

**Review Article****Coronavirus and Physical Relations****Verma Vikrant<sup>1</sup>**

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**ABSTRACT**

Sexual activity offers numerous advantages for physical and mental health but maintains inherent risks in a pandemic situation, such as the current one caused by SARS-CoV-2. The COVID-19 pandemic and the resulting social changes that were required to slow the spread of severe acute respiratory syndrome corona virus 2 (SARS-CoV2) have resulted in lockdowns across many countries and led to substantial numbers of people being quarantined. For single people, their opportunities to meet a partner were completely lost. For couples who lived apart, this meant that they were not able to see their partner for many months. Based on current evidence, corona virus, the virus that causes COVID-19 illness is not passed on through vaginal or anal intercourse. However, corona virus is passed on through contact with droplets from the nose and mouth, including the saliva of an infected person, which can happen through close contact with others. This means there is a significant risk of passing on COVID-19 through kissing and physical touching if one person has the virus. There is also evidence that the virus is present in poop (feces), so licking around the anal areas (rimming) may also be a way the virus is passed on. The pandemic and the accompanying social mitigation measures have created a clear paradox between, on the one hand, deep fear of close contact with other people and, on the other hand, an intense longing for physical touch, in particular being hugged and cuddled, as a means of coping with distress and increasing feelings of interconnectedness. The present article throws a light on relation of coronavirus and sexual activity.

**Keywords:** Coronavirus, Physical Relations, SARS-CoV-2**Address for correspondence:** Verma Vikrant, Associate Professor Department of Pharmacy, Kharvel Subharti College of Pharmacy, Swami Vivekanand Subharti University, Meerut, UP, 250005**Mail:** [vijeetsingh84@rediffmail.com](mailto:vijeetsingh84@rediffmail.com)**Contact:** +917351096954**Introduction**

Sexuality is one of the aspects of personality in which the degree of intimacy and privacy is great. Asking patients about their sex life often arouses misgivings and feelings of shame or guilt. [1] However, scientific evidence shows that successful sexuality benefits males and females physically and emotionally to, having a favourable impact on their quality of life. There is evidence that sexual activity has advantages for humans, including increasing our longevity [2,3,4] and improving our immune system, among others [5,6]. Additionally, successful sexual activity increases psychic wellbeing by improving mood, even in depressed and high-anxiety patients [7,8], falling asleep [9] stress [10] relaxation [11] physical form and providing a younger body image [12] thereby contributing to the prevention of post-traumatic stress and anxiety disorders [13]. Sexual experience regularises the menstrual cycle [14], relieves dysmenorrhea and reduces the risk of endometriosis [15]. Sexual dysfunctions can cause some interpersonal conflicts by deteriorating either self-esteem or partner relationships [16]. Additionally, it may constitute an early sign of some organic pathology such as cardiovascular [17], neurological or endocrine diseases. There is also some evidence that sexual inactivity

correlates with an increased frequency of cancer, need for major surgery, worsening mental health and the increase of cognitive decline and cardiovascular disease risk factors such as diabetes, hypertension and hypercholesterolemia [18].

The effects of SARS-CoV-2 on human sexual and reproductive function, including whether the virus passes the blood testis and ovary barriers and whether there is any effect on sexual hormone production, are still unknown [19]. Additionally, some studies are currently seeking to identify similar impacts across the different populations impacted by HIV [20].

There is some literature indicating the potential benefits of increased sexual activity during periods of forced isolation indicating that those who maintain frequent in-person, but not remote, social and sexual connections have better mental health outcomes [21]. Given the psychologically negative repercussions of previous quarantines and the preventive benefits of healthy sexuality, it is reasonable to maintain one's safe sexual frequency. However, sexual intercourse requires close physical contact, and SARS-CoV-2 is very easily transmitted with this level of closeness [22]. Physical contact entails high viral exposure. When sharing a home with a COVID-19-positive person, the virus has been detected in 63.2% of room air samples and 66.7% of corridor air samples [23].

Other known coronaviruses do not appear to be sexually transmitted, but SARS-CoV-2 has been found in bodily fluids such as the saliva, mucus, and faeces of infected people, albeit slightly less in urine (6.9%). Some recent studies have reported the virus to be present in the testicular seminal duct [24,25] compromising the safety of sexual intercourse by persistence for at least 2 weeks postinfection in urine, faeces and nasopharynx secretions. Considering that 80% of those infected have mild symptoms or are asymptomatic, it is advisable to take some precautions at least during quarantine. The use of condoms and noncoital behaviour that does not involve direct contact with semen is highly recommended [26,27].

The virus was very recently found in the vaginal discharge of an infected 65-year-old female even while she was receiving oral lopinavir/ritonavir plus remdesivir. After two previous negative results, the vaginal swab tested positive via a real time reverse transcriptase-polymerase chain reaction on days 7 and 20 from symptom onset [28]. This new finding raises the possibility that sexual intercourse could be an additional direct vector of infection, adding to the recent evidence of a likely faecal oral transmission vector, or indirectly by exposure of the rectal mucosa to saliva. Additionally, patients can persistently test positive on rectal swabs even after negative results from nasopharyngeal testing. Thus sexual transmission may be possible despite apparent clinical recovery. Using real-time reverse transcription polymerase chain reaction to routinely test for SARS-CoV-2 in faeces was recently recommended patients' sexual habits should be routinely investigated in order to avoid direct sexual practices if infected with COVID-19. Physicians should always address these questions in epidemiologic surveys on transmission routes in order to determine effective strategies to control infection. [29].

Sexual relations suffered a serious blow due to the world pandemic from SARS-Cov-2. COVID-19 has radically changed social relations in the World, both because of the restrictions imposed by the various States and because of the feeling of fear of the contagion that has swept the general population.

#### **No clear cut evidence that coronavirus disease 2019 (COVID-19) can be transmitted via sexual activity**

There is no solid evidence that coronavirus disease 2019 (COVID-19) can be transmitted via genital and anal contact, but it will be passed on via kissing and physical touching, which are common practices during partnered sexual activity. Although engaging in sexual and intimate activities with partners who live in the same household is safe as long as none of them shows COVID-related symptoms, some people will refrain from all intimacy on principle, out of fear of getting or spreading the virus. This avoidance is unfortunate because physical touch is an essential part of sexual intimacy, constitutes a key determinant of emotional connectedness and can even be considered a necessity of life. That is, touch has a calming effect by decreasing levels of cortisol and increasing oxytocin, which is the primary hormone involved in social bonding and also facilitates sexual arousability. [30]

There is also evidence of oral-fecal transmission of the COVID-19 and that implies that anilingus may

represent a risk for infection. For homosexuals spread from anal intercourses & oral-fecal way is possible. The pregnant infected women who had vaginal delivery did not have infected babies, so trans vaginal involvement did not seem.

SARS-CoV-2 can be present in the semen of patients with COVID-19, and SARS-CoV-2 may still be detected in the semen of recovering patients. Owing to the imperfect blood-testes/deferens/epididymis barriers, SARS-CoV-2 might be seeded to the male reproductive tract, especially in the presence of systemic local inflammation. Even if the virus cannot replicate in the male reproductive system, it may persist, possibly resulting from the privileged immunity of testes. If it could be proved that SARS-CoV-2 can be transmitted sexually in future studies, sexual transmission might be a critical part of the prevention of transmission, especially considering the fact that SARS-CoV-2 was detected in the semen of recovering patients. Abstinence or condom use might be considered as preventive means for these patients [31-33].

#### **Current evidence suggests that all in-person sexual contact carries transmission risk**

SARS-CoV-2 is present in respiratory secretions and spreads through aerosolized particles. It may remain stable on surfaces for days [34]. On the basis of this information, all types of in-person sexual activity probably carry risk for SARS-CoV-2 transmission. Infected individuals have the potential to spread respiratory secretions onto their skin and personal objects, from which the virus can be transmitted to a sexual partner. Because many SARS-CoV-2-infected people are asymptomatic, HCPs are left with little to offer beyond guidance to not engage in any in-person sexual activity.

Data are lacking regarding other routes of sexual transmission. Two small studies of SARS-CoV-2-infected people did not detect virus in semen or vaginal secretions [35-36]. An additional study of semen samples from 38 patients detected the virus by reverse transcriptase polymerase chain reaction in 6 patients (15.8%) [37]. However, the relevance regarding sexual transmission remains unknown. Until this is better understood, it would be prudent to consider semen potentially infectious. Although 1 study failed to detect the virus in urine samples [38] there is evidence that SARS-CoV-2 nucleic acids were detected in a urine sample in at least 1 patient in another study [39]. Until this is clarified, urine should also be considered potentially infectious. SARS-CoV-2 RNA has been detected in stool samples, raising concern for fecal-oral transmission [40]. It is not clear, however, whether viral RNA detected in stool is capable of causing productive infection. Moreover, these data are moot, given that any in-person contact results in substantial risk for disease transmission owing to the virus' stability on common surfaces and propensity to propagate in the oropharynx and respiratory tract.

#### **When to consider avoiding sex**

Avoid sexual activity and especially kissing if you or your partner has symptoms of coronavirus, such as fever, cough, shortness of breath or loss of smell or taste. Anyone with common symptoms of coronavirus should self-isolate and phone their hospital services straight away to get a coronavirus test. If you have been identified as a close contact of a confirmed case

of COVID-19, you will need to restrict your movements for 14 days after your last contact with the person who has COVID-19 and you will be referred for testing, even if you have no symptoms.

It's important to be particularly careful if you or your sexual partner has an underlying medical condition, as you are more likely to become very ill if you get coronavirus. These include lung disease, heart disease, diabetes, cancer, obesity, or a weakened immune system..Safe sex guidelines are given in figure 1.



**Fig 1 Safe sex guidelines during covid pandemic**

### Sexual wellbeing throughout the pandemic

**Physical Benefits:** There are indications that sexual activity is an integral contributor to quality of life and overall physical health. It has long been understood that poor health can affect sexuality. Diabetes, chronic pain, depression, heart disease and cancer are all examples of conditions that can impair most areas of sexual function.

In pandemic times, management interventions including prolonged periods of quarantine, social distancing, and home confinement, have all-pervasive effects on social and economic life. Regrettably, little information and attention is focused on maintaining sexual health, despite its powerful effect on the overall quality of life in the short and long-term.

**Psychological Benefits:** WHO defines mental health as "a state of complete physical, mental and social well-being" and not merely "the absence of disease or infirmity." Regarding pandemic periods, mental health is an extremely essential issue that should be noted [41-42] According to the literature, the most prevalent symptoms in those who have been quarantined are depressed mood, irritability, fear, nervousness, and guilt [43-44] Scientific evidence has shown a strong link between mental and physical health. Daily activities such as sexual practices are highly related to a person's quality of life and mental health. The negative psychological effects like depressed mood, irritability, fear, nervousness, and guilt during this period are not surprising [45-46] Other studies have also demonstrated a positive association between duration of quarantine and worse mental health, more specifically symptoms of post-traumatic stress, (PTS) avoidance behaviors and anger [47]

Another key condition is the frustration/boredom of confinement, loss of routine, and social and physical contacts, which seems to be exacerbated when it is not possible to carry out daily activities or to participate

in social networking activities. The long-term effects also appear to be problematic. According to a study carried out with a group of individuals who were quarantined for potential contact with SARS-CoV-2 in the weeks after the quarantine period, a significant percentage of individuals continued to avoid others who were coughing or sneezing, closed places with clusters of people and public spaces. On that note, it is essential to reduce boredom, enhance communication and to activate social contacts, since the impossibility of doing so is a cause not only of immediate anxiety, but also of long-term distress. Sexual health is essential for global health and well-being of individuals, couples and families.

Studies correlate sex with increased satisfaction with one's mental health, increased levels of trust, intimacy, and love in relationships, improved ability to perceive, identify, and express emotions and lessened use of immature psychological defense mechanisms. To conclude, the psychosocial and economic implications of the current pandemic and the impact they have on collective, dyadic, and individual adjustment, are expected to have deleterious collateral effects on general health. [48]

### Limit contamination risks during sexual activity

Sex and relationships in COVID times have gained much media attention, including suggestions on how to limit contamination risks during sexual activity by using sex toys, webcam and phone sex, and mutual masturbation, for example. Even official authorities, such as the New York City government and the Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine, have proposed that partners explore sexual activities without direct physical contact, with masturbation being the safest option. Although masturbation does indeed limit the risk of contamination and has benefits in terms of stress relief, solitary sex can never replace partnered sex because it serves fundamentally different functions. Sexual desire is not an inherent drive that suddenly pops up and needs to be released and gratified [49-50]. Sexual desire can arise from many different underlying motivations, with dyadic sexual pleasure and expression of relational intimacy being important motivators. [51]

### Erectile Dysfunction

Erectile Dysfunction (ED) is the most common male sexual health concern, affecting between 13-28% of men aged 40-80 years [52] with prevalence increasing with age. While there is no data that explores the relationship between COVID-19 and the additional risk of developing ED, men at greatest risk for having serious complications secondary to COVID-19 are also those traditionally at risk for ED: older adult, diabetic, men with cardiovascular disease, overweight/obese, and with multiple comorbidities [53] Therefore, it is important to consider the role of added stress, anxiety, and physical health implications for men with ED amid the COVID-19 pandemic. It is not clear, if that COVID-19 may add to the collective risk of developing ED or exacerbate existing ED in men who contract COVID-19; there are previous examples of viral respiratory infections complicated



Sexual Approach	Summary
Sexual abstinence Masturbation	Low risk for infection, though not feasible for many Low risk for infection Safe masturbation tips (Planned Parenthood): <a href="https://www.plannedparenthood.org/learn/sex-pleasure-and-sexual-dysfunction/masturbation">https://www.plannedparenthood.org/learn/sex-pleasure-and-sexual-dysfunction/masturbation</a>
Sexual activity via digital platforms, such as the phone or video chat	Patients should be counseled on the risk for screenshots of conversations or videos and sexual extortion Minors should be counseled on potential legal consequences if they are in possession of sexual images of other minors Minors should be counseled on the risks for online sexual predation, which has increased since the pandemic began Speaking with children about sexual risk online during COVID-19 (Scientific American): <a href="https://www.scientificamerican.com/article/the-coronavirus-pandemic-puts-children-at-risk-of-online-sexual-exploitation/">https://www.scientificamerican.com/article/the-coronavirus-pandemic-puts-children-at-risk-of-online-sexual-exploitation/</a>
Sex only with those with whom one is self-quarantined	Patient is at risk for infection from sex partner if they have been exposed while outside the home Patient is at risk for infection from an asymptomatic SARS-CoV-2-infected partner
Sex with persons other than those with whom one is self-quarantined	Patient should be counseled on the risk for infection from partners, as well as risk reduction techniques that include minimizing the number of sexual partners, avoiding sex partners with symptoms consistent with SARS-CoV-2, avoiding kissing and sexual behaviors with a risk for fecal-oral transmission or that involve semen or urine, wearing a mask, showering before and after sexual intercourse, and cleaning of the physical space with soap or alcohol wipes COVID-19 and Your Sexual Health (Fenway Health): <a href="https://fenwayhealth.org/wp-content/uploads/C19MC-11_Sex-and-COVID-19-Materials_flyer2.pdf">https://fenwayhealth.org/wp-content/uploads/C19MC-11_Sex-and-COVID-19-Materials_flyer2.pdf</a> Guidance on COVID-19 and sexual health (New York City Department of Health): <a href="https://www1.nyc.gov/assets/doh/downloads/pdf/imm/covid-sex-guidance.pdf">https://www1.nyc.gov/assets/doh/downloads/pdf/imm/covid-sex-guidance.pdf</a>

Fig. 2 Sexual activity during COVID

with fibrosis [54] Chronic lung diseases, namely interstitial lung diseases and chronic obstructive pulmonary diseases (COPD) have been associated with ED. ED may worsen the highly stressful situation men face during the current pandemic. Postponement of most elective, non-urgent medical treatments and putting “on hold” topics that are not a direct, immediate threat to one’s health and safety may have a negative impact also on men’s sexual health.

### Masturbation

According to survey, only 10% of the surveyed people considered themselves to be practicing more masturbation during the lockdown. In this specific matter, our survey pointed that 16% of the survey was using chats and social media for sexting and another 5,5% dating apps. The amount of spare time, the theoretical lack of intimacy with other people and the stress generated by the situation might have led to a rise in masturbation. Besides, as commented above, a significant rise in porn consumption has taken place. The lack of intimacy and the general concern about the global situation can be offered as an explanation for this finding.

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### Increase in Pornography

One of the few sectors that has been benefited from the coronavirus pandemic has been the pornography websites that have experienced meteoric growth. The state of alarm has forced the population to stay at home, radically changing both interpersonal and partner relationships; work at home, social distancing, the continued presence of children at home, fear of infection and not being able to physically meet with others have changed most people’s sexual habits. The consumption of pornography reflects this new situation as reflected in the statistics of Pornhub, one of the leading pornography portals worldwide, which has published data on this substantial increase in visits to

its website. During this period, this website offered free access to its premium version to everyone to encourage the importance of staying at home and practicing social distancing. Pornhub was founded in 2007 and has more than 120 million visitors per day with an average of 100 billion video views per year. The website receives 36 billion visits per year. [58]

### Hinderance of sexual intercourse

COVID-19 has had a negative impact not only in terms of affectivity but also in terms of sexual relationship. In relations between cohabitants, sexual intercourse was affected by the continuous presence of children in the home, given the closure of schools, with the difficulty of finding a moment of intimacy. Sexuality is also influenced by the sense of desire for the other. Psychological factors, specific mood states can inhibit sexual desire. Depression and anxiety have been mostly associated with low levels of desire. [59-60]

### Groups more vulnerable to the pandemic mitigation

In addition to exploring the potential negative effects of stress on sexual activities and relationship functioning, which has attracted most of the media and research attention, another important effect of the coronavirus crisis that has tended to be overlooked is the reinforcement of existing disparities in terms of sexual and reproductive health and gender-based violence and stigma. Some groups are more vulnerable to the pandemic mitigation measures, including young people, women, LGBTQI- identifying people, refugees and migrants, the poor and uninsured, ethnic minorities, and people living with HIV. Those people whose human rights are least protected are likely to experience unique difficulties from COVID-19, which illustrates the need for a justice framework to monitor and address the inequitable gender, health and social effects of COVID-19. [61]

When looking at these vulnerable groups from a syndemic perspective, multiple health challenges can be seen to produce an increased burden of disease [62]. We need to consider effects such as increased sexual risk behaviours, disrupted dating strategies, reduced access to and opportunities to have sex, increased substance use, and reduced access to STI testing facilities, STI treatment and HIV care. People with HIV might be immunocompromised, potentially increasing the risk associated with COVID-19 infection.

When pre-exposure prophylaxis and HIV testing and care are interrupted, the sexual health of men who have sex with men and people living with HIV is compromised.

To avert increased HIV and STI incidence, steps need to be taken to improve access to sexual health services, such as increasing the use of telehealth for pre-exposure prophylaxis and HIV care and mailed self-collection of specimens for HIV and STI testing. Women are another vulnerable group. Although fewer women die from COVID-19. [63]

### Sex and coronavirus transmission

Researchers believe that as much as 33 percent of people who are infected with coronavirus show few or no symptoms but can still infect others. So even if your

partner has no symptoms, you could get the virus from them.

However, people with symptoms are the most likely to transmit the virus. If your partner has had a fever, cough or shortness of breath recently, refrain from close contact or sexual activity (genital, oral or anal) until your partner has seen a doctor.

During sex, wearing a mask is not likely to prevent transmission if one of the partners has COVID-19.



Fig 3 Precautions for sex in covid 19

### Precautions for a partner you don't live with

It is riskier to have sex with a partner you don't live with. If you do not live with your partner, you can't know exactly how much they are taking precautions. If you have met someone online and want to meet without danger, keeping it online is the safest way to date. You can communicate through phone calls, video chats or other online methods. In fact, the risks of becoming infected with the novel coronavirus from kissing, shaking hands or just sitting close enough in a cafe to hear each other are nearly as high as the risk of catching it through sexual contact. [64]

### Limiting the spread of COVID-19 during sex

If you have sex with someone you don't live with there are a few things you can do to lower the risk of getting or spreading COVID-19.

1. Avoid kissing or exchanging saliva with anyone outside of your household.
2. Avoid sexual activities which include licking around the anus.
3. Use condoms or dental dams to reduce contact with saliva or poo.
4. Take a shower and wash your hands and body thoroughly with soap and water both before and after sex.
5. If you use sex toys, wash these thoroughly with soap and water and do not share them.
6. Consider sexual arousal techniques that don't involve physical contact – like talking.
7. Mutual masturbation while physical distancing.
8. Limit your physical interactions by reducing the number of sexual partners you have overall, and/or at the same time. [65]

### Angiotensin-Converting Enzyme-2 (ACE2) receptors and nervous system

Patients with severe COVID-19 are more likely to present by nervous system manifestations more than the typical manifestations. According to the American Thoracic Society guidelines for community-acquired pneumonia, a study showed that the nervous manifestations included acute cerebrovascular disease, ischemic stroke, or cerebral hemorrhage [66]. Strokes have negative impacts on sexual function and desire. In men, it can cause a significant decline in erection or ejaculation in the period after stroke. In

women, there can be problems regarding normal vaginal lubrication, sexual desire, and orgasm. Many patients, after stroke, suffer from fear of getting another stroke, so decrease their sexual activity.<sup>[67]</sup>

The tale of COVID-19 and sexuality does not end at this point. COVID-19 uses the Angiotensin-Converting Enzyme-2 (ACE2) receptors as an entry point for invading the respiratory system. This ACE2 is a constitutive product of adult Leydig cells. This suggests a possible involvement of the testicles in those patients and decreases testosterone secretion, the hormone that proves recently to be protective against COVID-19.<sup>[68]</sup> Studies showed that testosterone level increases on the 7th day of abstinence, but this not affected significantly by intercourse in males.<sup>[69]</sup> However, the reverse appears in females as they show increasing levels of testosterone after intercourse.<sup>[70]</sup> So, it seems that sexual relationship is more protective for females than males against COVID-19

### **Psycho-sexuological implications of lockdown**

From a psychological point of view, the lockdown condition involves an increase in obsessive fear of contamination, feelings of uncertainty, dismay, worry, anxiety and depression. Many people have feelings of anger, irritability, insomnia, fear, boredom, anxiety related to the economic situation and, in some cases, a real risk of post-traumatic stress disorder. People with previous emotional and psychological fragility are at risk, as well as couples with disabled children or other health problems, conflictual couples and especially those where domestic violence is present. Social distancing slows down the spread of the virus, but it also forces us to repress or modify our need for closeness and relationship, leading us to reformulate our sexual life as well. According to the New York Department of Health Guidelines, it is reasonably safe to have sexual intercourse between cohabiting partners, unless one or both partner have professional risk of infection or they do present one or mere COVID-19 symptoms. Condoms can reduce contact with saliva or feces, especially during oral or anal sex. In a study by Hamermesh, it was found that the happiness of married individuals could have been slightly increased by isolation. This is not true for single people, where levels of happiness are diminished by losing their jobs and not being able to see other people. Married people's happiness rises with additional time spent with a spouse, while singles' happiness falls as they spend more time alone. This pandemic allows us to think of a new sexual intimacy also mediated by sex toys and technology. In conclusion, people who are experiencing the current social distancing are more likely to report discomfort due to fear and risk perceptions that may have an impact on their sex and couple life, but safe sex between intimate couples can be an activity to support psychologically fragile people living in restricted areas for longer quarantine periods. However, proper considerations of the risk can increase resilience. During lockdown, sex between habitual partners without symptoms, and cohabiting since the beginning of the restrictions is to be considered a real tool to stay connected and relieve anxiety during forced cohabitation. Finally, irritability, sadness, reduced or disturbed sleep, apathy, catastrophic thoughts that last

a long time must warn us and eventually lead us to ask for help.<sup>[71-73]</sup>

### **Conclusion**

COVID-19 will have a negative impact not only in terms of affectivity but also in terms of sexual relationships. The impact of the coronavirus will be very important in the sexual life of the people. Up till now, there is no case report of COVID-19 patients presented with genital or sexual affection. However, fear of future affection for the current cases must be considered. Patients should be followed up after the curing of COVID-19. We are in a compelling need for studies on the current and future genital affection of COVID-19 patients. Support programs are needed now either for patients or the other healthy people to prevent any drawbacks from the pandemic.

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