

## Role of communication in resolving psychological impacts of COVID-19 pandemic

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### ABSTRACT

Although the implemented lockdown and social distancing measures are effective in limiting the physical outbreak of pandemics such as COVID-19, these measures have a detrimental effect on the mental health of the population. The psychological distress caused due to isolation and loneliness is even greater for healthcare professionals, thus, deeming it necessary to tackle this issue in order to mitigate its negative impact on the healthcare system. The present cross-sectional survey study was undertaken in order to identify the psychological impact of pandemic and lockdown on residents and academicians in dental institutions of Maharashtra. It also illustrates the nature and frequency of communication amongst residents and academicians along with discussing the importance of various aspects of communication which need to be implemented in order to resolve the psychological and academic problems caused by the present COVID-19 pandemic.

**Keywords:** *Loneliness, Anxiety, Healthcare workers, Social Distancing, Quarantine, Social Isolation, Academics*

The total number of COVID-19 cases have exponentially increased and outspread ever since the first reported case in early December 2019 and in order to limit the spread of the disease, numerous measures were implemented by Governments and health ministries across all the countries. However, deeply concerned by the alarming levels of spread and inaction on a global scale, COVID-19 was characterized as a pandemic by WHO on 11<sup>th</sup> March, 2020<sup>[1]</sup>. In India, nationwide lockdown was implemented on 24<sup>th</sup> March 2020 and presently, the state of Maharashtra bears the major portion of burden of COVID-19 cases<sup>[2]</sup>.

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Majority of population is well familiarized with the myriad of clinical manifestations of the disease which range from fever, cough, muscle aches, sore throat, headache, diarrhea, nausea and vomiting to development of pneumothorax, acute respiratory distress syndrome and multiple organ failure<sup>[3]</sup>. The effects of a pandemic are not only related to its physical impact, but also extend to including mental health problems such as pathological anxiety, depression and post-traumatic stress disorder induced by higher levels of stress and fear<sup>[4]</sup>. Human beings possess innate needs of socializing and communication with one another. The lockdown and quarantine measures implemented to counteract the mushrooming of the disease aggravate the existing mental burden, especially on healthcare workers, owing to the concomitant absence of communication<sup>[5]</sup>. Additionally, the academic performance of medical residents is affected by the angst caused by pandemic along with shortfall of research opportunities and modes of interaction<sup>[6]</sup>. However, most of the literature pertaining to COVID-19 is concerned with descriptive epidemiology of the disease. It is, thus, imperative to conduct more research into the relatively unexplored psychological effects of the pandemic and measures to counteract the same. Healthcare workers are especially prone to these detrimental effects owing to increased workload and risk of infection which has a negative impact on the coherence of healthcare system. In this context, the present study was undertaken to assess the psychological effect of the COVID-19 pandemic on residents and academicians from dental institutions in the state of Maharashtra by means of an e-questionnaire. Furthermore, it aimed at obtaining data about their nature and frequency of communication, with an objective to understand the impact of communication amongst residents and academicians on their psychological and academic well-being.

### **METHODOLOGY**

#### *Study Design*

A self-constructed questionnaire (attached as annexure 1) which was pilot tested for face and content validity with a team of 5 researchers, including a public health expert. The questionnaire comprised of a total of 14 closed-ended questions pertaining to various fears or stresses developed due to pandemic, frequency and nature of communication of the residents and academicians with each other. A total of 20 respondents participated in the pilot study, the data of which was not included in the final study. A Cronbach's alpha value of 0.895 indicated a good internal consistency & validity. The cross-sectional study was carried out by means of the questionnaire using Google Forms. All the respondents pursuing a post-graduation course or academic faculty in any of the dental colleges in the state of Maharashtra having at least a graduation degree (BDS) were considered as eligible for the study. Online platforms like emails, messenger apps and other social media were utilised for distribution amongst residents and academic faculty personnel from various dental institutions across Maharashtra. The participants were encouraged to share the survey to their contacts as well, for increasing the participation and response rate of the questionnaire. The link was forwarded across digital groups consisting of eligible participants.

*Sample size was determined using a single proportion formula*

$$n = \frac{1.96^2 p(1-p)(DEFF)}{d^2}$$

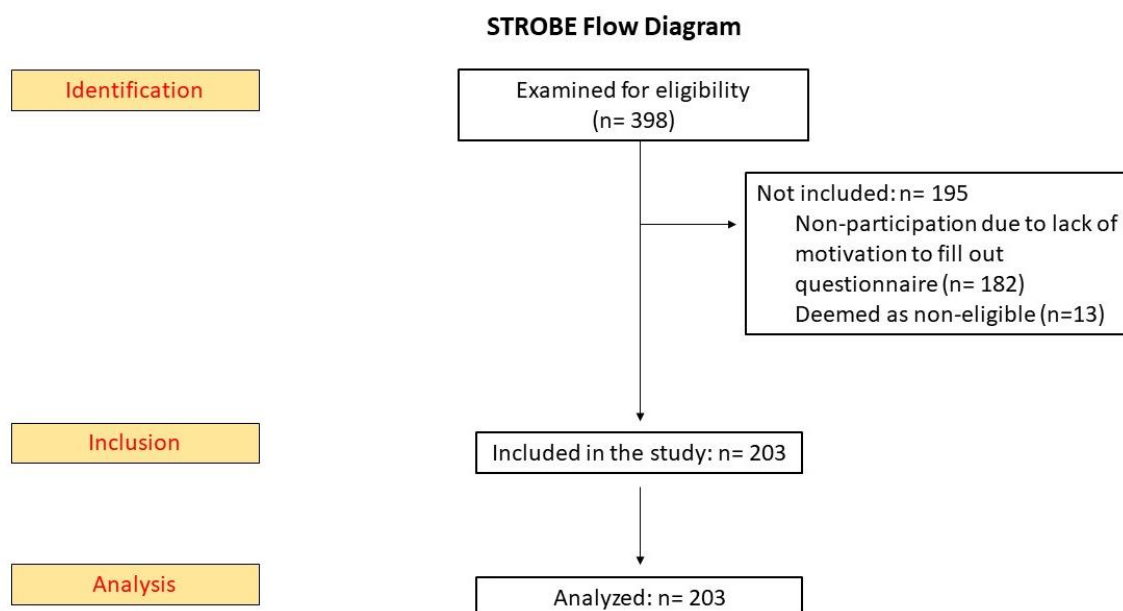
Where p = Estimate of the expected proportion, d = Desired level of absolute precision

Assuming the current prevalence / event rate to be at least 15% and keeping 5% confidence limit, for p = 0.05

$$n = 196$$

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It was estimated that approximately 196 respondents should complete the survey.



### *Statistical Analysis*

The filled responses obtained from online platform were transformed into a MS Office Excel Sheet (v 2010, Microsoft Redmond Campus, Redmond, Washington, United States). The compiled data was subjected to statistical analysis using Statistical package for social sciences (SPSS v 21.0, IBM). Descriptive statistics like frequencies and percentage for categorical data, Mean & SD for numerical data has been depicted. The categorical variables involved included gender, academic qualification and funding source of institution. Comparison of frequencies of categories of variables & responses with demographic variables were done by using chi square test. For all the statistical tests,  $p < 0.05$  was considered to be statistically significant, keeping  $\alpha$  error at 5% and  $\beta$  error at 20%, thus giving a power to the study as 80%.

## **RESULTS AND DISCUSSION**

The total number of respondents were 203 comprising of 135 females and 68 males with age ranging from 24 to 65 years with a mean age of 29.61 years. Amongst the eligible respondents, 156 were residents and 47 were academic faculty affiliated with various dental institutions across the state of Maharashtra. 55 respondents were affiliated with a Government institution and 147 respondents with a Private/ Semi-aided institution.

### *Stressing factors*

Although domestic lockdown and social distancing are logically most appropriate measures for physical containment of an infectious disease, it has been reported that these measures themselves independent of the disease take a considerable toll on the psychological welfare of population having their freedom restricted<sup>[7,8]</sup>. Duration of quarantine, fear of infection, frustration, boredom, scarcity of supplies, lack of clarity of information, stigma and financial fears have been identified as various stressors leading to psychological distress during quarantine<sup>[9]</sup>. These stressors associated with COVID-19 pandemic result in confusion, low mood, anxiety-induced insomnia. These mental detriments are further aggravated in

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residents and academicians who stay in hostel of the institution, away from their family and those lacking a steady family income along with the requirement of maintaining adequate supplies independently<sup>[6]</sup>.

### *Uncertain nature of pandemic*

What makes the COVID-19 pandemic even more dreadful is the uncertainties surrounding the nature of disease as well as its ever-evolving epidemiological status. This is pertinently applicable for the COVID-19 pandemic as a person of any gender or sociodemographic status can get infected while only speculations are available surrounding the mode of transmission while the disease is propagating at an alarming rate<sup>[10]</sup>. Another uncertainty includes pertaining to a definitive treatment for the disease whereby only palliative treatment can be provided to the patients at the moment<sup>[11]</sup>. Lack of updated clear information would escalate the desire for facts and push an individual to seek them from social media and news<sup>[12]</sup>. The World Health Organization has declared that health communication plays a significant role in every aspect of health and well-being at times of pandemics as these threats to global public health are rooted in human behaviour<sup>[13]</sup>. The most common sources of health information wherein people would seek for latest information about the pandemic and updates on the disease were observed to be the Internet followed by Television<sup>[14]</sup>. Although words have tremendous power in such situations, the data presented on national mass media and social media may not be scientifically sound occasionally which would make it difficult for vulnerable individuals to distinguish science-based evidence from less reliable facts<sup>[13,15]</sup>. Such untrue information could be misleading and may have a negative psychological impact culminate in unwarranted panic instead and thus, the WHO has recommended to restrict seeking information updates to twice a day at specific times from reliable sources only<sup>[16]</sup>.

### *Impact on Healthcare workers*

Healthcare workers inevitably develop stresses because of high risk of exposure, reduction in number of working personnel and increased individual workload<sup>[3,17]</sup>. Subsequently, they develop certain fears related to getting infected and being quarantined and posing a risk of infection to their own family and society. The requirement to purchase and maintain additional personal protective equipment (PPE) for preventive purposes as well as the need to maintain supplies during quarantine or lockdown further adds to burden of financial fears on the healthcare workers<sup>[18]</sup>.

Residents and academicians in healthcare institutions form an integral part of the healthcare system and detriment of their mental health results in a negative impact on the entire healthcare system. There was a statistically significant difference seen for the frequencies between the groups ( $p < 0.01, 0.05$ ) with higher frequency of younger residents having greater difficulty in coping with the lockdown situation and a neutral response from the more experienced academic faculty personnel. These results are in accordance with previous reports indicating that younger age and lower levels of educational qualification are some factors that tend to elicit greater psychological distress during a disease epidemic<sup>[19]</sup>. Therefore, understanding and mitigating psychological ill-effects of the pandemic is paramount to better prepare the healthcare workers, irrespective of their field of specialization. At the same time, vulnerable groups must be identified and special attention must be provided to these individuals.

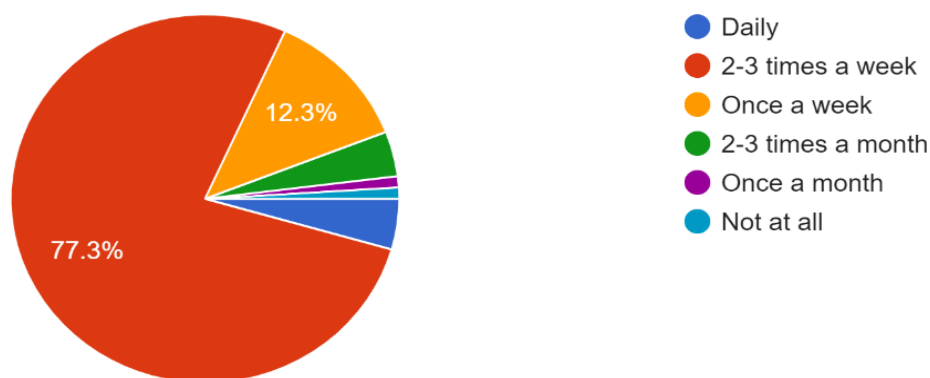
***Role of communication in certain conundrums associated with pandemic***

***a) Mitigating Loneliness:***

The residents may also experience loneliness owing to separation from their respective families, which has been associated with all-cause mortality [20]. Previous findings by researchers have reported that men are more reluctant to admit feelings such as loneliness, thereby, suffering greater psychological distress [21]. However, our results did not find any statistical significance in difference in expression of concerns to others by individuals of different gender, educational qualification or type of institution.

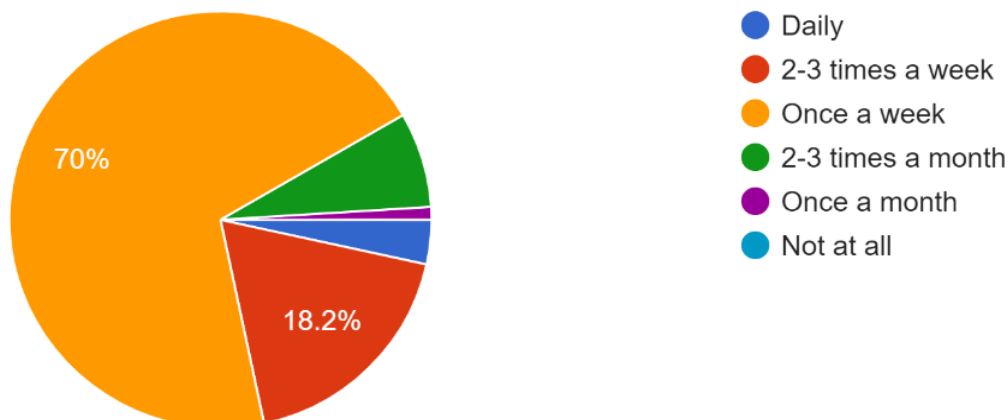
Social isolation is defined as ‘pervasive lack of social contact or communication, participation in social activities, or a confidante’ [22]. This term implies an objective lack of essential social interactions and thus, the term ‘physical distancing’ would seem more appropriate and would make people feel less lonely and isolated allowing social connection for residents that are physically separated from others [15,23]. “Communication” is at the heart of human society and signifies our symbolic exchange of shared meaning [13]. In psychological terms, an individual feels lonely subjectively when he/she does not experience enough social connections and thus, communication would facilitate people regulate their emotions and cope with loneliness [24]. According to our results, 77.3% respondents communicated with their colleagues and faculty members 2-3 times a week on a professional basis i.e. for academic purposes such as online seminars or presentations (Figure 1). However, there was a statistically significant difference seen in the frequencies between the groups ( $p < 0.01, 0.05$ ) wherein faculty communicated with their colleagues for purposes other than professional reasons only once a week as compared to higher frequency of responses from residents that communicated more frequently i.e. 2-3 times/week (Figure 2). Also, there was more frequent communication amongst residents and academic faculty affiliated with government institutions as compared to private/semi-aided institutions.

***Figure 1: Frequency of communication of respondents with their colleagues on a professional basis i.e. for academic purposes such as presentations, discussions***



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**Figure 2: Frequency of communication of respondents with their colleagues to communicate about their status of physical and psychological well-being**

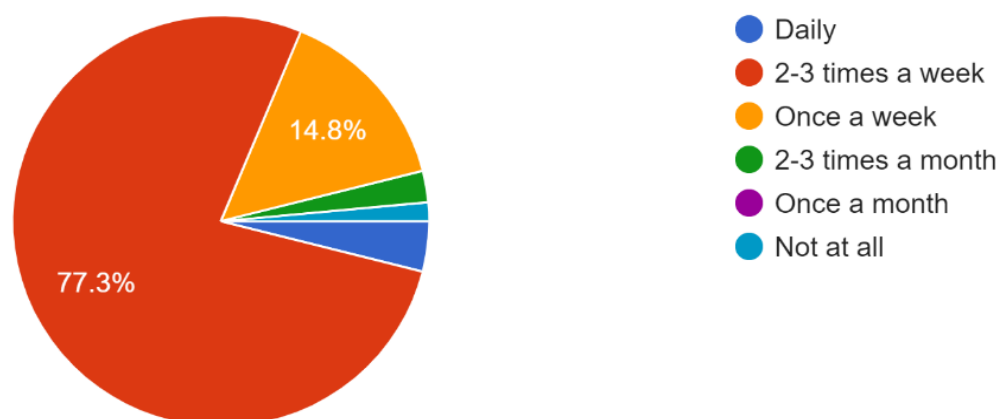


Unfortunately, some healthcare workers may be eluded by their family or community due to stigma or fear which could make an already challenging situation more complex to deal with. WHO recommends that healthcare workers should stay connected with their loved ones, colleagues, faculty and other trusted persons through digital modes of communication for social support which do not rely solely on written information<sup>[16]</sup>

### *b) Clarity of Information:*

The continuous bombardment of social media with all sorts of information about the outbreak creates further unease amongst individuals<sup>[25]</sup>. Debunking such news by fact-checking, exposing denial, source expertise and corrections that provide casual explanations are some of the verified countermeasures that utilize social science for eliminating misinformation<sup>[16]</sup>. The government and health authorities need to provide verified health information and updates about the pandemic in order to eliminate rumors and fake news. Evidence-based and verified health information was found to be effective in lowering levels of stress, anxiety and depression during a pandemic of uncertain nature<sup>[12]</sup>. **Figure 3** denotes the frequency of updates regarding the Novel Corona Virus received by the respondents from their colleagues. There was no statistical difference in the frequency of responses based on academic qualification or institution.

**Figure 3: Frequency of updates about the recent developments of our knowledge regarding Novel Coronavirus received by respondents**



*c) Assuming Leadership:*

At such times of distress, the experience and composure of senior academicians could play a pivotal role in maintaining a healthy psychological stability of the staff. Our results showed that there was a statistically significant difference ( $p < 0.01, 0.05$ ) in frequency of responses wherein the higher experienced academic faculty could cope up well with the present lockdown situation without experiencing lack of socialization or stress. Conclusively, they could take up the role of a leader and coordinate individuals to induce more adaptive mind-sets, increase positive emotions and boost psychological functioning<sup>[26]</sup>. This would keep the staff protected from chronic stress and poor mental health, which would empower them with a better capacity to fulfil their roles. Care should be taken to focus on long-term occupational capacity keeping in mind that the situation will not diffuse overnight<sup>[16]</sup>. Thus, communication strategies must be balanced and should neither include exaggerated reassurance to the staff in order to lower their stress and anxiety by considering the situation as a short-term crisis nor should it further append the anxiety and stress<sup>[15]</sup>. The leaders must ensure that good quality communication and accurate information updates are provided to all staff with clear channels of communication. They should implement flexible schedules and ensure that they build in time for colleagues to provide social support to each other<sup>[16]</sup>.

*d) Academic Impasse:*

Previous studies pertaining to COVID-19 outbreak have reported academic delays in college students associated with anxiety experienced during the pandemic<sup>[6]</sup>. Overall, the psychological stresses due to the pandemic hamper academic progress of the residents and their ability to focus which would have a negative impact on the overall capability of future healthcare professionals.

It has been a popular opinion that academicians should restrict themselves from indulging into personal affairs of their students so as to avoid bias in rating their academic performance. However, the impact of psychological distress on the academic performance of the residents cannot be overlooked as denoted by our results, a statistically significant difference was noted for the frequencies between the groups ( $p < 0.01, 0.05$ ) wherein higher frequency of responses for sleep getting affected was obtained from the younger residents as compared to academic faculty (**Table 1**).

**Table 1: Frequency of responses by various groups to their sleep and academic performance getting affected due to stress and fears resulting from the pandemic**

Present Credentials							
	Academic Faculty	Post Graduate - Part I	Post Graduate - Part II	Post Graduate - Part III	Total	Chi-square value	p- value
Agree	27	68	40	26	161		
Disagree	0	3	3	1	7		
Neutral	19	3	1	0	23		
Strongly Agree	0	3	0	3	6	67.372	0.000**
Strongly Disagree	1	3	0	1	5		
Uncertain	0	0	0	1	1		
Total	47	80	44	32	203		

In such cases, provision of psychological support to the residents is not merely an auxiliary countermeasure but a mandatory one which would procure a steady academic performance. Comprehension of this problem could be the reason that 92.7% of respondents believed that the frequent communication between residents and academic faculty is essential at present. There was a statistically significant difference seen for the frequencies between the groups ( $p < 0.01, 0.05$ ) wherein higher frequency of responses were received from academic faculty that the communication between residents and faculty members should be restricted to professional communication only so as to maintain an unbiased evaluation of academic performance for faculty in comparison with younger residents of the view that it should be extend to include caring about each other’s personal well-being but to a limited extent (**Table 2**).

Presently, smartphones and internet facilities with various channels of communication are conveniently available for most of the individuals and the youth is generally proficient with smartphones applications [27]. Our results show that 98% of the respondents have clear channels for the purpose communication with their colleagues. **Figure 4** illustrates various channels of communication that the respondents utilized for communicating with their colleagues. There was no statistically significant difference in channels of communication between frequency of responses from academic faculty and resident indicating that adequate channels of communication were available for both the groups.

**Table 2: Frequency of responses by various groups stating their views about the nature of communication between academic faculty and residents**

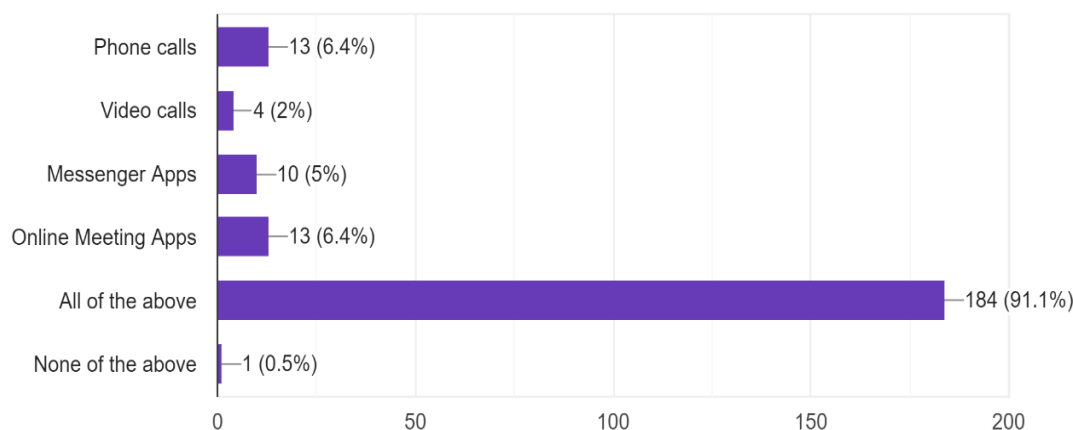
Attitude about the nature of communication between academic faculty and residents (PGs)	Present Credentials				Total	Chi-square value	p- value
	Academic Faculty	PG - Part I	PG - Part II	PG - Part III			
It should be greater than a mere professional one and include caring about each other’s personal well-being but to a limited extent	37	70	38	28	173	17.272	0.045
It should be restricted to professional communication only so as to maintain an	10	5	3	4	22		



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unbiased evaluation of academic performance							
It should be similar to that with one's friends wherein one is openly able to communicate with the other	0	2	3	0	5		
Unsure	0	3	0	0	3		
Total	47	80	44	32	203		

**Figure 4: Frequency of responses by the respondents as to various channels utilized for communication with their colleagues**



Thus, development of online portals, web-based or smartphone-based applications for delivering lectures, other teaching activities and psychoeducation could be undertaken by health authorities to ensure a smooth-running academic curriculum in the wake of pandemic [28]. Academic activities for residents such as journal clubs and seminars may be continued regularly through digital platforms that allow online meetings such as Zoom App (Zoom Video Communications Inc. San Jose, CA) [29].

### *e) Maintaining integrity:*

The responsibility of tackling a pandemic lies not only with the government and health authorities but extends to include every individual. The government and health authorities update policies regularly and formulate various guidelines whereas every individual plays their part by following physical distancing proactively to limit the spread of disease. Additionally, updating one's colleagues with verified latest information can provide a sense of social accountability and civic responsibility to an individual. Our results show that 96.1% of the respondents were playing their respective role in updating their colleagues about relevant valid information regarding the pandemic. This ensures frequent communication between residents and academicians achieving the objective of alleviating feelings of loneliness, stigma and being isolated from the community.

### *f) Creating a sense of trust:*

A healthy environment wherein one trusts their colleagues that they would adhere to physical distancing and other preventive guidelines is extremely essential for efficient functioning of an institutional system without any stigma. A challenge that may occasionally be encountered in this aspect is exhibition of 'optimism bias' which makes one believe that he/she is less likely to contract the disease than the others [30]. While on one hand, optimism may allay negative emotions, on the other it would lead to gross underestimation of the infectivity of the disease and may lead to ignorance of established protocol [15]. Our results

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show that 94.6% of respondents had a healthy trust that their colleagues would reasonably follow various 'commonsense' measures such as physical distancing and hygiene during the present pandemic situation. Frequent healthy communication would ensure that one's colleagues are up-to-date with recent developments in our knowledge about the disease and their roles in established protocols<sup>[29]</sup>. This would, in turn, expedite mutual feelings of trust amongst residents, laboratory staff and academicians thereby instilling a positive mental attitude.

### CONCLUSION

The psychological impact of pandemic on healthcare residents and academicians cannot be overlooked. Instilling a positive mental health must be prioritized in order to maintain an efficient medical care and academic system. Communication can play a major role in solving numerous psychological problems resulting from the pandemic. Valid and reassuring communication presented on a regular frequency through clear channels can help alleviate distressing feelings such as loneliness, stress, fear and anxiety. These channels must also be utilized effectively to maintain an undisturbed academic curriculum so as to ensure the quality of future healthcare force.

### REFERENCES

1. Available at <https://www.who.int/news-room/detail/29-06-2020-covidtimeline>
2. Available at <https://www.mygov.in/covid-19>
3. Chen N, Zhou M, Dong X, Qu J, Gong F, Han Y et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *The Lancet*. 2020;395(10223):507-13.
4. Makwana N. Disaster and its impact on mental health: A narrative review. *Journal of family medicine and primary care*. 2019;8(10):3090.
5. Xiao C. A novel approach of consultation on 2019 novel coronavirus (COVID-19)-related psychological and mental problems: structured letter therapy. *Psychiatry investigation*. 2020;17(2):175.
6. Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, Zheng J. The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry research*. 2020:112934.
7. Hawryluck L, Gold WL, Robinson S, Pogorski S, Galea S, Styra R. SARS control and psychological effects of quarantine, Toronto, Canada. *Emerging Infectious Diseases*. 2004;10(7):1206.
8. Mucci F, Mucci N, Diolaiuti F. Lockdown and isolation: Psychological aspects of COVID-19 pandemic in the general population. *Clinical Neuropsychiatry: Journal of Treatment Evaluation*. 2020;17(2):63-4.
9. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, Rubin GJ. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*. 2020; 395:912-20
10. Ho CS, Chee CY, Ho RC. Mental health strategies to combat the psychological impact of COVID-19 beyond paranoia and panic. *Ann Acad Med Singapore*. 2020;49(1):1-3.
11. Borasio GD, Gamondi C, Obrist M, Jox R. COVID-19: decision making and palliative care. *Swiss Medical Weekly*. 2020;150(1314)
12. Rubin GJ, Wessely S. The psychological effects of quarantining a city. *Bmj*. 2020 Jan 28;368.
13. Rimal RN, Lapinski MK. Why health communication is important in public health. *Bulletin of the World Health Organization*. 2009;87:247-a.

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14. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, Ho RC. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International journal of environmental research and public health*. 2020;17(5):1729.
15. Van Bavel JJ, Baicker K, Boggio PS, Capraro V, Cichocka A, Cikara ychM, Crockett MJ, Crum AJ, Douglas KM, Druckman JN, Drury J. Using social and behavioural science to support COVID-19 pandemic response. *Nature Human Behaviour*. 2020;4:460–471
16. World Health Organization. Mental health and psychosocial considerations during the COVID-19 outbreak, 18 March 2020. World Health Organization; 2020.
17. Zhou X, Snoswell CL, Harding LE, Bambling M, Edirippulige S, Bai X, Smith AC. The role of telehealth in reducing the mental health burden from COVID-19. *Telemedicine and e-Health*. 2020;26(4):377-9.
18. Pfefferbaum B, North CS. Mental health and the Covid-19 pandemic. *New England Journal of Medicine*. 2020 Apr 13. DOI: 10.1056/NEJMp2008017
19. Taylor MR, Agho KE, Stevens GJ, Raphael B. Factors influencing psychological distress during a disease epidemic: data from Australia's first outbreak of equine influenza. *BMC Public Health* 2008;8:347.
20. Rico-Uribe LA, Caballero FF, Martín-María N, Cabello M, Ayuso-Mateos JL, Miret M. Association of loneliness with all-cause mortality: A meta-analysis. *PloS one*. 2018;13(1).
21. Dahlberg L, Andersson L, McKee KJ, Lennartsson C. Predictors of loneliness among older women and men in Sweden: A national longitudinal study. *Aging Ment Health*. 2015;19(5):409-17. [https://doi.org/ 0.1080/13607863.2014.944091](https://doi.org/0.1080/13607863.2014.944091) PMID: 25126996.
22. Douglas M, Katikireddi SV, Taulbut M, McKee M, McCartney G. Mitigating the wider health effects of covid-19 pandemic response. *Bmj*. 2020;369.
23. Sood S. Psychological effects of the Coronavirus disease-2019 pandemic. *Research & Humanities in Medical Education*. 2020; 7:23-6.
24. Kagan J. Loneliness: Human nature and the need for social connection. *American Journal of Psychiatry*. 2009;166(3):375-6.
25. Frenkel, S., Alba, D. & Zhong, R. Surge of virus misinformation stumps Facebook and Twitter. *The New York Times* <https://www.nytimes.com/2020/03/08/technology/coronavirus-misinformation-social-media.html> (2020).
26. Crum AJ, Akinola M., Martin A, Fath S. The role of stress mindset in shaping cognitive, emotional, and physiological responses to challenging and threatening stress. *Anxiety Stress Coping*. 2017;30:379–395.
27. Do, T.T.T. Receptiveness and preferences of health-related smartphone applications among Vietnamese youth and young adults. *BMC Public Health* 2018;18:764.
28. Zhang, M.W.B.; Ho, C.S.H.; Ho, R.C.M. Methodology of development and students' perceptions of a psychiatry educational smartphone application. *Technol. Health Care O. J. Eur. Soc. Eng. Med*. 2014, 22, 847–855.
29. Pambuccian SE. The COVID-19 pandemic: implications for the cytology laboratory. *Journal of the American Society of Cytopathology*. 2020; 9(3):202-211.
30. Sharot, T. The optimism bias. *Curr. Biol*. 2011; 21:R941–R945.

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***Conflict of Interest***

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