.21-11.59)	0.00**
Residence	Rural&	1.5 (0.97-2.32)	0.06	1.5 (0.8-2.7)	0.19	0.76 (0.34-1.67)	0.50
	Urban						
Dependents	1-2 ^{&}	1.26 (0.89-1.79)	0.18	0.91 (0.56-1.47)	0.72	0.78 (0.38-1.8)	0.51

	>3						
Age group of dependents	Children +Adolescents ^{&}	0.71 (0.31-1.65)	0.43	1.25 (0.43-2.93)	0.80	1.27 (0.34-4.72)	0.71
	Elderly						
	Children ^{&}	0.68 (0.43-1.07)	0.09	0.12 (0.06-0.22)	0.00**	0.10 (0.04-0.25)	0.00**
	Others						
Salary	Yes ^{&}	1.8 (0.87-4.00)	0.10	3.95 (1.69-9.21)	0.00**	3.3 (0.99-11.06)	0.05*
	No/Partial						
Job loss	Yes	1.27 (0.52-3.11)	0.59	3.26 (1.27-8.30)	0.01**	6 (2.02-17.6)	0.00**
	No ^{&}						
Family type	Nuclear&	0.92 (0.6-1.38)	0.69	1.40 (0.82-2.42)	0.21	1.1 (0.49-2.45)	0.81
	Joint						
	Alone and friends	0.68 (0.38-1.21)	0.19	1.03 (0.53-2.07)	0.91		
Institution	Yes&	1.04 (0.71-1.5)	0.83	0.47 (0.27-0.82)	0.00**	0.68 (0.31-1.48)	0.33
closure	No						
Travel	Yes	1.46 (0.99-2.15)	0.05	1.05 (0.59-1.85)	0.85	1.60 (0.74-3.4)	0.22
	No ^{&}						
Tenure	Yes&	1.3 (0.89-1.95)	0.16	1.85 (1.08-3.18)	0.02*	1.6 (0.79-3.26)	0.18
	No						
Working city	Home ^{&}	0.80 (0.56-1.13)	0.22	0.8 (0.53-1.4)	0.57	1.82 (0.85-3.87)	0.11
	Other						

Note: ¹=Normal vs. Mild; ²=Normal vs. Moderate; ³=Normal vs. Moderate severe+Severe; [&]: Referent category; ^{*}: p<0.05; ^{**}: p<0.01

Perceptions related to the impact of new work setup

Positive impacts of working from home: Several semi-structured questions were posed in an effort to better understand how researchers felt about the new work arrangement. The majority of participants (70%) stated that the new work environment has aided in the creation of manuscripts and editorials. More than half agreed that having flexible work hours has given them more time for their families and child care. According to 41%, 34%, 28%, and 18% of respondents, it helps them write research grants and proposals, engage with students and other researchers through multiple platforms, avoid travel, and finish unfinished research projects. However, 15.2% of the participants concur that the new work arrangement was advantageous in every one of the aforementioned ways.

Negative impacts of the pandemic: Additionally, a number of the negative effects of the new work arrangement were also taken into account. The majority of participants, or 67.3%, stated that the absence of support workers to carry out various

research and official activities is the worst drawback of the new work arrangement. More than half of the participants cited travel restrictions and limitations on periodic experimentation activities as having a significant negative impact. According to 46.6%, 27%, and 21.3% of respondents, the pandemic's new work setup has had a significant negative impact on their personal and professional lives, internet usage and electrical costs, physical contacts, and therapeutic trial follow-ups. In addition, 14.1% of participants perceived all the mentioned impacts as major negative impact of the pandemic related new work set-up.

Occupational hazards: Numerous perceived occupational hazards of working from home were also evaluated, in addition to reported positive and negative effects of the new work setup. The majority of participants (67%) were concerned about the risks of prolonged screen time, while 34.2%, 33.4%, 33.3%, and 31%, respectively, reported headache/stress, musculoskeletal issues, weight gain, and exhaustion as a result of working from home. However, all of the aforementioned perceived occupational hazards of the work from home situation are accepted by 22.5% of the participants.

Future preparedness and impact on the research publications

Significant variations were found when participants' perceptions of future readiness and their influence on research publications were analyzed. In the event that a comparable circumstance recurs in the future, more than half of the study participants feel that they are at least partly prepared. Only 2.5% of interviewees felt they were completely unprepared for the future if new obstacles arose, compared to 39% who claimed they are very capable and 8% who said they are only marginally prepared. Only 27% of researchers and students reported feeling extremely prepared, compared to 40.4% of faculty and principal investigators who were more assured. When it comes to being

prepared for the future, students were shown to be more anxious than PIs and faculty.

Additionally, replies to the question about the impact on research publications were analyzed based on the researchers' primary fields of study. A total of 73% of the researchers agreed that the delay in experimenting would result in fewer publications, while 22.5% predicted an increase in publications and 5% predicted no change in the number of publications. Different scholars' reactions to the impact on publications varied significantly depending on the field of study. As indicated in the Table, the majority of researchers expect that publications would drop across all domains, although 35% and 28% of researchers in field sciences and dry labs, respectively, responded that their publications will grow as shown in the Table 4.

Table 4: Perceived impact on the research outcomes i.e., publications among researchers of various fields.

Impact on publications	Total	Life sciences/wet labs	Dry labs and others	Field sciences	Chi-square (p-value)
Decrease	456 (73)	368 (76)	63 (65)	25 (58.1)	10.2 (0.03)
Increase	136 (22)	94 (19.4)	27 (27.8)	15 (35)	
No impact	33 (5.3)	23 (5)	7 (7.2)	3 (7)	

DISCUSSION

According to the research, there are a number of psychological repercussions that public health emergencies might have, some of which manifest as anxiety, fear, and worry [9]. In this sense, the purpose of the current study was primarily to identify the psychological and social effects of the pandemic-related lockdown and researchers' use of work from home arrangements.

The global health crises have quickly changed the research landscape by forcing partial or full institutional closures around the world, primarily the organizational structures of the workforce. The majority of researchers are feeling constrained because they are unable to conduct tests owing to pandemicrelated limitations or because they must take care of children because of the closure of schools and kindergartens. Considering how worried young and early career researchers are about their future careers and their short-term contracts, this is actually a terrifying situation.

Many academics, particularly students and other researchers working on the projects, either lost their employment or only received half of their salaries. There is a lot of employment instability among people who are still employed globally. The continual rise in employment insecurity presents a significant concern since it is linked to ongoing short and long-term negative outcomes for people, organizations, and communities [10-12].

Scientific communities have been impacted by the pandemic related lockdown in terms of work schedules, scientific communication, collaboration, and training. The number of working hours, research projects, and related activities has significantly decreased. Additionally, they are making use of the shutdown periods to finish projects, conduct data analysis, and produce scientific papers and communications. There are studies indicating an increase in scientific publications to different journals after COVID-19 related restrictions have surfaced, which is consistent with the results of the present study.

The majority of participants, who were at various stages of their careers, expressed that they frequently used digital platforms for a variety of functions. As a result, the findings of the current study agreed with those of.

In addition to COVID-19, the literature indicates that the 21st century is a time of rising mental health difficulties. At the individual and societal levels, there are various facets to mental health and wellbeing. Previous medical emergencies and lockdowns have demonstrated that isolation's psychological impacts can range from short-term ones like irritability, fear of catching an infection and infecting family members, annoyance, loneliness, etc., to extreme ones like suicide.

Given that more than half of the study participants reported having experienced depression of varying severity, the results of this study demonstrate that depression is currently a substantial public health concern.

The National Mental Health Survey 2015-16 found a prevalence of 5.2%, which is lower than the reported prevalence of various degrees of depression, which was found to be higher. The current assessment's findings are analogous to those of other recent research [13].

According to Banerjee and Chatterjee's findings from 2016 that depression affects people regardless of their developmental stage, depression was found to be more prevalent among the researchers who were younger as compared to those who were older or elderly [14].

Additionally, female participants had a higher likelihood of having a severe case of depression than male participants, which is consistent with earlier studies [15]. It was argued that women express their emotions more than men do, and that the pandemic may have worsened this. Additionally, research has shown that women have lower thresholds for uncertainty tolerance than men. Therefore, going over that line causes them extra worry and anxiety. This shows that female researchers may be particularly vulnerable to mental health problems during institutional shutdown because they are exposed to less coping mechanisms in uncertain and stressful settings.

According to reports, wet lab scientists reported higher selfperceived stress levels during lockdown compared to prepandemic times, with trainees and non-tenured academics suffering the greatest effects, as found in the current study. People who lose their jobs are suddenly unable to make ends meet, which increases their shame, depression, frustration, and mental pain and eventually increases their risk of functional impairment and suicide. According to the current study, losing one's job may increase one's risk of developing depression at different degrees.

Additionally, it was found that institutional closure, travel bans, and work from home policies during the pandemic crisis appear to be better off because participants do not regularly encounter an elevated risk of infection because they have more options on how to do their tasks. However, they might not have enough room, tools, or resources to complete their responsibilities in the existing environment [16]. The results of the current study are consistent with those of earlier studies and suggest that because they have a higher degree of autonomy at home, it may be challenging for them to arrange their workdays.

The current health crisis also has implications for occupational health and safety. Despite the fact that there is little evidence available about the pandemic's employment risks [17]. However, research on prior reported disease outbreaks (such as the MERS 2015 and SARS 2002/2003) revealed significant effects on the medical staff [18].

According to the current study, main issues with occupational hazards include weight gain, stress/headaches, prolonged screen time, weariness, and issues with the muscles and skeleton. Similar to this, those who had been temporarily suspended owing to absence or reduced working hours had constant stress during lockdown because they were concerned about losing their jobs and experiencing more job uncertainty.

Additionally, it was stated that the epidemic has significantly impacted how family and work interact in numerous ways [19].

Though transferring from one position to another at home might be challenging, the conflict between family and work duties has been highlighted as the main cause for anxiety. There are two types of conflict resulting from the mismatch of work and family expectations: Time based conflict and strain based conflict. Time based conflict occurs when one domain suffers because of the effort put into another, while strain based conflict occurs when one domain suffers because of the resentment and fury of another [20].

CONCLUSION

According to empirical evidence from the current analysis, during the COVID-19 pandemic lockdown, members of the scientific community in general and students and researchers in particular had to deal with mild to moderate, moderate to severe and most severe forms of depression. Additionally, throughout the epidemic, many forms of national and international cooperation, knowledge exchange, electronic learning, knowledge distribution, etc., increased. Additionally, the capacity to work effectively from home and the development of national and international associations among researchers without the need for substantial travel may eventually lead to advancements in the scientific and broader societal fields. The many stakeholders should rapidly develop various psychological and social crisis preventive and intervention strategies to tackle the psychosocial problems that affect researchers and scientists. It is undoubtedly vital to establish mental health societies in order to ensure future psychological and social preparedness for such medical calamities. Grants and further extensions of current initiatives would aid researchers in adjusting to job loss and improving employability.

LIMITATIONS

The study is limited to the people currently involved in research or closely related occupations were included in the study, it is not possible to extrapolate the findings to the entire population of the nation. Regarding the psychosocial effects of the epidemic and associated lockdown, the conclusions among them may differ.

ETHICS APPROVAL

This is an observational study. Since this was a nonexperimental, voluntary survey, no ethical approval was obtained for the current study; however, confidentiality and anonymity of the study participants are protected by applying ethical standards. Informed consent was obtained from all individual participants included in the study.

CONSENT TO PARTICIPATE

Informed consent was obtained from all individual participants included in the study.

CONSENT FOR PUBLICATION

Consent for publication was obtained for every individual person's data included in the present study.

AVAILABILITY OF DATA AND MATERIAL

Available from the corresponding author on reasonable request.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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AUTHOR CONTRIBUTIONS

Both the authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Mamta Kumari Thakur and Radha R Ashrit. The first draft of the manuscript was written by MKT. RRA reviewed and commented on previous versions of the manuscript. RRA have read and approved the final manuscript.

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