

COVID-19 and Coitus: Novel Times and Novelties as this Pandemic Fans an Already Flaming Epidemic

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Abstract

It is widely accepted that the coronavirus pandemic has caused massive changes in our social dynamic. Namely, social interactions have been limited. These alterations have affected our sexual culture at a time when STD rates are already soaring. During this worldwide quarantine there has been increased usage of pornography and increased sales of adult toys. New technologies have allowed distanced individuals to sexually link up via teledildonics and dating apps. The long term effects of these new technologies on sexual culture is unclear, but history suggests that a rise in STDs following this pandemic is probable. Advancements such as teledildonics may curb this rise. To prevent a rapid spike in sexual health concerns (STDs, unplanned pregnancies, etc) more aggressive public guidelines designed to educate the public on safe sexual practices are warranted.

Introduction

The coronavirus pandemic has broadly impacted society including sexual behavior and sexual health. Self-isolation, social distancing, and stay-at-home quarantine orders have drastically disrupted normal human interactions. Changes in traditional interactions have strained our healthcare system resources and personnel, as attention has been redirected toward fighting coronavirus. Although a necessary shift, this will certainly bring new challenges to medical care, notably in aspects of sexual and reproductive health such as the fight against STDs and teenage pregnancy. This paper will investigate how the coronavirus pandemic has influenced attitudes about sex, created new trends in sexual behaviors, and demanded robust policies to better educate the public about sexual health.

Trends in Sexual Behavior Amidst the Coronavirus Pandemic

Preliminary research has provided conflicting insight regarding the nature of sexual behavior during the coronavirus pandemic.^{1,11, 16, 21} To date studies have shown mixed results, making the long-lasting impacts on sexual behavior unclear. A better understanding of new trends in sexual behavior may assist in creating better policies, writing better guidelines, and more appropriately allocating healthcare resources. Sexual frequency, desire, and satisfaction are all important factors in studying the overall sexual behavior of the population; however, studies of these parameters during the coronavirus pandemic are limited and have shown regional variability.

A study of men and women in China in March of 2020 demonstrated that sexual activity, frequency, and risky sexual behaviors all decreased significantly during the coronavirus pandemic.²¹ Individuals also reported a decrease in sexual desire which was cited as a significant factor affecting sexual activity.²¹ However, 32% of men and 18% of women in this study indicated they felt inclined to increase the number of sexual partners or risky sexual behaviors once the pandemic ended.²¹ Despite China being the epicenter of the pandemic, its trends in sexual activity contrasts with other countries.

A study conducted in the UK in March 2020 (17 days after the first reported COVID-19 case in the United Kingdom) found contradictory trends regarding the frequency of sexual activity following the enactment of self-isolation guidelines. Data revealed that sexual activity significantly increased with greater time spent in isolation with 33.5% of respondents who were self-isolated for 0-5 days reporting they were sexually active, compared to 47% of individuals self-isolated for >11 days.¹⁶ Additionally, Nottingham-based online pharmacy “UK Meds” has reported an increase of 34% in regard to sales of medications for erectile dysfunction and premature ejaculation since the onset of self-isolation.²² While cultural factors are to some extent responsible for regional differences in sexual behavior, it is possible that the variability in data regarding changes in sexual activity may be due to influences such as strictness of social distancing guidelines and perceived severity of the pandemic.

To further muddle our understanding of the pandemic’s effect on sexual behavior, a cross-sectional study of individuals in Bangladesh, India, and Nepal in April 2020 found that while participants felt the pandemic had impacted their sexual life in both positive and negative ways,

there was no significant difference in frequency of sexual activity before or during the pandemic.¹ A similar survey administered in Italy also showed no statistically significant increase in frequency of sexual intercourse, despite over 40% of participants reporting an increase in sexual desire during the quarantine.¹¹ Even with this increase in sexual desire, 50% of these participants reported decreased sexual satisfaction during the quarantine compared to only 7.46% of people pre-quarantine.¹¹ It was also found that women who personally knew people that had tested positive for COVID-19 reported reduced sexual satisfaction.¹¹ Another study, also administered during the height of the pandemic in Italy, found a decrease in desire for parenthood as 37% of the respondents who were planning to have a child before the pandemic deciding against that plan in light of the spread of coronavirus.²³ This may help explain the disparity between sexual desire and sexual frequency.

Perhaps the variable changes in these parameters of sexual behavior can be explained by increased levels of stress and anxiety during this time of uncertainty and disruption of “normal” life. A study of individuals in China during the pandemic found an average 74% decline in emotional well-being. Individuals residing in Hubei, the epicenter of the epidemic, experienced the largest decrease.³⁷ So far, China is the only country studied that has exhibited a significant decrease in sexual frequency and sexual desire. A possible explanation is the Terror Management Theory. First proposed by psychologists in 1997,¹⁵ this theory postulates that humans will modify their behaviors as a coping mechanism when faced with increased awareness of their own mortality. The manner in which individuals modify their behaviors can vary. While some people increase sexual behaviors, others experience a decreased interest in sex. These difference depend on factors such as context of the romantic relationship and individual self-esteem.¹³

Since the development of this theory, multiple studies have investigated the effect of “mortality salience” on sexual behavior,² and their results may help elucidate the variability in sexual trends seen in the wake of coronavirus. Studies have shown that when faced with increased awareness of one’s mortality, sexual behavior can serve as a self-soothing mechanism for some individuals but can evoke higher stress levels in others. The effect on sexual desire was influenced by factors such as personality type, context of the sexual behaviors, and the meaning placed on sex by each individual.² While this information does not tell us exactly how sexual behavior will change in the context of the COVID-19 pandemic, nor does it fully explain why some countries are seeing a rise in sexual activity while others are seeing a decline, it does help explain the multifactorial nature of sexual response to stressors that makes predicting changes in behavior difficult.

There is not currently data regarding sexual activity in the United States during the COVID-19 pandemic, but there does exist some understanding of pre-pandemic trends in sexual activity. A national survey found that from 2000 to 2018 there has been an overall decrease in sexual frequency and number of sexual partners among both young men and women in the U.S.³⁴ This survey identified measures such as unemployment and lower income correlated with decreased sexual activity, which may be more pronounced amidst the economic turmoil of the COVID-19 pandemic. The potential for COVID-19 to reinforce trends in sexual behavior seen over the last two decades in the United States, or perhaps induce a reversal of the decline in sexual activity, is worthy of further study.

Coronavirus Pandemic Influence on Pornography, Online Dating, and Social Media

Ironically, COVID-19 comes at a novel time in history--a time where technology and the sexual revolution have made access to sex literally at our fingertips. The COVID-19 pandemic has created an environment with conflicting effects on sexual desire. It is possible that the risk of acquiring coronavirus through close physical contact will lead individuals desiring to engage in sexual activity to pursue alternative outlets for their sexual desire. With a significant rise in visits to pornographic websites, a surge in the usage of dating apps, and a multitude of interactive sex toys that can facilitate intimacy in a time of social distancing, the current high-tech world of sexuality makes this pandemic unlike any other in history--a novelty of sorts.

According to data released from the website Pornhub.com, there have been significant increases in daily traffic correlating to the dates when countries implemented social distancing and shelter at home orders. There has been a worldwide increase in traffic to the website ranging from 8.9% to 24.4% when compared to matched daily traffic in 2019 according to the April 30, 2020 update from Pornhub.³² European traffic began increasing overall on March 11, 2020 with Italy having a 57% increase on March 12, 2020 when Pornhub gave free premium memberships to the entire country. The United States began having upward trends of traffic later with the first significant spike (9.5%) on 3/19/2020 which correlates with the first state, California, to issue a statewide shelter-in-place order.²⁷ Pornhub also released data showing that searches for “Quarantine” and “Coronavirus/Covid” themed pornography began as early as 1/25/2020 and peaked with over 1.5 million searches on March 5th and a total of over 9 million searches by 3/16/2020.³²

As the global consumption of pornography has increased, so too has the use of online dating apps. According to reports from Match Group, Inc. who owns several of the most popular dating apps (OkCupid, PlentyofFish, Tinder, Hinge, and Match.com) there has been a massive surge in app use, as well as an increase use in the newly implemented virtual date feature from 6% prior to isolation orders to 69% afterwards. Having multiple virtual dates prior to a more traditional date, such as meeting at a restaurant or bar, is a new trend that may have a lasting impact for how relationships begin and progress for future generations.³⁵

According to the How Couples Meet and Stay Together surveys from 2009 and 2017, there had already been a paradigm shift for how couples met their current partners.³³ Prior to 2009, “Met through Friends” had been the most likely answer since the 1940s; however, with the adoption and reliance on smartphones over the last 15 years, “Met online” exponentially rose to take the lead by 2013. Virtual dating may have a permanent effect, encouraging more caution when meeting strangers and potentially decreasing sexual violence in the future. According to Dr. Fisher, “We’re seeing the emergence of a new phase in the courtship trajectory, which is meet online, talk online, then talk in person. Yes, we’re moving forward to the past. We’re getting to know somebody before the sex”.³³

With the increasing normalization of virtual dating prior to traditional in-person dates, technology has been advancing toward a potential new frontier for safer sex practices. The term “teledildonics” has been around since 1975 when Ted Nelson used it to describe the concept of having a computer interface transmit the sensations of having sex with someone remotely.¹⁸ The field has advanced considerably since then especially with the advent of consumer priced virtual

reality goggles. Kirroo (based in Amsterdam) is the current leader in interactive sex toys, selling a variety of devices which can sync with each other or even sync with specially made pornography to allow users to experience similar sensations to traditional sex.¹⁷ According to a recent post in Rolling Stone, the price point of \$200 to \$400 has been a barrier to more mainstream use of these toys; however, recent social distancing and concerns over sexual contact transferring coronavirus have caused a substantial increase in sales of interactive sex toys.¹² Multiple other online sex toy retailers have also reported substantial bumps in sales from 40% to 80% over this time last year for non-WiFi or Bluetooth connectable sex toys.²⁸ According to BusinessInsider, sex toy sales in the UK have risen 126% over April 2019 with particular emphasis on quiet and discreet vibrators, as well as a 173% increase in sex toys for men.²⁴ This shows there is likely an increasing social acceptance for use of these types of products which may be attributed to the feelings of isolation associated with social distancing. The new development and acceptability of sex toys may bring challenges for physicians as the medical field will likely have to educate patients on safe handling of these devices. However, adult toys and virtual sex may assist physicians in decreasing unintended pregnancies and spread of sexually transmitted infections during and after this pandemic.

Impact of Coronavirus on Sexual Health

The current COVID-19 pandemic comes at a critical point for sexual health in the United States. In a press release on October 8th, 2019 the CDC reported a continued rise of STDs in the US with cases of syphilis, gonorrhea, and chlamydia at an “all-time high”.⁸ If left untreated STDs can have lifelong consequences. Without treatment syphilis can result in neurosyphilis which manifests as “chronic meningitis, meningovascular stroke-like syndromes, and progressive dementia mimicking a variety of psychotic syndromes”.²⁹ Other long term manifestations of STDs include infertility, ectopic pregnancies, miscarriages, newborn death, and cancers, as well as numerous other morbidities.⁸ Furthermore, a plethora of complications result from STD acquisition during pregnancy--birth defects including deafness, blindness, prematurity, and death.⁹ Unfortunately the CDC reports a “40 percent increase in congenital syphilis cases...in recent years”.⁸ STDs are treatable and are often caught and corrected early in pregnancy; however, changes in access to healthcare may have affected this. The CDC has recognized multiple factors that contribute to the overall increase in STDs; many are likely to be exacerbated by this pandemic: poverty, unstable housing, decreased condom use, cuts to STD programs at the state and local level, and reduced patient follow-up.⁸

In addition to these factors, there may be a correlation that exists innately between disasters and STD transmission. Following Hurricane Katrina in 2005, the number of teenagers testing positive for gonorrhea doubled; meanwhile, latino migrant workers reported an increase in risky sexual behaviors and low condom use.^{19,25} Although a natural disaster and a pandemic are not equivalent in all aspects, they certainly mimic each other in producing times of stress and uncertainty. Thus, there could certainly be a similar rise in risky actions following this pandemic, adding to the already massive epidemic of STDs. The confounding factors of changes in sexual practice and reduced access to healthcare may be the perfect storm to worsen an already blustering STD epidemic. Although, with new technologies changing how people experience sex and dating a rapid spike in STDs might be avoided.

A post-pandemic increase in STD rates may be population specific, potentially affecting lower socioeconomic status individuals more. This phenomenon has been studied in healthcare in a general aspect. There exists a correlation between income and healthcare: as income inequality has proliferated so has healthcare inequality.³ Higher income improves life expectancy. In the United States, the difference between the life expectancy of the top 1% and bottom 1% is nearly 15 years.¹⁰ Life expectancy in the bottom quartile of income appears to correlate with health behaviors. Income inequality very well could play a role in which demographics we see STD spikes. In addition to having greater access to health resources, those capable of purchasing more advanced sexual technologies may have more options to fulfill their sexual desires without risk of contracting disease, as teledildonics may be cost prohibitive for some. It is unknown whether there is a substantial difference in purchasing of these technologies based on income, but this could be studied in the future. Given that a worldwide pandemic in an age of enhanced virtual sexual experiences has never been seen before, it is difficult to predict if the availability of advanced sex technology will reduce, or change the distribution of, a post-pandemic STD spike. Additionally, it is unclear at this time if the increase in purchases of teledildonics is directly reducing in-person sexual contact.

Another demographic that is certainly a vulnerable population during this time are those living with HIV who may suffer a particular drop in care as many clinics are closing and healthcare workers are being moved around in response to this emergency.³¹ Although physicians are recommended to give multiple months prescriptions of antiretrovirals to alleviate the risk, there is still a potential that an increase in perceived difficulty to get antiretroviral medications may lead to a decreased usage.³⁶ Those who have grown accustomed to being “undetectable” may put their sexual partners at risk during quarantine. Another vulnerable population during this time is women of child bearing age. An online pharmaceutical company in the United Kingdom reported a 23% increase in sales of the morning after pill.²² This may represent an increase in sexual activity and decrease in access to other contraceptives. Reduced access to contraception and health services may lead to an increased number of unwanted and unplanned pregnancies. At the same time, reduced access to safe abortions, vaccines, and STD treatment may cause significant maternal and fetal complications.

Given these circumstances, a spike in STDs is a valid clinical concern, creating a pressing need for increased public education on sexual safety. In addition to spreading STDs, sexual activity may play a role in transmission of COVID-19, which has recently been identified in the semen of patients in the acute stage of infection as well as individuals reaching clinical recovery.²⁰ At this time the potential for sexual transmission cannot be ruled out and further bolsters the need to include preventive safeguards such as condoms and safe sex practices in discussions regarding protection from COVID-19.²⁰ While we cannot yet report how many states have discussed safe sex practices in their COVID guidelines, we can say that only 29 states have sex education mandated by law. According to Planned Parenthood, even in states that have mandated sex education in schools, the information provided may be inadequate and fail to cover topics needed for the health of young people. Currently, less than half of high schools are providing sex education that covers what the CDC considers essential.³⁰ This limited amount of sex education exists despite evidence that sex education reduces the risk of teenage pregnancy and sexually transmitted diseases including HIV.⁴ Many of the states who do not mandate sex education boast

the highest teenage pregnancy rates and the highest STD rates.^{6,7} Some states, such as New York²⁶, are already being proactive about educating about sexual practices in this pandemic. Educating the public may prove to be a crucial intervention to prevent further rise in the incidence of STDs.

Individuals in China who perceived they had a higher knowledge of the pandemic had smaller decreases in emotional well-being, suggesting that knowledge can serve as a protective factor during the pandemic.³⁷ Additionally, emotional well-being has been demonstrated to directly affect sexual satisfaction.⁵ Thus keeping a population informed may enhance their well-being and indirectly improve their sexual satisfaction. New York City published a set of detailed guidelines on sexual behavior in the context of social distancing.²⁶ The guidelines use direct language such as “you are your safest sexual partner” and “you should avoid close contact-including sex- with anyone outside your household”, providing clear information to help individuals stay safe. Washington D.C. also published similar guidance online regarding sexual behaviors educating that sexual activity such as kissing or rimming can facilitate transmission of COVID-19.¹⁴

Future studies should evaluate if the actions taken by these cities aided in adherence to social distancing, increased healthy sexual behaviors during the pandemic, decreased risky sexual behavior, and reduced the transmission of COVID-19. While no data has yet been published on sexual activity in the United States specifically during the coronavirus pandemic, it will be interesting to compare how the response to these guidelines in New York and Washington D.C. compare to states with less transparency and forthcoming information regarding sexual behavior in their social distancing guidelines. How these guidelines will affect the spread of coronavirus is unclear, however we predict that states who are more clear and specific about safe sex guidelines will have smaller spikes in STDs after this pandemic.

Conclusion

This paper has addressed the ways that the COVID-19 pandemic has had an effect on sexual behavior. With the paucity of data available at the present, it is difficult to say whether sexual activity has truly increased or decreased during quarantine, and in reality, the trends in sexual activity may be regionally dependent. Additionally, this paper pointed out that traffic to pornographic websites and purchasing of adult toys has been on the rise during quarantine, but how this will translate into sexual activity after quarantine is difficult to predict. Regardless, public policy should be directed at educating the public about sexual safety/hygiene to prevent transmission of STDs. Additionally, the medical field should use their platform to educate on safety and preventative measures for both COVID-19 and STDs. Although the authors acknowledge that those in political office do not have absolute power over their constituents' choices, an example should be set by their leadership. As residents of states who are traditionally more conservative in policy, we urge state leaderships to aid the medical community in educating the public about sexual health during this pandemic for the protection of individuals, for the protection of the generation who may be born out of this pandemic, and to decrease health expenses in the upcoming years. We recognize that our governments are surely

fighting a multi-headed beast and that funds likely need to be allocated to the economy, but educating the public is invaluable.

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