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Considerations about the COVID-19 pandemic and its effects on fertility and sexual and reproductive health of Brazilian women*

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Introduction

Just over a month after declaring the Coronavirus epidemic (COVID-19) a “Public Health Emergency of International Concern”, on March 11, 2020, the World Health Organization (WHO) raised its alert level and declared it a pandemic (WHO, 2020a). Around the world, until September of that year, the number of confirmed infected cases exceeds 29 million, and the number of deaths exceeds 925,000 (WHO, 2020b; PAHO, 2020). In Brazil, since the first recorded case on February 26th to September 15th, the number of confirmed cases of COVID-19 is over 4.34 million, and deaths exceed 133,000 (CONASS, 2020), the second highest value in the American continent (WHO, 2020c).

Until scientists develop a vaccine for the SARS-CoV-2 virus, mitigating COVID-19 through the practice of social distancing is one of the most effective measures to contain the spread of the disease and prevent the collapse of health systems due to an excess of demand for care and hospitalization (AQUINO *et al.*, 2020; BORGES; CRESPO, 2020; LIPPI *et al.*, 2020; THE LANCET RESPIRATORY MEDICINE, 2020). Defined as the reduction of social interactions in the communities, social distancing implies the closure of educational, commercial, and recreational establishments, among others, in order to avoid agglomerations that could

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favor the spread of the virus (AQUINO *et al.*, 2020). In this context, dubbed the “new normal”, the Brazilian family routine has undergone significant changes. For one, a considerable part of the population has transitioned to performing their work activities from home, and/or have remained in their homes for a prolonged duration due to a decline in work and/or loss of support services such as child and elder care; which in turn implies an increase in domestic activities related to the care of children and the elderly. There is nothing to suggest that these are short-term changes. According to Miceli (2020), the number of companies hoping to adopt a home office policy is projected to grow by 30% after the COVID-19 crisis recedes. One can imagine a future in which such a shift in work behavior will shape, or at least, create unique consequences for, couples' daily lives, and therefore, for their reproductive preferences.

In several regions of the world, researchers have asked themselves what the impacts of COVID-19 on fertility rates will be (AASSVE *et al.*, 2020; KEARNEY; LEVINE, 2020; LUPPI; ARPINO; ROSINA, 2020; MICELI, 2020; STOBE, 2020; UNIVERSA, 2020; VILLAS BOAS, 2020). It is possible that many couples of childbearing age are spending more time together during the COVID-19 pandemic, which implies an increased exposure to sexual intercourse. At the same time, the social impact of COVID-19 can be felt in other social spheres and contributes to a reappraisal of reproductive plans. These changes refer to a deterioration in health, job loss and unemployment, closures of businesses and enterprises, and the loss of loved ones and people in their interpersonal networks, which can affect the decision to have or not have (more) children.

In order to identify the possible consequences of COVID-19 in fertility behavior, we looked at the literature on the consequences of exogenous crises, such as environmental changes, economic shocks and public health crises. The literature points out that in scenarios of public health crises and catastrophic events there may be a temporary reduction in the number of births, typically followed by a recovery in the first five subsequent years. In other words, one can observe an increase in fertility in response to improvement in the economic, social and public health sectors (STONE, 2020). The high mortality episodes studied include the Spanish Flu that claimed 50 million lives worldwide between the years of 1918 and 1919, Hurricane Katrina, which in 2005 killed over 1,800 people in the United States, and the Ebola epidemic, which originated in 2013 in West Africa and resulted in approximately 11,000 deaths. However, in Brazil, and most countries strongly affected by COVID-19 to date, the social context of fertility is already below the replacement level, aided by easy access to highly effective contraceptive methods (CAVENAGHI; ALVES, 2019; GBD 2017 POPULATION AND FERTILITY COLLABORATORS, 2018). This social context may have different implications than those observed in other episodes recorded in the history of high mortality, especially regarding the possible increase in the number of births. Today's attitudes and social norms about ideal family sizes are very different from those at the beginning of the 20th Century. In the context of the Spanish Flu there would be an incentive for recovery and even an increase in fertility in the face of an external shock,

since children were perceived as potential providers of labor and of material security in their parents' old age. In agrarian societies like some countries in sub-Saharan Africa, high fertility regimes still prevail, and the intergenerational flow of wealth is still directed from the younger generations to the older ones. However, considering that the crisis caused by the new coronavirus also deepens the economic stagnation in which these countries are immersed, fertility may decline in the short term without great prospects for an increase in the medium to long term even in those localities (AASSVE *et al.*, 2020).

In the specific case of Brazil, the country is still recovering from the Zika virus epidemic, declared a public health crisis of international concern by the WHO in 2016 (GARCIA, 2018). At the time, recommendations to postpone pregnancies coupled with fear of the virus's most severe consequence – microcephaly in newborns – resulted in decisions to postpone pregnancies (MARTELETO *et al.*, 2017) and a decline in the number of births (CASTRO *et al.*, 2018). However, the decline was more pronounced among younger, educated women who were geographically closer to the epicenter of the epidemic, which demonstrates how the same shock can be suffered and faced differently by different social groups (MARTELETO *et al.*, 2020).

COVID-19 also presents other peculiarities relevant to social analysis, such as the association of the most severe cases with pre-existing conditions (BORGES; CRESPO, 2020; NEPOMUCENO *et al.*, 2020) and a greater chance of infection in places where there is greater circulation among people and more precarious general conditions. This is the case for residents of the favelas and suburbs of large cities (usually less developed than central areas in Brazilian capitals). These circumstances, in addition to presenting poor sanitation and housing infrastructure, also have higher unemployment rates, a higher concentration of informal and insecure employment arrangements, and of jobs that require physical, on-site presence (cannot be replaced by home office) that in turn require the use of public transportation, therefore creating greater exposure to infection. These challenges to individual protection and social distancing suggest that the effects of COVID-19 should vary according to socioeconomic and demographic profiles (CORDES; CASTRO, 2020; FIOCRUZ, 2020).

The overload on the health system imposed by the pandemic can also be reflected in the quality of women's health care, from the availability of contraceptive methods in health centers, to the early diagnosis and treatment of diseases and illnesses, to the quality of prenatal care provided to mothers. These effects can have consequences on the health of the population, especially the most vulnerable. According to gender experts:

Recognising the extent to which disease outbreaks affect women and men differently is a fundamental step to understanding the primary and secondary effects of a health emergency on different individuals and communities, and for creating effective, equitable policies and interventions. (WENHAM; SMITH; MORGAN, 2020, p. 1)

When considering the factors that could impact the fertility of Brazilian women, we are faced with those that can cause an increase, albeit temporary, in the number of births,

but also factors that can contribute to the lowering of fertility in the short and long term. Often, the multiple social determinants of fertility operate in opposite directions or are quite different according to socio-demographic characteristics, which may preserve the total Brazilian level without major changes. The existence of multiple determinants indicates the importance of stratified analyzes. While it will take many months to determine the immediate effects of COVID-19 on fertility rates, it is possible to anticipate them and shed light on those capable of exacerbating social vulnerabilities. We discuss some of these effects in the following paragraphs.

Factors that would increase fertility rates

Factors that could contribute to an increase in fertility rates due to the COVID-19 context can be divided into two major groups: those related to difficulties and loss of access to sexual and reproductive health services, and those related to issues of social distancing, such as sexual and gender violence, mental health problems, and evaluation of parental costs.

It is interesting to start the discussion of the first of these groups by pointing out that greater sexual exposure, that is, an increased opportunity to have sex because both partners are together at home for a longer period of time, could contribute to increased fertility. However, with the rise of contraception as an option, sexual intercourse can be detached from reproduction. It is widely known that social and behavioral factors are now more important for the definition of fertility than biological factors, such as sexual frequency of postpartum amenorrhea (BONGAARTS, 1978, 2001). In the case of Brazil, 78.2% of women who were in a marital union were already using modern and highly effective methods of birth control according to the National Health Survey in 2013 (CAVENAGHI; ALVES, 2019). If the proportion making consistent use of birth control has not changed during COVID-19, it is unlikely that spending more time with the partner will result in more pregnancies, even though the amount of monthly sexual intercourse may increase.

An important exception is in the case of loss of access to contraception, which is already precarious given that half of pregnancies are considered unplanned in Brazil (THEME-FILHA *et al.*, 2016). Specifically in the Brazilian case, Bahamondes and Makuch (2020) emphasize the importance of guaranteeing access to family planning services during the pandemic. In a recent interview, the authors highlighted the possibility of an observable increase in the number of births due to difficulties in accessing contraceptive methods and abortion procedures (STOBE, 2020). On this topic, the United Nations Population Fund (UNFPA) projects that more than 47 million women worldwide may have decreased access to contraceptive methods during the pandemic, which could result in 7 million unplanned pregnancies in the United States alone (UNFPA, 2020).

It is already known that public health emergencies can interrupt essential services and advancements in equity policies that are necessary in response to epidemics (BAUM *et al.*, 2016;

JOHNSON, 2017; PITANGUY, 2016; WENHAM; SMITH; MORGAN, 2020). In the case of the Zika virus, the disease itself and its containment have aggravated gender and class inequalities, as the most vulnerable women, especially pregnant women, poor women, black women and those living in areas with a high infection rate, were held responsible for mosquito control and postponing pregnancy via contraception (BAUM *et al.*, 2016; DINIZ, 2016a, 2016b; DINIZ *et al.*, 2020; NUNES; PIMENTA, 2016; PITANGUY, 2016; STERN, 2016). At the time, a protocol from the Ministry of Health (MS) highlighted the importance of access to information and contraceptive methods, but it did not remove any obstacles to this access, even ignoring the threat of unsafe abortion, which increased due to the fear of microcephaly (BAUM *et al.*, 2016). In the case of the Ebola epidemic in Africa in 2014, researchers saw the monetary funds for sexual and reproductive health diverted to emergency containment measures, which later caused an increase in maternal mortality and a drop in vaccination coverage (SOCHAS; CHANNON; NAM, 2017). In the case of COVID-19, the fear of, or impediments to, visiting health providers, is worsened by the Brazilian government's response in terms of production, distribution and disposal of contraceptives (KUMAR, 2020).

With COVID-19 already in its seventh month in the country, the Brazilian government's responses to the promotion of sexual and reproductive health are unsatisfactory. The federal government has issued no new federal measures to mitigate the loss of access to contraception such as facilitating access to effective long-term methods like the Intrauterine Device (IUD) and subcutaneous implantation, dispensing larger quantities of contraceptives for a longer period of use, providing face-to-face consultation for low risk patients, or instructing the use of emergency contraception (AMERICAN SOCIETY FOR EMERGENCY CONTRACEPTION, 2020; COVIDA, 2020). In addition, many health centers have limited access to healthy people as well as canceled elective surgeries such as vasectomies and tubal ligations (SILVA; FERREIRA; LARA, 2020; TOLEDO, 2020). Shortly before the start of the pandemic, in a technical note from December 2019, the Ministry of Health revoked a permission for nurses to perform IUD insertions (CNS, 2020), reducing access to this method of birth control for many women. With the advancement of the pandemic, the actions taken appear to run contrary to the goals of bureaucracy reduction and the strengthening of women's integral health (MINISTRY OF HEALTH, 2020a, 2020b, 2020c, 2020d).

Still, regarding the scenario in which the conditions of access to contraception have been impaired, one group in particular can contribute to the increase in fertility – adolescents. In most developed countries the fertility transition is marked by the postponement of the birth of the first child and by longer birth intervals. Brazil, as well as other Latin American countries, has been characterized, at least until the 2000s, by a high concentration of births occurring at early ages (ALVES; CAVENAGHI, 2009). Although the last two Demographic Censuses (2000 and 2010) show evidence of the beginning of birth postponement, it is relevant to point out that the pattern of Brazilian fertility remains young when compared to that of other countries with low fertility (BERQUÓ; CAVENAGHI, 2014). Therefore, it is reasonable to consider that a pandemic context combined with a

lower level of access to contraception may reverse the recent tendency of postponement (RODRIGUEZ VIGNOLI, 2017).

Loss of access to the educational system can be another major factor influencing adolescent fertility. The impossibility of attending schools for a reasonable period can lead to future permanent dropouts, which impairs the acquisition of human capital by young women and decreases awareness and knowledge of practices related to reproductive sexual health, which may lead to unprotected sexual relations. The Ebola epidemic is illustrative of how public health crises can drive adolescents out of schools and make them more vulnerable to sexual exploitation and rape (PLAN INTERNATIONAL, 2014).

It is in this context that Parkinson and Zara (2013) argue that crises and exogenous shocks can generate or amplify sexual and gender violence. In fact, the number of femicides has increased since the onset of social distancing (GLOBE, 2020). Alcohol abuse, stress, and financial difficulties, all of which are very common during pandemics, are factors that trigger domestic violence (LEWIS, 2020). Therefore, being quarantined in stressful environments may reflect more violence (DW, 2020; EVANS, 2020; LEWIS, 2020), which in turn can lead to a greater number of pregnancies, especially unplanned pregnancies, as was the case in Sierra Leone during the Ebola crisis (GOLDSTEIN, 2020; UNPD, 2015).

The first evidence of the effects of the pandemic on the mental health of those confined to quarantine are also beginning to be published (BROOKS *et al.*, 2020; FIORILLO; GORWOOD, 2020; OZAMIZ-ETXEBARRIA *et al.*, 2020). It is understood that depression and anxiety can contribute to risky behavior (SOLEIMANI *et al.*, 2017), and a reduction in perceived autonomy and self-sufficiency could result in greater fatalism (CARVAJAL *et al.*, 2014; MUÑOZ-SILVA *et al.*, 2007; SALES *et al.*, 2010; SHRIER *et al.*, 2011; STEINBERG; RUBIN, 2014), and, potentially, less use of contraception.

In addition to the increase in unplanned pregnancies, the pandemic can also represent a reduction in the opportunity costs of planned pregnancies, the so-called paradigm career *versus* family (GOLDIN, 2006; GOLDIN; KATZ, 2000). Since women, especially the more educated, have invested more time to their accumulation of human capital and in paid labor outside the home, being unemployed or working from home during the pandemic may reduce their opportunity cost to have children. Adsera & Menendez (2011) found patterns in Latin America that indicated that, at first, unemployment had a negative impact on the number of births, but for women who were out of work for a longer period of time, the effect was the opposite.

Factors that would reduce fertility rates

The effects of reduced fertility rates due to COVID-19 are categorized into four groups: 1) the increase in uncertainty regarding the future, which may cause the desire to postpone pregnancy to more favorable moments or even an entire reconsideration of reproductive plans; 2) a stressful family routine caused by confinement; 3) fear of

coronavirus infection during pregnancy and the consequences for the health of mothers, fetuses, and newborns; and 4) the possible decline in non-marital sexual intercourse that generate pregnancies. In the following paragraphs, we comment on each factor.

The *Uncertainty Theory* states that decision makers, in this case, couples, adopt a posture of minimization or complete risk aversion when the economic, social and/or personal context is uncertain. They may understand that their earnings or expected earnings are not sufficient to support a (additional) child, or even, that they are unable to provide what they consider to be the minimum support necessary (SIMPSON, 2007; TANTURRI *et al.*, 2015). It is important to mention that the uncertainty factor, in the Brazilian case, may be aggravated by the pre-pandemic economic crisis. In addition, it is possible that couples feel unable to engage in something as complex and long-lasting as starting a family, due to the present lack of stability or the conviction that the socioeconomic situation will improve. These dimensions of uncertainty fit not only in the current pandemic context, but also in the post-pandemic. Cohorts of young couples who go through the epidemic when planning their families will include in their rationale the potential for future public health shocks, which may stymie the growth of future fertility.

Research on reproductive intentions during the current pandemic has been carried out in Germany, France, Spain and the United Kingdom (LUPPI; ARPINO; ROSINA, 2020). In Italy, more than 80% of respondents in a study said they did not plan to have children during the pandemic. Among those who had plans to become parents before the start of the pandemic, almost 40% have already abandoned the idea, citing fears and uncertainties about the future economic context as main reasons for the decision (MICELLI, 2020). These studies find that in each of these countries, many women of child bearing age expressed a common decision to postpone starting a family, with many of them deciding against having children altogether. The results of these studies reveal important sociodemographic differences, as in the study by Marteleto *et al.* (2020) looking at the Zika virus's effect on the fertility decisions of women. Younger women (<25) were more likely to postpone or forego pregnancy while older women stayed on plan. Also, higher education and financial stability predicts a decision not to alter reproductive plans, while lower education predicts a decision to postpone, or forego, planning a family. Finally, in regions with the highest number of COVID-19 cases detected, abandonment or postponement of plans is greater (LUPPI; ARPINO; ROSINA, 2020). While young women can more easily postpone reproductive decisions, older women must weigh the likelihood that postponement will reduce the likelihood of becoming having children in the future (BONGAARTS; FEENEY, 2008), another factor to consider in the quantum effect of the epidemic.

New family routines imposed by confinement present the challenge of reconciling domestic work, childcare or school supervision, and employment at home as a paid employee; or outside the home at increased risk of infection. These stressors occur

within the context of high gender inequality that is already a problem in Brazilian society. It is safe to assume that women will take on the majority of unpaid labor required in the “new normal”, since social norms assign domestic work and childcare to women, and the labor market is designed to relegate lesser roles to them, characterized by lower pay and greater instability (LEWIS, 2020). A scenario featuring worsening gender equity at the family level along with the general stress arising from a new social arrangement is a plausible reason to expect reconsideration of reproductive plans.

A third reason for COVID-19 to negatively impact fertility is the concern for women's health. Although there is no evidence so far that infection during pregnancy has consequences for fetal health (SCHWARTZ, 2020), pregnant women and women in the puerperium are considered at risk because they are more vulnerable to infections due to compromised immune and physiological functions (DASHRAATH *et al.*, 2020). Studies show that pregnant women are at higher risk of presenting severe forms of COVID 19 requiring hospitalization (mechanical ventilation or admission to an intensive care unit) when compared to the non-pregnant population (ELLINGTON, 2020) or when compared to other family members in the same household (HANTOUSHZADEH *et al.*, 2020). In these studies, no difference in lethality was found. However, a study on developing countries, including Brazil, showed that pregnant women have higher mortality when compared to the rest of the female population, suggesting the importance of access to medical care and hospitalization, or the existence of some other underlying difference among women in low and high income settings (AMORIM; SOLIGO TAKEMOTO; FONSECA, 2020; TAKEMOTO *et al.*, 2020).

International associations for assisted reproduction recommended suspending attempts at fertilization during the pandemic period (ASRM, 2020; COCHRANE, 2020; ESHRE, 2020), primarily to avoid overloading the local health system and to respect isolation measures, and to allow for the redeployment of medical personnel to address urgent needs related to the pandemic. This policy also served to avoid any complications related to exposure to COVID-19 during pregnancy (ESHRE, 2020). As found by Miceli *et al.* (2020), one of the main reasons for postponing pregnancy involved precisely the possible risks that the disease might cause, in addition to concerns about the overcrowding of health services and the strain on the quality of obstetric and neonatal care.

Pregnancy, although a personal matter, is also a social experience. Support from family and friends can factor into the decision about the best time to conceive (GUEDES, 2020; SANTANA, 2020; TSUJI, 2020). Other shared customs such as setting up a nursery, throwing a baby shower, and visiting the newborn have undergone adaptations that can confound the ideal progress of pregnancy and puerperium. An online survey conducted with 250 pregnant and puerperal women across Brazil reveals that for 90.8% of them, COVID-19 changed their perspectives regarding pregnancy to that characterized by fear, insecurity and loneliness (SANTANA, 2020).

Regarding obstetric and neonatal care:

WHO recommends that all women, including those with COVID-19, be guaranteed a safe and dignified delivery experience, which includes respect for parturient and the intended / chosen delivery position, presence of a companion, clear communication from the health team and strategies for the relief of labor pains. (COVIDA, 2020, p. 28)

Recently, Brazilian medical federations instructed health professionals in maternity hospitals to avoid a series of actions that used to be considered good practice for delivery. These recommendations have been labeled exaggerated and have been called into question by organized sectors of civil society (EVANGELISTA, 2020; FEBRASGO, 2020). Internationally, discussions regarding the impact of COVID-19 prevention measures on neonatal health are also present (FAVRE *et al.*, 2020; SCHMID *et al.*, 2020).

Another element that can cause a decline in fertility, even if short term, is the decline of unwanted or unplanned pregnancies of adolescents or adult women originating from casual encounters that may have decreased during the pandemic. In an interview, Australian researcher Liz Allen points out that the “ingredients” needed for conception have been interrupted due to the impossibility of social interactions (AUSTRALIAN NATIONAL UNIVERSITY, 2020). Even with the massive presence of social networks and *apps* that bring people together and encourage them to experience relationships, the forced impediment of physical contact can cause a decline in pregnancies.

Although little explored in the case of the new coronavirus, it is worth mentioning the possibility of the temporary decrease in male fertility due to the febrile outbreak impacting the number of conceptions (EVENSON *et al.*, 2000; SERGERIE *et al.*, 2007) and a change in the popular mentality in relation to using hygiene measures, which in turn can increase the use of condoms in future sexual relations, as some reports in other developing countries already show (DEDHIA, 2020; STATISTA, 2020). Even after the end of mandatory social distancing, it is possible that the pandemic increases the feeling of insecurity and vulnerability to infections, causing changes in sexual behavior.

Conclusion

The purpose of this Point of View is to highlight some points for debate regarding the possible effects of the COVID-19 pandemic on the fertility of Brazilian women, as well as on their sexual and reproductive health. Without intending to estimate the size and magnitude of the effects, we consider factors that may contribute to the increase or decrease in fertility rates. Future studies will need to both describe them, and to examine the sociodemographic profiles to see which social group is most prone to each type of effect.

With regard to research agendas, COVID-19 brings with it a wealth of deserving topics to explore. The quality of relationships between couples, fertility planning, access, negotiation and use of contraceptives as well as the demand for long-term contraception, home distribution of contraception and emergency contraception – all are important issues to address in the

current pandemic. Surveillance will also be required to ensure non-violation of rights, as access to information and family planning is a right accorded by the 1988 Brazilian Constitution. The Zika epidemic demonstrated the necessity for women and couples to control their reproductive destinies. Unsafe abortions, which are often result of inadequate access to reproductive care, are responsible for a sizable proportion of maternal deaths in Brazil (CARDOSO; VIEIRA; SARACENI, 2020; DOMINGOS; MERIGHI, 2010), and primarily victimize black, indigenous, uneducated, and single women (CARDOSO; VIEIRA; SARACENI, 2020).

Other important factors deserve to be further explored that may contribute to deepening inequality affecting women. They include the severe consequences of COVID-19 infection on maternal and child health (KHOURY *et al.*, 2020); the paradox of increasing cesarean sections rates at the same time the rate of home deliveries is increasing; (DUARTE, 2020) and the lower incidence of premature births (PRESTON, 2020). Ellington's study (2020), despite missing data in medical records, suggests that in the United States, racial minorities (such as Blacks and Hispanics) are most affected by COVID-19 during pregnancy. Studies on prenatal and obstetric care, including obstetric violence, are clearly necessary.

Women who are able to plan fertility, and those who decide to have babies during this pandemic may be presented with unforeseen consequences in the areas of sexual and reproductive health, and child and maternal health. Future research and careful monitoring of the generation of babies born during the COVID-19 epidemic will be needed, as studies show how exogenous shocks can have harmful consequences for child development, with repercussions extending into adulthood (ALMOND, 2006).

Finally, it is important to explore gender intersectionality. Studies are needed to predict which women will be more vulnerable to having their fertility affected by COVID-19, as well as the dimensions and magnitudes of these effects. As the Zika epidemic has shown, high-income and educated women are able to mitigate adverse effects of public health shocks, not only avoiding pregnancies when desired, but controlling situations of vulnerability that expose them to greater risks. In the case of COVID-19, we can anticipate that low-income women with less education will be more subject to the wide range of negative consequences associated with lack of access to healthcare, including infection, unplanned pregnancies, and negative impacts on child health.

We emphasize that in addition to studying the effects of COVID-19 on reproductive health and planning – most of which are still indeterminate – we need to observe the pandemic's effect on women's healthcare programs in the Brazilian Unified Health System (SUS). The existing programs have already been diverted from their purpose, which was to provide comprehensive care to all women, not only just those in the pregnancy-puerperal cycle. Sexual and reproductive health services can be affected during any exogenous shock anywhere in the world, but it is certainly worse when the existing programs are neglected rather than considered essential service (KUMAR, 2020).

It was expected that the Zika infection would lead the way for significant improvements in the status of women's health in Brazil. And one would expect that the public health

response regarding sexual and reproductive care services would be more robust in the wake of a new epidemic given that recommendations were extensively detailed by experts at the time of Zika (BAUM *et al.*, 2016; DINIZ, 2016a, 2016b; DINIZ *et al.*, 2020; MARTELETO *et al.*, 2017; NUNES; PIMENTA, 2016; PITANGUY, 2016; STERN, 2016). But the Brazilian government's stance on the subject has been to reject norms designed to protect rights and reaffirm the state's commitment to this dimension of public health (HUMAN RIGHTS WATCH, 2020; NEM PRESA, NEM MORTA, 2020a; SEXUALITY POLICY WATCH, 2020).

The Brazilian Ministry of Foreign Affairs (Itamaraty) contested the World Health Organization (WHO) standards on reproductive and sexual services during the COVID-19 pandemic. The Ministry of Health revoked Technical Note n. 16/2020 – COSMU/CGCIVI/DAPES/SAPS/MS issued on 6/1/2020 by the Ministry of Health's Office of Coordination of Women's Health, which dealt with access to sexual and reproductive health in the context of the pandemic, even demoting public servants in leadership positions who worked in the division (ABRASCO; CEBES, 2020; FOLHA DE S. PAULO, 2020; MINISTRY OF HEALTH, 2020b). These and other actions imposed by radical wings of the federal government harm the whole society, but especially the minority groups such as the LGBTQI+ population, sex workers, and low income, poorly educated women who are dependent on the healthcare system for access to contraceptive methods and family planning education (ABRASCO; CEBES, 2020; NEM PRESA, NEM MORTA, 2020b; SEXUALITY POLICY WATCH, 2020).

Over seven months since the pandemic was first declared by the WHO, we see an increase in the number of new cases of SARS-Cov-2, and are witnessing a process of internalization of the disease throughout Brazil. Other problems, such as the delay in registering cases and deaths, low rates of testing and fluctuations in notifications, make it impossible to understand how the virus spreads (CANDIDO *et al.*, 2020). With regards to health policy, the future scenario is not promising, especially when the economic crisis is taken into consideration.

Meanwhile, the chair of the Minister of Health remains vacant, government officials insist on defending the use of drugs with unproven efficiency and denying facts and scientific evidence (WERNECK; CARVALHO, 2020). In turn, states and municipalities have the autonomy to impose their own measures to combat COVID-19. However, in a country with continental dimensions, the reactions are varied: some opt for non-pharmacological interventions (INF) while other urban centers are aligned with federal policies (WERNECK; CARVALHO, 2020). As mobility outside the home is linked to the spread of the disease (BASELLINI *et al.*, 2020), the different degrees of social distancing practiced in the different Brazilian regions have caused different profiles of mortality (AQUINO *et al.*, 2020). Thus, we can expect that this regional diversity in terms of coping with the pandemic, also reflects heterogeneously in the sexual and reproductive responses discussed in this text.

Finally, the Spanish Flu led to the development of protocols for the prevention of infectious diseases. The consequences of other exogenous shocks, such as World War II, were the basis for the creation of a social safety net of which the public health system is

a part (MCDONNELL, 2020). As a result of COVID-19, liberal states worldwide are already thinking of universal health as the necessary path (FACHINNI, 2020; GAFFNEY, 2020). As Brazil already has a unified universal health care system in place, it is imperative to defend and strengthen it. It is worth noting that epidemics have the pattern of happening in waves (CAMACHO *et al.*, 2011; HERRERA-VALDEZ; CRUZ-APONTE; CASTILLO-CHAVEZ, 2011; ROTH *et al.*, 2014; WESSEL *et al.*, 2011). Therefore, their effects are not exhausted in the short term and they may leave long-term marks. It should be noted that pandemic and other emergencies arising from climate change are foreseeable, and capable of producing even greater adverse effects in the future. From this perspective, the experience of COVID-19 should serve as a warning for governments around the world and an invitation to review their production and consumption models in favor of an agenda of sustainable economic recovery (JONES; MILLS; GRAY, 2020; ROSENBLOOM; MARKARD, 2020).

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