Quarantine has its Impact on People Worldwide - A review

Arokia Rajkumar Shancy Merlin¹, Anjali A K², Anitha Roy³

¹Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai 77, Tamil Nadu, India
²Department of General Pathology, Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai 77, Tamil Nadu, India
³Department of Pharmacology, Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai, Tamil Nadu, India

ABSTRACT

Coronavirus disease 2019 (COVID-19), was first discovered in Wuhan, China which was then recognized by WHO as the novel coronavirus (nCoV). Since it is a highly communicable disease, it was declared as a pandemic, urging citizens to stay quarantined in their houses. Quarantine-isolation has led to many impacts in the people worldwide, being both advantageous and disadvantageous. It has encouraged the development of new skills, exercise to improve the immune system, de-stress, and have an altogether relaxed lifestyle. Some of the disadvantages may include the development of post-traumatic stress disorder, tension, depression, anger, confusion, financial loss, isolation, loneliness and these can prolong lifelong thereby threatening the life of the individual. Misinformation and loneliness can lead to individuals committing suicide or being affected by depression. Following the quarantine due to the nCoV, many countries have begun the implementation of emergency homeschooling due to school closure to prevent disease spread. The prolonged closure of schools and hence, the home isolation can stir a negative impact on the physical and mental health of children. Nonetheless, quarantine is of high importance during disease outbreaks, as it helps to curb the spread of disease and it is essential to overcome anxiety during these trying times by having a positive outlook.

INTRODUCTION

CoronaVirus disease (or COVID-19) is an infectious disease caused due to a newly evolved virus. A large number of people infected with the virus experience respiratory illness and have a chance of recovering when administered with special treatment. The older age group, those with an underlying disorder such as diabetes and children, are most prone to the development of the disease. This virus spreads mainly through droplet transmission from saliva, cough or sneeze from an infected person affecting an unsuspecting individual. Since the outcome of the disease, there has been various researches underway for finding a vaccine or specific treatment to curb the disease. Since there is none available currently, it is of high importance to protect ourselves from the virus (Hassan et al., 2020).
is done to separate a person or group that is ‘believed’ to be exposed to a disease that can be communicable to others, who have not yet been exposed to the disease; so as to curb the disease spread (The Centers for Disease Control’s Website, 2020). Self-quarantine or voluntary quarantine is when a person voluntarily chooses to quarantine himself/herself although he or she is not informed to do so. Needless to say, the COVID-19 outbreak has introduced a wide range of terms to the general public like ‘social distancing’, ‘isolation’ and ‘quarantine’. Social distancing is done to reduce the contact between groups of people; to avoid gatherings and tests negative. While in quarantine (or isolation of the affected individual usually occurs for at least 14 days, not unless extremely required. Other activities to be implemented to protect ourselves is to frequent the handwashing habit or increase the use of sanitisers, wearing masks and maintenance of a safe ‘6 feet’ distance from another individual. The symptoms of the new disease are evolving from time to time, from causing respiratory illness, to causing liver damage and blister appearance. Many of the signs and symptoms are being discovered, and it is our personal response by keeping ourselves and our loved ones protected to control the spread of the disease (Haigh et al., 2020; The Centers for Disease Control’s Website, 2020).

COVID-19 Pandemic
The first case of the coronavirus 2019 was first reported in Wuhan, China on 31st December, 2019. WHO officially confirmed that the respiratory illness that affected a significant number in Wuhan (after its first case) as the novel coronavirus(nCoV). The transmission of this new viral disease has taken a significant rise when compared to SARS (that occurred in 2003) (Li et al., 2020). This virus has been given a fatality rate of 1% which is more extreme than a seasonal influenza, as the new CoV affects healthy individuals and older age groups (targeting especially those having an underlying disease) (Zu et al., 2020). The COVID-19 transmission is at an exponential rise affecting more people than it is curing. It has already caused ten times more cases than SARS (B, 2020).

Although various measures are underway for the development of vaccines and medications to treat the coronavirus, it is of extreme importance to protecting ourselves from the trap of the virus by undergoing safety measures like- use of hand sanitisers, washing hands with soap for at least 20 seconds, wearing masks and maintenance of a safe ‘6 feet’ distance from another individual. The symptoms of the new disease are evolving from time to time, from causing respiratory illness, to causing liver damage and blister appearance. Many of the signs and symptoms are being discovered, and it is our personal response by keeping ourselves and our loved ones protected to control the spread of the disease (Haigh et al., 2020; The Centers for Disease Control’s Website, 2020).}

Quarantine and self-isolation during covid-19 pandemic
Since the outbreak of coronavirus, the health authorities of various infected countries have called for self-quarantine for those affected and quarantine in general for the public to prevent the spread of the disease (Haigh et al., 2020). Individuals at ‘risk of exposure’ are quarantined for at least 14 days, not allowing themselves to come in contact with family, loved ones, friends, workplaces or any other public place (Cava et al., 2005). This being said, isolation of the affected individual lasts until the person is free of all symptoms and tests negative. While in quarantine (or isolation), it is of high importance to not leave the house unless extremely required. Other activities to be implemented to protect ourselves is to frequent the handwashing habit or increase the use of sanitisers. Although it may be natural to get anxious, it is of high importance to ‘stay calm’ to combat the anxiety. Staying in quarantine helps in slowing the
spread of the disease, thereby flattening the curve and reducing the burden on the health care workers and staff (Cascella et al., 2020).

**Positive impacts of quarantine**

Apart from ‘flattening the curve’ or slowing the rate of infection, quarantine can also be beneficial in a number of ways to the general public. It can be used as a time for ‘unwinding’ our day and to engage ourselves in activities like drawing, knitting, cooking, improves creativity and fights off boredom. Since there is plenty of free time, it may be important to move around a little and spend some time exercising. Exercising, of any kind, improves the immune system and helps in the management of anxiety and stress (Chatterjee and Chauhan, 2020; Board on Global Health and Forum on Microbial Threats, 2004). Some time can be reserved for spending with oneself, by taking adequate amounts of rest. Engaging in meditation, listening to music can help in the relaxation of the body as well as the mind.

**Psychological impact of quarantine**

A study (Board on Global Health and Forum on Microbial Threats, 2004) of hospital staff when quarantined due to SARS had the most predictive symptom- acute stress disorder. It was also reported that they had suffered from anxiety, exhaustion, irritability, insomnia, poor concentration, indecisiveness (Brooks et al., 2020). Another study concluded that the PTSD in hospital employees (Post Traumatic Stress Disorder Syndrome) lasted even after three years (Wu et al., 2009). A study (Sprang and Silman, 2013) comparing post-traumatic stress disorder symptoms between children and their parents concluded that the symptoms were four times higher in children than adults. Most of the studies searched for the review, concluded that those quarantined have a high prevalence of post-traumatic stress disorder, or other psychological disorder. Other reported symptoms from the study were emotional disturbances (Yoon et al., 2016), depression (Hawryluck et al., 2004), insomnia, low mood (Lee et al., 2005), anger (Marjanovic et al., 2007) and emotional irritability (Maunier, 2003).

One study compared the undergraduates who were quarantined to those who were not quarantined (after quarantine) and found no difference in their post-traumatic stress syndrome.

Reasons for increased stress during quarantine may be due to longer duration of quarantine as stated in studies leading to avoidance behaviour, anger and higher PTSD than whose quarantine period wasn’t prolonged (Hawryluck et al., 2004; Reynolds et al., 2008) fears of infection (Braunack-Mayer et al., 2013; Desclaux et al., 2017) and boredom (Jeong et al., 2016; Blendon et al., 2004).

Financial loss can also be considered as a prime reason for the development of stress during quarantine. This can cause problems to the individual’s psychology even after the quarantine period is over (Jeong et al., 2016). Studies reveal that individuals with lower household income and financial loss have higher depression and PTSD than others (Hawryluck et al., 2004). To prevent depression due to financial loss, those with lower household incomes must require additional support and supplies provided to them whenever needed. This can help the needy.

**Impact of quarantine on older adults**

The novel coronavirus (nCoV) is known for its target on older adults and elderly with pre-existing conditions (Hassan et al., 2020; Shahid et al., 2020). Although quarantine implores people to stay within the household, physical activity is of high importance—especially to the older adults; as inactiveness can lead to a sedentary lifestyle and increased health problems. Older individuals long ‘social ties’ and they are a necessary part in helping these adults in physical activity (Fingerman et al., 2020). The reduced social ties during quarantine can decrease in engagement of physical activities. Loneliness only results in physical and cognitive impairment (Zhong et al., 2017). Some of the older adults are unable to take care of themselves— which can lead to worsening of health complications (Goethals et al., 2020). Lack of attention can lead to deterioration of health (Marchiondo et al., 2019).

Self isolation and loneliness only worsens the physical and mental health outcome in the long run (National Academies of Sciences, Engineering, and Medicine, 2020). This can heighten the risk of cardiovascular disease, obesity, hypertension and even death (National Institute on Aging, 2019).

The elderly may not be extremely aware and updated with ‘true’ information related to the infection which may lead to misinformation leading to anxiety and an increased fear of succumbing. Grief, due to either loss or distancing from families can also increase their risk in PTSD, and may also lead to a majority of individuals committing suicide (Lebret et al., 2006). Stress impacts immunity, leading to an increase in infection. Many elderly individuals have a lack of attainment of proper basic care amenities—like food, medicines and are hence, struggling with this and a fear of the growing pandemic (R and B, 2020).
Impact of quarantine on children

Following the quarantine due to the nCoV, many countries have begun the implementation of 'emergency homeschooling' due to school closure to prevent disease spread. Prolonged closure of schools and hence, the home isolation can stir a negative impact on the children's physical and mental health (Brazendale et al., 2017; Brooks et al., 2020). Being confined to homes and the lack of physical exercise, making them less active physically; longer screen time and irregular sleep patterns leading to weight gain and worsening health conditions (Wang et al., 2020). Stressors for children and adolescents could be the fear of infection, decreased social contact, boredom, frustration and monotonous schedule (Brooks et al., 2020). Rates of individual going into depression, taking up vaping and even committing suicide have gone up naturally.

Mitigating consequences of quarantine

Increasing the period of quarantine, often causes poor psychological outcomes and can hence lead to a marked increase in stress in the long run. Restriction of the duration of home isolation can lead to minimising the frustration when compared to quarantine with longer duration (Rona et al., 2007). It is also highly important to 'feed' the public with accurate information regarding the infection. This can reduce worrying in people and the spread of misinformation (Rubin et al., 2016). Provision of necessities well in advance may also be useful for families. Relieving boredom and improving communication with family and friends reduces feelings of stress or panic during isolation. Engaging in activities such as exercising, cooking, painting (Brooks et al., 2020) can divert one's mind and help in relaxing.

CONCLUSIONS

Overall, this article concludes that the impact of quarantine varies and can even be long lasting. Although the negative impacts question the need for quarantine, it must be understood by individuals that quarantine is definitely required in order to curb the infection spread. Since quarantine is absolutely essential, adequate measures must be taken to make the quarantine more tolerable, by providing basic needs, giving appropriate information and most importantly reassuring the general public. Coronavirus is definitely on the rage and is pandemic, easily picking up targets. It is the prime responsibility of the individual to stay alert and safe so that once the pandemic is over, the world can go back to its normal schedule and people to their usual life.

Conflict of interest

The authors declare that they have no conflict of interest for this study.

Funding support

The authors declare that they have no funding support for this study.

REFERENCES

B, G. 2020. Responding to Covid-19 - A Once-in-a-Century Pandemic? The New England journal of medicine, 382(18):1677-1679.

Balaji, S., Brundha, M. P., Path, D. N. B. 2016. Awareness of About Breast Cancer among Dental Surgeons. Journal of Pharmaceutical Sciences and Research, 8(8).

Barbisch, D., Koenig, K. L., Shih, F.-Y. 2015. Is There a Case for Quarantine? Perspectives from SARS to Ebola.

Blendon, R. J., Benson, J. M., DesRoches, C. M., Raleigh, E., Taylor-Clark, K. 2004. The Public’s Response to Severe Acute Respiratory Syndrome in Toronto and the United States. Clinical Infectious Diseases, 38(7):925-931.

Board on Global Health and Forum on Microbial Threats 2004. Learning from SARS: Preparing for the Next Disease Outbreak: Workshop Summary. page 376. National Academies Press.

Braunack-Mayer, A., Tooher, R., Collins, J. E., Street, J. M., Marshall, H. 2013. Understanding the school community’s response to school closures during the H1N1 2009 influenza pandemic. BMC Public Health, 13(1).

Brazendale, K., Beets, M. W., Weaver, R. G., Pate, R. R., Turner-McGrievy, G. M., Kaczynski, A. T., Chandler, J. L., Bohnert, A., von Hippel, P. T. 2017. Understanding differences between summer vs. school obesogenic behaviors of children: the structured days hypothesis. International Journal of Behavioral Nutrition and Physical Activity, 14(1):100–100.

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., Rubin, G. J. 2020. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. The Lancet, 395(10227):912–920.

Brundha, M. P. 2015. A Comparative Study-The Role of Skin and Nerve Biopsy in Hansen's Disease. Journal of Pharmaceutical Sciences and Research, 7(10).

Brundha, M. P., Pathmashri, V. P., Sundari, S. 2019. Quantitative Changes of Red Blood cells in Can-
cer Patients under Palliative Radiotherapy-A Retrospective Study. *Research Journal of Pharmacy and Technology*, 12(2):687–687.

Cascella, M., Rajnik, M., Cuomo, A., Dulebohn, S. C., Napoli, R. D. 2020. Features, evaluation and treatment coronavirus (COVID-19).

Cava, M. A., Fay, K. E., Beanlands, H. J., McCay, E. A., Wignall, R. 2005. The Experience of Quarantine for Individuals Affected by SARS in Toronto. *Public Health Nursing*, 22(5):398–406.

Chatterjee, K., Chauhan, V. S. 2020. Epidemics, quarantine and mental health. *Medical Journal Armed Forces India*, 76(2):125–127.

D, K. M., P. B. M. 2016. Awareness about nocturia: A questionnaire survey. *Research Journal of Pharmacy and Technology*, 9(10):1707–1709.

Desclaux, A., Badji, D., Ndione, A. G., Sow, K. 2017. Accepted monitoring or endured quarantine? Ebola contacts' perceptions in Senegal. *Social Science & Medicine*, 178:38–45.

Ferdioz, J. B 2016. Awareness of Stye. *International journal of pharmaceutical sciences review and research*, 40(1):30–32.

Fingerman, K. L., Huo, M., Charles, S. T., Umberger, D. J. 2020. Variety Is the Spice of Late Life: Social Integration and Daily Activity. *The Journals of Gerontology: Series B*, 75(2):377–388.

Goethals, L., Barth, N., Guyot, J., Hupin, D., Celarier, T., Bongue, B. 2020. Impact of Home Quarantine on Physical Activity Among Older Adults Living at Home During the COVID-19 Pandemic: Qualitative Interview Study. *JMIR Aging*, 3(1):e19007–e19007.

Haigh, A., Vasant, R., Hooley, D. 2020. Survey of COVID-19 self-isolation patterns in UK dental professionals: initial findings.

Hannah, R., Ramani, P., Brundha, M. P., Sherlin, H. J., Ranjith, G., Ramasubramanian, A., Jayaraj, G., Don, K. R., Archana, S. 2019. Liquid Paraffin as a Rehydrant for Air Dried Buccal Smear. *Research Journal of Pharmacy and Technology*, 12(3):1197–1197.

Harsha, L., Brundha, M. P. 2017. Prevalence of dental developmental anomalies among men and women and its psychological effect in a given population. *Journal of Pharmaceutical Sciences and Research*, 9(6):869–869.

Hassan, S. A., Sheikh, F. N., Jamal, S., Ezeh, J. K., Akhtar, A. 2020. Coronavirus (COVID-19): a review of clinical features, diagnosis, and treatment. pages 12–12.

Hawryluck, L., Gold, W. L., Robinson, S., Pogorski, S., Galea, S., Styra, R. 2004. SARS Control and Psychological Effects of Quarantine, Toronto, Canada. *Emerging Infectious Diseases*, 10(7):1206–1212.

Jeong, H., Yim, H. W., Song, Y. J., Ki, M., Min, J. A., Cho, J., Chae, J. H. 2016. Mental health status of people isolated due to Middle East Respiratory Syndrome. *Epidemiology and Health*, 38.

Kalaiselvi, R., Brundha, M. P. 2016. Prevalence of hysterectomy in South Indian population. *Research Journal of Pharmacy and Technology*, 9(11):1941–1941.

Lebret, S., Perret-Vailie, E., Mulliez, A., Gerbaud, L., Jalennes, I. 2006. Elderly suicide attempters: characteristics and outcome. *International Journal of Geriatric Psychiatry*, 21(11):1052–1059.

Lee, S., Chan, L. Y. Y., Chau, A. M. Y., Kwok, K. P. S., Kleinman, A. 2005. The experience of SARS-related stigma at Amoy Gardens. *Social Science & Medicine*, 61(9):2038–2046.

Li, Q., Guan, X., Wu, P., Wang, X., Zhou, L., Tong, Y., Ren, R., Leung, K. S. M., Lau, E. H. Y., Wong, J. Y., Xing, X., Xiang, N., Wu, Y., Li, C., Chen, Q., Li, D., Liu, T., Zhao, J., Liu, M., Feng 2020. Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus-Infected Pneumonia. *New England Journal of Medicine*, 382(13):1199–1207.

Marchiondo, L. A., Gonzales, E., Williams, L. J. 2019. Trajectories of Perceived Workplace Age Discrimination and Long-Term Associations With Mental, Self-Rated, and Occupational Health. *The Journals of Gerontology: Series B*, 74(4):655–663.

Marjanovic, Z., Greenglass, E. R., Coffey, S. 2007. The relevance of psychosocial variables and working conditions in predicting nurses' coping strategies during the SARS crisis: An online questionnaire survey. *International Journal of Nursing Studies*, 44(6):991–998.

Maunder, R. 2003. Stress, Coping and Lessons Learned from the SARS Outbreak. *Healthcare Quarterly*, 6(4):49–50.

MP, B., Nallaswamy, D. 2019. Hide and seek in pathology- A research on game-based histopathology learning. *International Journal of Research in Pharmaceutical Sciences*, 10(2):1410–1414.

Marjani, Z., Greenglass, E. R., Coffey, S. 2007. The relevance of psychosocial variables and working conditions in predicting nurses’ coping strategies during the SARS crisis: An online questionnaire survey. *International Journal of Nursing Studies*, 44(6):991–998.

Mauder, R. 2003. Stress, Coping and Lessons Learned from the SARS Outbreak. *Healthcare Quarterly*, 6(4):49–50.

National Academies of Sciences, Engineering, and Medicine 2020. Rapid Expert Consultations on the COVID-19 Pandemic.

National Institute on Aging 2019. The Grants Register 37 Ed. pages 542–542.

Prashaanthi, N., Brundha, M. P. 2018. A Comparative Study between Popplet Notes and Conventional Notes for Learning Pathology. *Research Journal of Pharmacy and Technology*, 11(1):175–175.
Preethika, S., Brundha, M. P. 2018. Awareness of diabetes mellitus among general population. Research Journal of Pharmacy and Technology, 11(5):1825–1825.

R, A., B, N. L. 2020. COVID-19 and the consequences of isolating the elderly. The Lancet Public Health, 5(5):e256.

Ravichandran, H., Brundha, M. P. 2016. Awareness about personal protective equipments in hospital workers (sweepers and cleaners). International Journal of Pharmaceutical Sciences Review and Research, 40(1):28–29.

Reynolds, D. L., Gary, J. R., Deamond, S. L., Moran, M. K., Gold, W., Styra, R. 2008. Understanding, compliance and psychological impact of the SARS quarantine experience. Epidemiology and Infection, 136(7):997–1007.

Rona, R. J., Fear, N. T., Hull, L., Greenberg, N., Earnshaw, M., Hotopf, M., Wessely, S. 2007. Mental health consequences of overstretch in the UK armed forces: first phase of a cohort study. BMJ, 335(7620):603–603.

Rubin, G. J., Harper, S., Williams, P. D., Öström, S., Bredbere, S., Amlôt, R., Greenberg, N. 2016. How to support staff deploying on overseas humanitarian work: a qualitative analysis of responder views about the 2014/15 West African Ebola outbreak. European Journal of Psychotraumatology, 7(1):30933–30933.

Shahid, Z., Kalayanamitra, R., Mcclafferty, B., Kepko, D., Ramgobin, D., Patel, R., Aggarwal, C. S., Vunnam, R., Sahu, N., Bhatt, D., Jones, K., Golamari, R., Jain, R. 2020. COVID-19 and Older Adults: What We Know. In Journal of the American Geriatrics Society.

Sharma, A., Fölster-Holst, R., Kassir, M., Szepietowski, J., Jafferany, M., Lotti, T., Goldust, M. 2020. The effect of quarantine and isolation for COVID-19 in general population and dermatologic treatments. Dermatologic Therapy, 33(4).

Shenoy, P. B., Brundha, M. P. 2016. Awareness of polycystic ovarian disease among females of age group 18-30 years. Journal of Pharmaceutical Sciences and Research, 8(8).

Shreya, S., Brundha, M. P. 2017. Alteration of Haemoglobin Value in Relation to Age, Sex and Dental Diseases-A Retrospective Correlation Study. Research Journal of Pharmacy and Technology, 10(5):1363–1363.

Sprang, G., Silman, M. 2013. Posttraumatic Stress Disorder in Parents and Youth After Health-Related Disasters.

The Centers for Disease Control’s Website 2020. Coronavirus: A Guide to Understanding the Virus and What is Known So Far. Simon and Schuster.

Timothy, C. N., Samyuktha, P. S., Brundha, M. P. 2019. Dental pulp Stem Cells in Regenerative Medicine – A Literature Review. Research Journal of Pharmacy and Technology, 12(8):4052–4052.

Wang, G., Zhang, Y., Zhao, J., Zhang, J., Jiang, F. 2020. Mitigate the effects of home confinement on children during the COVID-19 outbreak. The Lancet, 395:945–947.

Wu, P., Fang, Y., Guan, Z., Fan, B., Kong, J., Yao, Z., Liu, X., Fuller, C. J., Susser, E., Lu, J., Hoven, C. W. 2009. The Psychological Impact of the SARS Epidemic on Hospital Employees in China: Exposure, Risk Perception, and Altruistic Acceptance of Risk. The Canadian Journal of Psychiatry, 54(5):302–311.

Zhong, B.-L., Chen, S.-L., Tu, X., Conwell, Y. 2017. Loneliness and Cognitive Function in Older Adults: Findings From the Chinese Longitudinal Healthy Longevity Survey. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 72(1):120–128.

Zu, Z. Y., Jiang, M. D., Xu, P. P., Chen, W., Ni, Q. Q., Lu, G. M., Zhang, L. J. 2020. Coronavirus disease 2019 (COVID-19): a perspective from China. Radiology.