

# Stress and Sexual Dysfunctions During COVID-19: Things to Ponder

Hatta Sidi<sup>b</sup> Srijit Das<sup>a</sup>

<sup>a</sup>Department of Psychiatry, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre

<sup>b</sup>Department of Human & Clinical Anatomy, College of Medicine & Health Sciences, Sultan Qaboos University

## COVID-19 Pandemic

The novel coronavirus disease 2019 (COVID-19) caused by the SARS-CoV-2 virus was declared a pandemic in March 2020 by World Health Organization (WHO). The number of affected individuals increased globally. By May 2021, there were 170,051,718 and 3,540, 437 cases and deaths, respectively<sup>1</sup>. Many of the asymptomatic cases may not have been detected and the statistics might be even more. Now, the world is struggling to find the appropriate drug of choice as many drugs have been tried and discarded from use. It is almost impossible to vaccinate the entire nation within few months. There is a constant fear in everybody's mind regarding who will be next to succumb to the infection.

### Corresponding Author

Dr.Srijit Das  
Department of Human & Clinical  
Anatomy, College of Medicine & Health  
Sciences, Sultan Qaboos University,  
P.O.Box.35, Muscat 123, Sultanate of  
Oman.  
Tel No: +968- 24143548  
E-mail: drsrijit@gmail.com

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## COVID-19 and Mental-Health Issues Involved

While many challenges emerge in the treatment of the clinical features and complications of COVID-19, there is also a concern regarding the mental status of the individuals who are both affected and unaffected by the disease. Individuals throughout the world are worried about their safety, the availability of the vaccines, a socioeconomic concern such as lack of employment and lay off from service, unavailability of necessary items during the lockdown and quarantine period.<sup>2,3</sup>

Mental health problems encountered in individuals during self-isolation in the pandemic include mood and anxiety disorders, depression, low self-esteem, sleep disorders, panic, post-traumatic stress symptoms, and lack of self-control.<sup>4</sup> There are even cases of attempted suicides during this pandemic which was seen in other pandemic before. During the Spanish flu outbreak in year 1918 to 1919, there was a high suicidal rate.<sup>5</sup> The suicide rate increased significantly in individuals aged 65 years and above during the SARS outbreak in Hong Kong in 2003.<sup>6</sup> Suicides are more common, especially in individuals who lost their jobs and were unemployed.

Even in the United States of America, the Kaiser Family Foundation survey found that individuals had their mental health affected.<sup>7</sup>

Interestingly, frontline healthcare professionals had a higher chance of experiencing depression, anxiety, insomnia, and distress in comparison to other professionals in medical science.<sup>8</sup> It should be kept in mind that lockdown and financial constraints may also hamper the approach of any individual for seeking proper medical treatment.

Another worrying fact is that individuals recovering from the COVID-19 infection also experienced acute ischemic strokes, headache, dizziness, ataxia, seizures which were associated with suicidal behavior.<sup>9,10</sup> Even during the earlier economic recession in Europe during 2008- 2010, the incidence of suicides increased. At this moment, we still do not know how long the pandemic will continue and we may have to live with the virus. This possesses a big question mark on the mental health status of individuals.

## COVID-19 and Sexual System

COVID-19 has affected the sexual system, as well. According to the published study, ACE2 is the main entry point for the SARS-CoV-2 virus in any host cell.<sup>11</sup> The SARS-CoV-2 binds to ACE receptors. Hence, all cells in the body which express ACE2 maybe susceptible to SARS-CoV-2. ACE2 is expressed on the surface of various cells, and it is an enzyme that may give rise to smaller proteins. Research studies have also shown that there can be damage to the Leydig cells in the testis as they express the ACE2 enzyme.<sup>12</sup> There may be impaired steroidogenesis due to testicular dysfunction.<sup>13</sup> Another view expressed by researchers is that the blood-testis barrier is not fully efficient to isolate the virus. The virus can even cause inflammation of the testis. An earlier study had shown that the bluetongue virus can replicate in the endothelial cells of the peritubular areas of the testis to cause enhanced type-I interferon response and Sertoli cell damage.<sup>14</sup> If the testis is affected then, the spermatogenesis and androgens are also affected in the males.

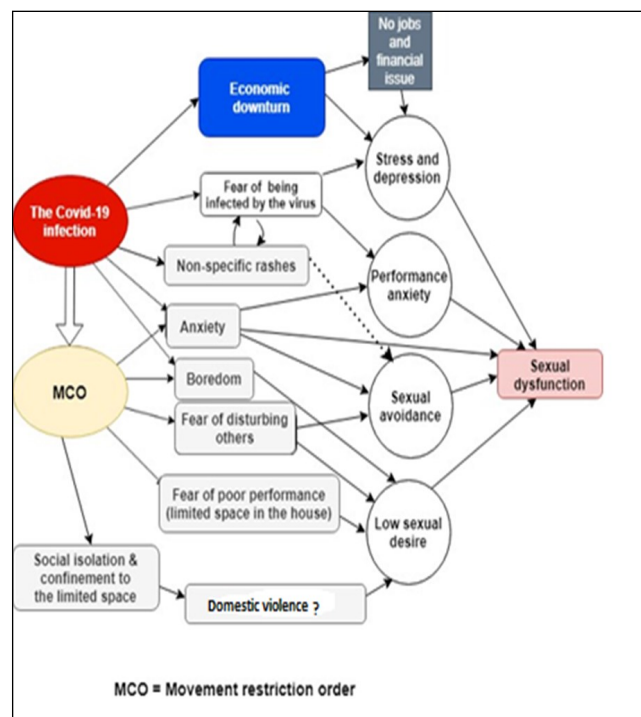
In female reproductive system the ACE2 which is expressed in the ovary is responsible for playing a synergistic role in the maintenance of Angiotensin II (AII) which in turn controls the steroid secretion.<sup>15</sup> As a result, folliculogenesis, steroidogenesis, oocyte maturation, ovulation, and regeneration of endometrium are also reported to be affected.<sup>16</sup> As the testis contains more ACE2 receptors compared to the ovary, vagina, and uterus, the effect may be seen more pronounced in the male reproductive system compared to the females.<sup>17</sup> From the above-mentioned facts, it is clear that both male and female reproductive systems may be affected by COVID-19 and proper precautions need to be taken.

## COVID-19 and Sexual Functions

Covid-19 has drastically transformed individual, family, and social relationships, and society. This is partially due to the restriction or movement control order (MCO) implemented by the administration. There was also a sense of fear of virulent pathogen spread and transmission. This pandemic has shaken

the world's stability, which has ranged from the impact on the market, earnings, and career to the psychological and emotional state of turbulence, from regional to the global community. This transformation stunned us in many ways. To make thing worse, it occurred within a noticeably short period. The change is leaving us without ample time in the form of 'readiness of our bodies' to deal with the vast hurdle in our reality of life.

The strains in the psychological responses covered stress (possible domestic violence), anxiety (panic and phobic disorder), fears (worry of getting an infection), boredom (due to the monotonous life), and depression (**Fig. 1**). The psychological sequel has been demoralizing and unquestionably affected the sexual function.<sup>18</sup> The horror of contagion itself has diminished the sense of enjoyment in daily sexual lives and physical intimacy within couples. This ranged from simple hugging, kissing to full sexual penetrative activities.



**Figure 1:** The complication of Covid-19, Movement Control Order (MCO) and, sexual and reproductive health problems

This pandemic enforced us to live in a confined space and especially during total lockdown causing limitations

and constraints for twenty-four hours a day. The physical space (house/room) restriction of one's world and the imperative sharing every moment of the day together could lead to boredom. Furthermore, any conflict due to the arguments within the cohabiting couple, or disagreements in opinions may thus lessen the couple's closeness and intimacy. Adverse and undesirable emotions also harmed the relationship and subsequently the sexual intercourse (SI).

Sexual affection and wellbeing of reproductive health, which is the foundation of the state of biopsychosocial domain and spiritual well-being were compromised. As numberless countries were in lockdown due to MCO, sexual behaviors and intimacy may have changed significantly. As a consequence of these difficulties, a proactive and emphatic approach to manage sexual dysfunctions such as low sexual desire, orgasmic dysfunction, and gratifying sexual relationships are required. These strategies to help the couple should include physical closeness, ventilation of emotion, promotion of emotional connectedness, trust, and effective communication promoting self-esteem and sexual well-being.

Concerning cohabitants, SI success may be affected by the continual presence of family members and children at home. Hence, finding privacy and rewarding moment in affection would be a great test. The specific emotional state could hinder libido or sexual desire. Depression and anxiety were often linked with low sexual desire.<sup>19</sup> Nevertheless, sexual desire and ventures cannot develop with a physical distance for a couple with long distance relationship, and the cul-de-sac due to the movement lockdown enforced by the authority. In this scenario, sexual experimentation and gratification may be practiced differently. Few even resorted to e-sex and chatting online. Many have even fallen victim to online e-love scams. How significant the e-sex is relevant in any oriental culture set-up during this contemporary crisis, is still debatable and in exploration state.

## CONCLUSION

The COVID-19 pandemic has a profound effect on the mental faculty, hemostasis for the sexual system, and

sexual functioning. Depression and anxiety have been reported besides the feeling of boredom and worries by many peoples during this difficult time. This is understandable in the context of psychological sequelae which are partly mediated by the MCO and fear of getting the infection. COVID-19 infection and pandemic have a direct and indirect impact on our thoughts, cognition, perception, emotion, and behavior. The direct effect is regulated via the central nervous system and control of the neuroendocrine system. The indirect effect is linked to the movement lockdown which further causes loneliness, financial insecurity, and loss of occupation. Addressing these pivotal issues pertaining to the daily hassle and conundrum can be a great challenge and needs focus and strong determination to improve the quality of life.

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