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CLARIFICATION

Sexuality during the COVID-19 pandemic: The importance of Internet[☆]



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Summary Coronavirus is an infectious disease that has affected many countries, changing daily life. For many individuals, sexual activity has decreased, physical contact within couples has been reduced. Obviously, to maintain a safe sex life, it is essential to know how to avoid the virus transmission. Distance creates irritability, fear, anxiety, endangering sexual life: it is reasonable to have sex between cohabiting partners unless one or both are at risk of infection. Despite this, the pandemic allows us to think of new sexual intimacies mediated by sext toys and technology. Not all distant couples are willing to have sex online, and it is difficult for singles to engage in casual sexual relations, so after the pandemic there will be many couples who will have to remodel and many singles who will seek a partner. Using the Internet to maintain active sexual activity appeared to be an excellent alternative to diminish the distance between partners or to increase online knowledge. The most common advice for separated couples was to maintain constant digital contact to alleviate nostalgia and lack. This was the springboard to use sexting, meeting via webcam or making a hot call that make the couple more uninhibited. Using the webcam, also sometimes with the possibility to use sex toys, could create also the opportunity to enrich the future sexual repertoire. Practicing online sex with the stable partner far from home has helped some to keep their desire active and to satisfy it in order to be able to realize it once the pandemic has ended. The purpose of this narrative review of available evidence on sexuality during COVID-19 pandemics is to provide recommendations to help people facing their sexual life in this critical period.

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Introduction

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In 2020, the world was struck by an infectious disease, SARS-CoV-2, which began in Wuhan (China) and then quickly spread throughout the world. Between the 31 December 2019 and of the 27 November 2020 there were

60,534,526 confirmed cases of Covid-19 (in accordance with the applied case definitions and testing strategies in the affected countries) and a reported 1,426,101 deaths ([World Health Organization, 2020](#)). The most common transmission routes of the novel Coronavirus include direct transmission (through coughing, sneezing and droplet inhalation) and contact transmission (contact with oral, nasal, and ocular mucous membranes) ([Qiu et al., 2020](#)). Respiratory droplets and physical intimacy, which implies being within someone's personal space (e.g., hugging and kissing), are the two main vectors for the transmission of SARS-CoV-2 ([Chen et al., 2020](#)). Humanity has witnessed a high and rapid increase of mortality, especially among the elderly who have been obliged to face the disease and die alone, in intensive care wards, without the proximity of their loved ones. In many countries, people have felt in danger while being isolated and quarantined for almost three months. They had to reduce or entirely eliminate all close social contact and live their lives within their own homes. It has been a difficult period for everyone: children and adolescents have been unable to attend school and see their companions or friends, unemployed women and men have been trying to survive on their savings and some elderly people have been left alone at home or in retirement homes. Everyone has had trouble dealing with the situation of stress and discomfort that has threatened our lives and those of our families. Sexuality has undoubtedly been a very important part of this and may have been subject to variations for those who have had to spend three months apart, for people who have only been able to see their partners via smartphone, or for married couples or cohabitants forced to live together for 24 hours a day, sometimes with children and/or with parents (quite rare nowadays); a situation that may have strengthened their relationship or, to the contrary, created new problems. Covid-19 has also affected sexuality among adolescents, young people and adults, transforming their attitudes towards long-distance couples.

Materials and methods

We included in this narrative review all the literature found on the specific aspect of sexuality in the Covid-19 era. Using Pubmed and PsycInfo, we ran a search for the following terms: "sexual" and "Covid-19"; Covid-19; coronavirus; 2019-ncov; ARS-Cov-2; Cov-19. We found a total of 337 articles (Covid-19 or coronavirus, or 2019-nCoV, or SARS-CoV-2, or Cov-19). We selected all the articles written in English, originating from Western Countries, to facilitate cultural interpretation and access to the full text, based on the availability of data presented. After reading the abstracts, we selected 28 articles based on their contents and aims. After reading the full text, we selected 20 articles for this review. In the following paper we will discuss sexuality during the Covid-19 era, considering different aspects such as sexual health and function, masturbation, relationships and sexual transmission, also in specific subgroups such as youths and LGBTQ.

Sex during the pandemic

The pandemic has obviously complicated sexual intercourse, changing social relations around the world due to restrictions and the fear of contracting the disease ([Van Doremalen et al., 2020](#)). The fear of contagion brought sudden change, giving people no time to adapt to the new situation – a dramatic period during which images of disease and death were broadcasted daily on social media. The literature has examined the psychosocial responses of the population to the grave situation and the most frequent topics are fear, depression, anger, a sense of guilty, pain and loss, post-traumatic stress and stigma ([Pan et al., 2020](#)). Everything has been turned upside down, daily routines and freedom have been restricted, there has been a loss of independence and a loss of work, which has instilled a sense of uselessness among men and a sense of helplessness in the face of the emergency ([Qiu et al., 2020](#)).

Couples have been weakened by being confined at home together for 24 hours a day, space limitations, quarrels between cohabitants and differences of opinion. But all negative emotions also have a negative impact on sexual intercourse, in fact sexual health is part of emotional and social well-being ([Li et al., 2020](#)). During this period, sexual relationships between partners have suffered; in couples with children, the negative impact has been reinforced by the continuous presence of children at home, due to the closure of schools, and consequently the difficulty in seeking and finding moments of intimacy. Sexuality is greatly influenced by sexual desire and the latter is inhibited by negative moods. Indeed, emotions such as anxiety and depression have been associated with low levels of desire. To the contrary, those who were in a stable relationship but did not live together have felt strong mutual desire that they have been unable to satisfy due to the restrictions imposed. In these cases, however, the use of Internet has potentially been the source of a different sexual experience, even though not all couples were willing to engage in online sex.

The situation has been different for single people for whom casual sexual intercourse has been made difficult. For those accustomed to extramarital intercourse (at work or elsewhere), there has been no opportunity to fulfill their sexual desires, firstly because almost employment has been reduced and secondly due to forced coexistence and limited outings ([Chen et al., 2020](#)). Considering the WHO guidelines on social distancing and sexual abstinence, facing the pandemic has been tough for those without a stable sex partner. Hence, a safe recommendation for people who wanted to satisfy their sexual needs without the risk of infection has been masturbation ([Turban et al., 2020](#)). According to [Kaplan \(1974\)](#), masturbation is a construction and should fulfil sexual fantasies. Furthermore, the quarantine could be viewed as an opportunity to create new fantasies and discover new preferences through documentaries, films and educational materials. Not only have psychological implications decreased sexual desire, but logistical problems have also reduced sexual relations. A British study presented data from a cross-sectional epidemiological online survey ([Jacob et al., 2020](#)). In this sample of 868 British adults self-isolating owing to the Covid-19 pandemic, the prevalence of sexual activity was lower than 40%. In an American study

conducted on couples (Lehmiller et al., 2020), many participants (43.5%) reported a decline in the quality of their sex life, with the remainder reporting either no change (42.8%) or an improvement (13.6%). An Italian study (Schiavi et al., 2020) confirmed a decrease in sexual function and quality of life, in women of reproductive age, during the social restriction period due to the Covid-19 epidemic. Despite the extended cohabitation time, women who live with their partners have significantly reduced sexual activity. Specifically, the proportion of women who engaged in sexual intercourse ≥ 4 times a month, prior to governmental measures, decreased significantly.

A Polish study (Fuchs et al., 2020) also found that the number of women with sexual dysfunction (overall FSFI score of 26 or below) before the pandemic was 15.3%, while this figure increased to 34.3% during total lockdown. They also found a decreased frequency of sexual intercourse compared to the previous period. The majority of women declared that the reason might be associated with isolation from the partner (41.5%), 39.3% felt a lack of desire caused by stress, and 16% declared that misunderstandings with their partners were among the causes. Finally, only 3.2% women feared that SARS-CoV-2 could be transmitted during sexual contact. Similar results were found in a Turkish study (Yuksel and Ozgor, 2020). Participants had significantly better total FSFI scores before the pandemic than during the pandemic (20.52 vs. 17.56, $P=0.001$). However, the differences regarding lubrication and pain between the two time periods were not statistically significant ($P=0.503$ and $P=0.121$, respectively). The other three domain scores for arousal, orgasm, and satisfaction were significantly higher before the pandemic than during it (3.34 vs. 2.17, $P=0.001$; 3.47 vs. 2.02; $P=0.001$; 2.97 vs. 2.45; $P=0.045$, respectively).

In an Australian study (Coombe et al., 2020), participants reported an equal median of sexual partner (one) in 2019 and during lockdown. However, 89.8% (847/943) reported sexual activity in 2019 and 60.3% during lockdown. Most participants (53.5%) reported having less sexual activity during lockdown than during 2019, with a small proportion (14.3%) reporting that they were having more sex. There was no difference in the frequency of sexual activity by gender, although this did vary according to sexual orientation ($P<0.01$) and relationship status ($P<0.01$). Across all variables, men who have sex with men (MSM) were the most likely to report having less sex than in 2019 (70.0%) and those in a cohabitating relationship were the most likely to report having less sex with a girl/boyfriend (41.8% vs. 45.1%); or with a casual hook-up (7.8% vs. 31.4%). Singles had significantly less sex with a girl/boyfriend during lockdown compared with those in cohabitating relationships (26% vs. 0.9%; $P<0.01$). A smaller number of participants (1.2%) reported having participated in group sex, swinging or threesomes since the lockdown, compared with 2019.

Regarding sexual activity, when participants were asked if they had changed their sexual practices because of Covid-19, 14.6% reported that they were using *sex toys* more often on their own and 26.0% reported that they were masturbating more. When stratified by frequency of sexual activity during lockdown, those who reported less or no sex during lockdown were more likely to report using *sex toys* alone (18.3% vs. 8.3) and masturbating alone (35.6% vs. 10.3%), compared with those who reported the same amount or

more sex since Covid-19. A total of 98 participants (11.5%) reported that they bought a *sex toy* during lockdown and of these, 24% indicated that this was their first (Coombe et al., 2020).

Sexual transmission

Studies have shown that the virus is present in saliva, so kissing, which is the most common practice during sexual intercourse, is very risky during the pandemic. Unfortunately, fecal-oral transmission is also possible, as the virus has been found in the feces samples of infected patients (Ott and Santelli, 2007) and in the seminal fluid and urine of infected people. However, there is no evidence that Covid-19 is transmitted through vaginal or anal intercourse, but there is some evidence of oral-fecal transmission and this implies that anilingus may represent a risk of infection. Infected pregnant women who had a vaginal delivery have not given birth to infected babies, but SARS-CoV-2 may be present in the semen of recovering patients (Eaton et al., 2018). The disease may be present in the male reproductive tract and although the virus cannot replicate, it can persist. In this case, if it is present in the sperm, then it would be essential to prevent transmission through abstinence or the use of condoms (Centers for Disease Control and Prevention, 2020). Sexual expression is a central aspect of health; sometimes this aspect is neglected by health professionals and many individuals can develop insidious thoughts at a particular moment, when mental health is most susceptible. For example, some groups representing sexual and gender minorities may be victims of sexual stigma, as revealed by the trauma caused by other pandemics such as AIDS. Therefore, recommending abstinence may evoke memories of stigmatization and prolonged abstinence is unlikely to be effective, given the well-documented failures of public health interventions on this subject (Ott and Santelli, 2007). Abstinence is the most basic approach to sexual health during the pandemic, in fact, during a pandemic, masturbation is a further safe recommendation for people to satisfy their sexual needs without the risk of coronavirus infection.

Sexual health is everyone's right and sexual activity is a fundamental part of life and physical health in general. Poor health can affect sexuality, as is the case for diabetes, chronic pain, depression, heart disease, and cancer, which can impair sexual function. Quarantine during the pandemic has compressed sexual activity and little information has been given on how to maintain good sexual health. WHO defines mental health as "a state of physical, mental and social well-being" and not just the "absence of disease" and in times of pandemics, mental health is extremely important (Sayers, 2001). Sexual health is essential part of the general health of couples and families. Studies have correlated sex with greater mental health satisfaction, increased levels of intimacy and love in relationships, improved ability to perceive, identify and express emotions, and the reduced use of defense mechanisms (Zhang et al., 2020).

Sexual desire

In a Spanish study (Ballester-Arnal et al., 2020), the total sample was divided into three quite similar subgroups. Approximately one third, 35.9%, stated that they had greater sexual desire during confinement, 34.9% had less desire and 29.1% nearly the same. However, there were significant differences according to gender. Women represented a significantly higher percentage (37.8% of the female participants), among those who felt more desire than usual, than men done (29.1% of the male participants; $\chi^2 = 15.844$, $P = 0.015$). In general terms, desire decreased among men while it increased among women.

An Italian study (Panzeri et al., 2020) found that 12.1% men and 18.7% women perceived an increase in sexual desire during the lockdown, while 18.2% men and 26.4% women perceived a decrease in sexual desire. Men (15.2%) and women (20.9%) observed an increase in arousal during the lockdown, while 12.1% men and 20.9% women observed a decrease in arousal during the same period. Moreover, women found it more difficult to reach an orgasm than men (6.1% men, 17.6% women), while in comparison with the pre-lockdown period, men reported reaching orgasms faster and more frequently than women (15.2% men, 3.3% women).

In relation to the three main areas of research (sexual desire, arousal, and orgasm), most of the participants reported no changes with respect to the pre-lockdown period. For both sexual desire (69.7% men and 54.9% women) and arousal (72.7% men and 58.2% women), men predominantly stated that they did not notice any difference, while for orgasms, there was hardly any difference between genders (78.8% men and 79.1% women). Finally, 9.1% of the men and 26.4% of the women declared that their sexual intercourse frequency had increased during the lockdown, whereas 24.2% of the men and 30.8% of the women reported a decrease in frequency. These results show that there may be gender differences in the way the lockdown influenced the frequency of sexual intercourse, seemingly because this aspect of sexuality is more easily influenced in women. These conclusions are further confirmed by the fact that more men than women answered that they perceived no difference at all (76.7% men, 42.9% women).

Youths, minorities and sexual health: the use of the Internet

Youths

A survey on adolescents (Orben et al., 2020) showed that 10% of them masturbated during the lockdown. The survey also underlined that 16% of the sample used chat and social media for sexting and 5.5% used dating applications. The literature would suggest that the amount of free time, lack of intimacy with other people and the stress caused by the pandemic has increased masturbation and porn consumption.

The use of digital communication has been a good strategy to maintain a certain level of sexual activity during the pandemic, and has translated in a reduced consumption of pornography. The state of alarm forced everyone to stay at home, changing interpersonal relationships and sexual

habits accordingly. In fact, Pornhub (Coronavirus Update, 2020) statistics relative to the use of pornographic material reflect this situation. During the lockdown, the website offered free access to the Premium version to encourage everyone to stay at home to ensure physical distancing. It became evident that as people were spending more time at home, either self-isolating or working at home, that traffic to Pornhub had risen. Worldwide traffic to Pornhub was up 11.6% on March 17th. The largest use (31.5%) occurred in early morning, as people who did not need to go to work the following morning spent more time on the site. Traffic at around 1pm was also higher, when most people usually sit down for lunch. Covid-19 has had a severe impact on sexual and reproductive health, even among young people and adolescents. Young people who studied away from home were forced to return and give up their independence, weakening relations between peers (Orben et al., 2020). The effects of this deprivation of privacy and physical contact with peers are uncharted territory and the repercussions will be seen in the long term. For most young people, social distancing has led to a reduction in sex, but during the first peak of the pandemic, about one third of young people reported that they were still meeting close friends and having sex (Orben et al., 2020). In fact, the consequence of physical distancing has been online entertainment, today's young people are digital natives and are used to communicating via Internet (Common Sense Media, 2020). The medium offers various types of interactions, including conversations, online dating, sexting, virtual sex and other online activities (Scott et al., 2020).

The pandemic has raised obstacles to contraceptive and other services for young people of all ages, and recently a group of doctors offered guidelines and practice protocols for providing young people with contraceptives as an essential service, despite the difficulties caused by the disease, as well as strategies to maximize access and privacy (Wilkinson et al., 2020). The use of remote medicine has expanded, but many aspects make it particularly challenging for some age groups (Williams et al., 2018). Everyone has their own private life, but it is difficult for young people to achieve a certain degree of privacy within their own home, making remote consultations difficult (Committee on Adolescence and Council on Clinical and Information Technology, 2012).

LGBTQ

Pandemics always raise barriers to the care of LGBTQ youth, young people in foster care or detention centers and of most vulnerable young people (Tyler and Johnson, 2006). A study on adolescents belonging to sexual minorities found an increasing rate of masturbation in 13% of the sample (Nelson et al., 2020). LGBTQ youth are more likely to have poor mental health and well-being than their non-LGBTQ peers. The research findings are related to experiences of discrimination, victimization and rejection by their family, their peers and communities. LGBTQ youth are therefore likely to be severely impacted by the physical distancing implemented to contain the spread of Covid-19. Physical distancing can also result in confinement within insulated domestic environments lacking in support. Such circumstances are associated with mental health disorders (e.g.,

depression and suicide) and a high likelihood of engaging in health risk behaviors (e.g., use of drugs and self-harm) (Russell and Fish, 2016). Yet, LGBTQ youth may be more likely than their non-LGBTQ peers to search for resources and online communities (McInroy et al., 2019). A study on adolescents belonging to sexual minorities found an increased rate of virtual sex in 10% of the sample and the use of pornography in 5% (Nelson et al., 2020). An Israeli study on MSM revealed that, in defiance of social-distancing restrictions, 39.5% of the sample had met a new casual sex partner during that period. 84% of them had had up to 3 sexual partners, while 2.1% had met more than 10 sexual partners, and 2.4% reported taking part in in-house orgies. Men who engaged in casual sex despite the social-distancing regulations were more commonly younger, single, and less educated compared with participants who abstained from casual sex. They also exhibited higher levels of mental distress and lower levels of well-being compared with those who abstained from casual sex. Among those who had casual sex during the social-distancing period, 72.1% reported that the number of casual sex partners was lower than in the pre-social-distancing period. Participants also reported having reduced their risky sexual behaviors in comparison with the pre-social-distancing period. Specifically, they were less likely to kiss their sexual partner, indulge in anal or oral sex, consume illicit drugs or alcohol during sex and pay or be paid for sex. During the social-distancing period, they were more likely to use condoms or PREP during casual sexual intercourse than in pre-pandemic times. Since the imposition of social distancing rules, participants have met sexual partners mainly through online dating applications and social media and have increased their use of sex phone, webcams, and porn as compared to the period prior to the COVID-19 outbreak (Shilo and Mor, 2020).

Sexual health

Even access to abortion, due to logistical and economic challenges, has been a problem for young girls. In fact, on 19 May 2020, eleven American states took advantage of the pandemic to ban or limit access to abortion, considered to be “non-essential health care” (Jones et al., 2020). In America, young people can access SRH services in health centers, which offer mental health services, counseling, social services and resources such as condoms, birth control pills and treatment of sexually transmitted diseases.

The solution could be to reach out to vulnerable populations, such as young people, to offer care. They could promote the use of products such as condoms, self-administered hormonal contraceptive injections, online platforms that send oral contraceptive pills and screening kits for the treatment of sexual disease at home. This would help young people to take care of their health, by preventing unwanted pregnancies or avoiding disease.

Another important element is sex education, essential for sexual and reproductive health; this has already been limited in many countries on the American continent (Brener et al., 2017) and, with the pandemic, has probably not been included in online lessons. As a result, young people search online for information, but this is often inaccurate and does

not contain specific information (Strasburger and Brown, 2014).

Hope may be found if health-care professionals were to offer their time to listen and advise their patients in difficult times. In addition, there is a need to improve professional knowledge and skills and to approve the central role of health services in sexual counseling. The latter could be facilitated through the use of call centers and mass media such as: hotlines, online consultations, online chats, email counselling, VIH testing, advice in the fields of involuntary pregnancy, fertility and natal care, violence and abuse and cancer screening (Kirana and Tripodi, 2020). Precisely because of the important role played by sexuality in most peoples’ lives, healthcare professionals should consider the idea of approaching patients on this topic whenever possible.

During a pandemic, human beings develop new needs due to the trauma suffered: trauma is defined as a deeply distressing or disturbing experience. After the pandemic, some people may develop post-traumatic stress disorder, in which a person experiences intrusive negative thoughts and psychological distress. This aspect should currently be underlined during sexual counselling, in an attempt to consider the impact of the pandemic on sexuality.

Conclusions

During this pandemic, people have been watching news, seeing what was happening in China, South Korea and Italy, and anticipating that the same situation might arise within their local community. People have felt the psychological consequences of trauma well before the actual trauma was experienced. This could be called a “pre-traumatic” stress disorder. It is clear that the trauma is still not over and more is probably yet to come. Within this context of great uncertainty, people continue to live their lives. In or out of lockdown, there remains a need for contact, love, flirting and sexual expression. These human needs may be amplified or reduced, but they are still there. The clinical significance of the dynamic interplay between sexual well-being, individual-specific psychological factors and the social environment during the pandemic, remains to be elucidated. For the predictable future, health care professionals will need to incorporate new scientific advances regarding COVID-19 into how they think about sexual health and risk (Turban et al., 2020).

Health care professionals should consider all of these aspects, within the complex variability that will soon appear, in order to provide advice that will allow people to have the most pleasurable sex life possible while ensuring the highest possible personal and social security. The important role of the Internet in this new scenario should be assessed, evaluated and considered as a tool for the enhancement of sexual health (Eleuteri et al., 2018), especially within the context of the Covid-19 pandemic.

Disclosure of interest

The authors declare that they have no competing interest.

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