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FACTORS AFFECTING TO ACCEPT OR DENY THE COVID VACCINATION

A Comparative Study of Working and Non-Working Women During Pregnancy and Lactation

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Every person is fighting the COVID-19 epidemic, the world's first and most potent danger of the twenty-first century. The whole world's attention is focused on the worldwide pandemic, and practically every nation is impacted in some way by it. Pregnant women are more prone than their nonpregnant counterparts to acquire a more severe case of COVID-19. Numerous factors argue in favour of the efficacy and safety of COVID-19 vaccines throughout pregnancy. According to research, between 29.7% and 77.4% of pregnant women got the COVID-19 vaccination. The study focused on analysis those factors which are responsible for creating perception about vaccination against COVID-19 disease. Whether pregnant and lactating women accept it or not. It also compared the decision of pregnant and lactating women respective to working and non-working women. The study suggested COVID-19 vaccination to protect pregnant women from severe sickness and death. Infants are at risk of developing problems linked with COVID-19, including respiratory arrest and other life-threatening consequences

Keyword: COVID-19, Working Women, Non-Working Women, Pregnant Women, Lactating Women

Introduction

In December 2019, a cluster of individuals with pneumonia in Wuhan, China. The whole genome of specimens was then sequenced to identify a novel coronavirus. The Coronavirus Research Team of the International Committee on Taxonomy of Viruses termed it SARS-CoV-2, and the sickness it caused was termed COVID-19 by the WHO. After infecting and killing thousands of people in China, the virus reportedly moved to Italy, other European nations, and the USA, with new cases being reported daily. The WHO labelled it a pandemic because of widespread infection and high transmission. A vaccine against COVID-19 has been developed utilising the S-protein of SARS-CoV-2 to avoid a pandemic (Troiano & Nardi, 2021). Even though mass vaccination versus COVID-19 may emerge as the most effective means of ending this fatal epidemic, there is still widespread public fear and apprehension about the practice.

As a result, a substantial number of pregnant and reproductive-aged women in the community have expressed significant worry about vaccination against COVID-19 (Sutton et al., 2021). Pregnant women are more prone than their nonpregnant counterparts to acquire a more severe case of COVID-19. Numerous factors argue in favour of the efficacy and safety of COVID-19 vaccines throughout pregnancy. According to research, between

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29.7% and 77.4% of pregnant women got the COVID-19 vaccination. The other factors were acceptance of other vaccines like influenza, confidence in the need for vaccinations in one's own country, worry about COVID-19 issued by state medical authorities, age, education, and socioeconomic status compliance. Geopolitical (Asian, South American countries) and pandemic (a variety of dangers and risks associated with sickness) factors influence vaccine adoption. The most important elements determining adoption are public knowledge of illness danger, vaccination safety, and credible information regarding the necessity and safety of vaccines. Information from obstetricians and trained medical experts would boost patient trust in COVID-19 vaccination (Januszek et al., 2021). Pregnant and lactating women (PLW) constitute a separate category for increased COVID-19 morbidity and mortality risk. However, since COVID-19 vaccines were initially excluded from research studies, understanding their safety and effectiveness has been delayed. This ambiguous situation may have contributed to increased PLW resistance to COVID-19 vaccination (Riad et al., 2021). While pregnant women bear a comparatively significant burden of COVID-19 and experience severe pregnancy complications, and vaccination defends against intense COVID-19 and transmits immunity to the newborn, pregnant women are only the leading focus group for COVID-19 vaccination in the USA And the UK Kingdom. Only 11 of the world's most virus-infected nations vaccinated pregnant women (Sznajder, Kjerulff, Wang, Hwang, & Ramirez, 2022). COVID-19 vaccination is suggested to protect pregnant women from severe sickness and death. Infants are at risk of developing problems linked with COVID-19, including respiratory arrest and other life-threatening consequences (Sutton et al., 2021). Strong vaccination coverage is critical for establishing an adequate threshold to herd immunity in a community, which protects vulnerable people indirectly from infectious hosts. This cutoff point varies across diseases and populations. Furthermore, a minimum threshold would need vaccination with greater effectiveness. This issue is crucial given the recent discovery of antibody resistance in several SARS-CoV-2 subtypes. Also, some of the most dangerous variants of Covid-19 had changes that made it less infectious, more intense, and more effective at blocking monoclonal antibody therapy because the immune system was able to get around them (Pratama et al., 2022).

Literature

Every person is fighting the COVID-19 epidemic, the world's first and most potent danger of the twenty-first century. The whole world's attention is focused on the worldwide pandemic, and practically every nation is impacted in some way by it. This revelation prompted researchers to quickly begin investigating the disease's treatment and prevention, as well as the mortality risk posed by coronavirus infection. The psychological effect on susceptible groups, such as pregnant women, is an unavoidable consequence of a monumental life event (Durankuş & Aksu, 2020). Understanding the variables affecting vaccine acceptability across diverse socio-economic groups, especially pregnant women, is critical to regaining society's pre-pandemic level of readiness. The findings demonstrated the different COVID-19 vaccine acceptability levels across pregnant women and their comparability with earlier data from the general public. Before the COVID-19 pandemic, the WHO listed vaccine aversion as a significant global health issue (Januszek et al., 2021). Pregnancy and breastfeeding are unique periods of increased disease and mortality associated with particular diseases. Pregnant women (PW) are far likely to get infections, be admitted to ICU, and need vents than nonpregnant women (NPW) with comparable age. As a result, vaccination, the most efficient strategy for combating the present epidemic, is advised for pregnant and lactating women (PLW) (Riad et al., 2021). Women were less

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likely to get accepted. Recent research indicated that a substantial proportion of women express worries about vaccination safety and a lack of regard for the quality and balance of information supplied by healthcare providers (Troiano & Nardi, 2021). Vaccine apprehension is a significant impediment to the effectiveness of mass vaccination initiatives (J. Wilson, Paterson, Jarrett, & Larson, 2015). The WHO corroborated this conclusion, reporting that around 10% of pregnant women develop a mental condition, most often depression. The frequency of this illness is more remarkable in underdeveloped nations, reaching 15.6 percent during maternity and 19.8 percent after delivery (WHO). According to the data obtained using standardised measures, mental illnesses occur at a rate double that reported under normal conditions during pandemics (Durankuş & Aksu, 2020).

Following the Food and Drug Administration's Emergency Use Approval of both the Pfizer and Moderna vaccines, the American College of Obstetricians and Gynecologists (ACOG) & the Society for Maternal-Fetal Medicine (SMFM) allowed pregnant women receiving the vaccine to exercise their autonomy after having a shared stance discussion with their obstetrical providers (Sutton et al., 2021). A comprehensive study discovered that vaccination absorption is hindered during pregnancy by many factors, including vaccine safety, potential advantages, a lack of guidance from healthcare experts, and trust in healthcare workers and pharmaceutics. Additionally, one may argue that making decisions during pregnancy modifies PLW's priorities, anxiety, and risk perceptions relative to non-PLW. In this context, it is critical to understand the variables that contribute to this group's refusal to get the vaccine to ensure the effectiveness of vaccination programs (Hsu, Johnson, Phillips, & Nelson, 2022). With the introduction of many effective vaccinations, lowering worldwide COVID-19 morbidity and death will rely on vaccine availability and adoption. Global vaccination acceptability amongst pregnant women and moms of small children is unclear. A better knowledge of the barriers to vaccination acceptability and their correlations will benefit the advancement of vaccine delivery in these groups. Vaccine acceptability was most excellent in India, the Philippines, and all Latin American countries were tested; Russia, the United States, and Australia were tested the least. Trust in vaccine effectiveness and safety, concern for COVID-19, the significance of vaccination produced in their own country, adherence to mask rules, trust in the medical department's scientific investigation, and preferences toward routine vaccines were all significant predictors of vaccine acceptance. Acceptance of the COVID-19 vaccination and its indicators among women varies internationally. Vaccination initiatives targeting women and children should be country-specific to have the most effect (Skjeft et al., 2021). The Centers for Disease Control and Prevention (CDC) in the United States have said there is insufficient evidence on the effectiveness of COVID-19 vaccinations in pregnant women; nonetheless, human trials are planned.

Additionally, there has been concern regarding the new messenger RNA (mRNA) technology utilised to develop Pfizer's BNT162b2 and Moderna mRNA 1273 vaccines. Whereas mRNA vaccines have been researched for many years in cancer and viral infection, they are now being employed broadly in response to the present pandemic. Due to their inability to enter the nucleus of the cell and their rapid breakdown by cell signalling, mRNA vaccines remain non-live immunizations. As with previous inactive vaccinations, there is no plausible physiological mechanism through which this vaccine may cause pregnancy or infertility (Hsu, Johnson, Phillips, & Nelson, 2022). Another research discovered that pregnant women in the United Kingdom had a 2.4-fold increased risk of

vaccination resistance than nonpregnant persons (Murphy et al., 2021). Pregnant women are more susceptible to respiratory diseases and severe bronchitis than non-pregnant women, resulting in physiological and immune changes such as altered T lymphocyte immunity, increased oxygen intake, lowered functional residual capacity, and reduced chest adherence. Some of which might result in increased maternal and foetal mortality rates.

Furthermore, pregnant women with bronchitis have a considerably higher risk of preterm and tiny for gestation children with poor Apgar scores delivered through caesarean section and whose moms have a greater frequency of preeclampsia/eclampsia than uninfected women. However, there is insufficient research to determine the impact of COVID-19 affecting pregnant women. SARS-CoV-2, SARS-CoV, and MERS-CoV are coronaviruses with similar genomes, pathogenesis, and clinical manifestations (Wenling, Junchao, Xiao, & Ouyang, 2020). The CDC recently stated that pregnant women are less likely to receive the COVID-19 vaccine series than nonpregnant women. Vaccination rates amongst pregnant women tend to be low, at less than 40% (Razzaghi et al., 2021).

Several studies have looked at the influence of media and the internet on vaccine uptake, and the results have shown that the impact may go in a variety of ways. For example, media channels may intensify the info emic amid public health crises to the point where it makes it challenging to make healthy choices (Benis, Seidmann, & Ashkenazi, 2021). Without precise safety data or strong vaccination recommendations, and particularly in light of pervasive misrepresentation on social media, several pregnant women have voiced understandable anxiety about the potential long-term implications of COVID-19 vaccination during pregnancy. Additionally, ACOG said that "pregnant women who choose not to get the COVID-19 vaccination should be encouraged to do so" (Hsu, Johnson, Phillips, & Nelson, 2022)." Vaccine acceptability rates may be utilised to develop policies and activities aimed at increasing public awareness and reassuring people about the safety and benefits of vaccinations, so assisting in limiting the virus's transmission and mitigating the pandemic's harmful impacts. Perceptions and acceptance rates for COVID-19 vaccines may help select the most effective means of communication for creating confidence in vaccination. Acceptance of vaccines may be impacted by sociodemographic and contextual factors, including personal beliefs, political opinions, and risk perception. Additionally, it may be impacted by social or organisational elements such as social media or the authority position (Januszek et al., 2021).

Women in pregnancy should get two doses of vaccination to ensure adequate antibody responses in the mother and foetus. The longer the latency period, the more vigorous the foetal antibody reaction. Number of PWL who got the vaccine, either as the first or second dose, experienced discomfort at the injection site. The second vaccine dosage would result in more systemic adverse outcomes than the first dose because Moderna vaccination is more often linked with systemic side effects. Biologically, we may infer that vaccine has no short-term effect on pregnancy, birth, or neonatal outcomes (Pratama et al., 2022).

It was observed that the idea that one had a low chance of contracting and being extremely sick from COVID-19 was the second most significant factor in vaccination decline. Breastfeeding respondents who declined the vaccination had similar worries, but they were also scared that the vaccine might lead them to become infertile. There was a

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significant level of worry among pregnant vaccination decliners about getting immunised against COVID-19 during the pregnancy. However, this was not universally expressed concerning all vaccinations, such as those against influenza or pertussis vaccines Figure 1. Additionally, there was an adequate study on COVID-19 vaccination in pregnancy and possibly damaging the baby (Sutton et al., 2021).

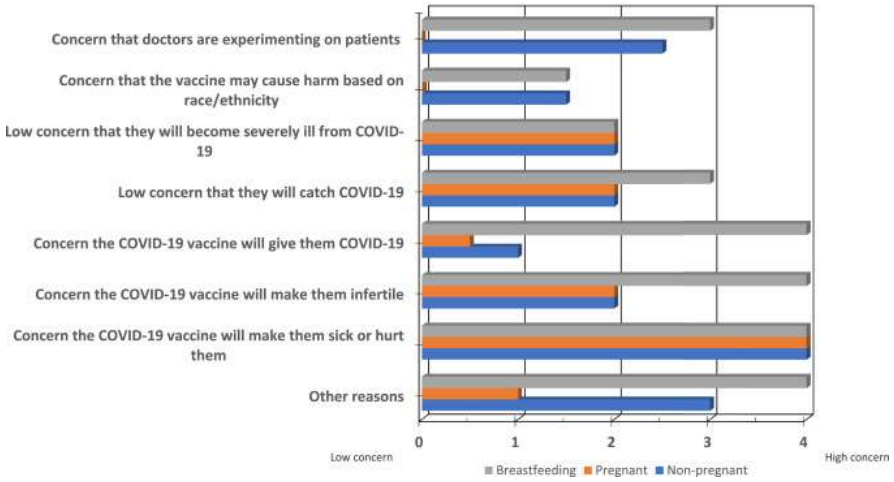


Figure 1: All individuals rejecting vaccination were questioned about their reasons.

The total rate of prenatal COVID-19 vaccination uptake was 28.5 percent throughout this cohort of pregnant women eligible for vaccination who delivered in an area Of London maternity hospital. When the COVID-19 vaccine was administered during pregnancy, the most significant predictors of uptake were pre-pregnancy diabetes mellitus (a promoter) and impoverishment (a barrier). Women from the poorest socio-economic backgrounds were less likely to obtain a vaccination, although women with pre-pregnancy diabetes mellitus were far more likely. After propensity score balancing for differences between vaccinated and unvaccinated women, there was no change in pregnancy outcomes related to COVID-19 vaccination in pregnancy, save for intrapartum pyrexia. However, the 95 percent confidence intervals were broad. However, it is exceedingly improbable that occurrences of intrapartum pyrexia have been caused by vaccination, given that the shortest delay between vaccination and delivery was two weeks in women having intrapartum fever. According to the CDC, COVID-19 vaccination side effects are transient and resolve within a few days (Blakeway et al., 2022).

The infection rate, defined as the percentage of persons infected with Covid-19, was used to assess vaccine effectiveness. It was detected at various time points in the studies. Immunogenicity was determined by the maternal antibody response, the foetal antibody response, and antibody transfer transplacentally. Adverse reactions, maternal results, and neonatal outcomes were used to assess safety. Local adverse effects included discomfort and soreness at the injection site, but systemic adverse reactions included tiredness, pain, myalgia, shivers, fever, and nausea. Randomised controlled studies demonstrated that two-dose regimes of both Pfizer–BioNTech and Moderna vaccinations had outstanding effectiveness of 94.1 percent and 95 percent, respectively, in avoiding Covid-19 disease, with no related safety issues. Neonatal passive immunity may defend

against SARS-CoV-2 infection. However, based on the gestation age at the time of the first vaccine or illness, this innate immunity may vary due to placental sieving. Infection with Covid-19 resulted in poor parenteral antibody transfer only during the trimester, despite a much larger maternal antibody response. Interestingly, lesser antibody transfer through the placenta with spontaneous infection, such as Zika & Dengue Viruses (Pratama et al., 2022).

Among individuals who were indecisive about vaccination, factors influencing their decision against vaccination included a fear of the vaccine causing them damage and confidence that they would not get the virus or become extremely sick from it (Figure 3, A). Additionally, respondents were asked to have their specific reasons for embracing or denying vaccination, then categorised. The most frequently cited causes for declining vaccination were concerns about short-term or long side effects, the speed with which the vaccine was being developed, fear of negatively impacting the pregnancy, prior allergy or anaphylaxis, a lack of adequate research, and the possibility of communication with other comorbid conditions. Aside from having relatives or friends who were at high risk of severe illness, the most popular reasons for wanting to get vaccinated were personal immunity, the existence of chronic comorbidities, safeguarding children, and contributing to herd immunity.

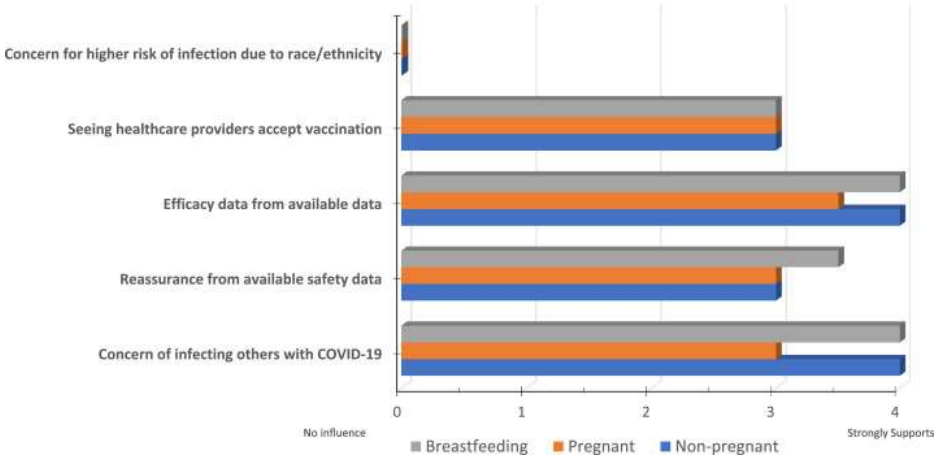


Figure 2: All responders asked the grounds for acceptance of vaccination.

Completing a two-dose primary mRNA COVID-19 vaccination course during pregnancy was linked with a decreased incidence of COVID-19–associated hospitalisation in 6-month-old newborns, and protection was more significant in children whose mothers were immunised later in pregnancy. Additional research should be conducted to compare vaccination timing before and during pregnancy. The CDC advises that women who are expecting, nursing, currently attempting to conceive, or who may get pregnant in the future be vaccinated and maintain current COVID-19 vaccination status (Halasa et al., 2022).

Conclusion

Given the increasing transmission of COVID-19 "variations of consideration," it would be appropriate for a pregnant patient to acquire the COVID-19 vaccination. However, due to paucity of long-term safety evidence for the foetus or kid, it was

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concluded that COVID-19 vaccination should be delayed until pregnancy. However, all populations must be encouraged to watch for further infection control measures, especially when mutant strains expand. A top Pfizer scientist expressed concerns that the COVID-19 vaccination might result female infertility due to an immune reaction to the placenta-forming protein syncytin-1. Antibodies directed against COVID-19 peak glycoprotein may cross the blood-brain barrier with syncytin-1, resulting in anti-placental antibody and female pregnancy. Multiple authoritative bodies, including the CDC, ASRM, and ACOG/SMFM, have denied unfounded COVID-19 vaccinations and infertility allegations. Neither COVID-19 illness nor COVID-19 vaccinations have significantly affected female fertility. On July 23, 2021, ASRM published the following update:

- COVID-19 vaccine has been shown to have no impact on male or female fertility problems.
- COVID-19 vaccination seems not to affect the risk of miscarriage during pregnancy.
- The vaccination against COVID-19 does not result in the development of placental antibodies.
- COVID-19 vaccination does not pass the placenta, and intramuscular vaccination mRNA is degraded in the cytoplasm of deltoid muscle cells after a few days. On the other hand, protective COVID-19 antibodies cross the placenta and safeguard the infant during birth. COVID-19 vaccination should be considered for all individuals undergoing infertility testing and treatment by reproductive endocrinologists. Before conception or during the first trimester of pregnancy, vaccination lowers maternal/fetal complications. Medical counselling has been shown to boost patient vaccination willingness dramatically.

Factors influencing vaccination acceptability may vary according to culture, environment, and location. Consideration for others and the impression of greater social acceptability may significantly influence the readiness to accept COVID-19 vaccination in more communal societies. Trust and trust in the health service and vaccination are critical elements that vary by location and context and have been demonstrated to influence vaccine adoption in studies conducted in the United States and other parts of the globe. Concerns are teaching and sensitising pregnant and nursing women on the current understanding of COVID-19, COVID-19, and vaccination. Similar factors considerably influence vaccination choices made by other social groups and the general public. Favourable directions for action may be included in communication strategies, including the backing of trusted and valued people, like religious leaders and doctors, the sharing of individual tales, or peer influence. Considering the information gathered during the first examination, it is also worth mentioning that scientific evidence-based ethical standards in obstetrics and gynaecology provide extensive guidance on vaccination. Reluctance to get the vaccination is a clear challenge to the fight against COVID-19 because population immunity is conditional on the new vaccine's efficacy and willingness to be administered.

References

Benis, A., Seidmann, A., & Ashkenazi, S. (2021). Reasons for Taking the COVID-19 Vaccine by US Social Media Users. *Vaccines*.

Blakeway, H., Prasad, S., Kalafat, E., Heath, P. T., Ladhani, S. N., Doare, K. L., & Magee, L. A. (2022). COVID-19 vaccination during pregnancy: coverage and safety. *OBSTETRICS*.

Durankuş, F., & Aksu, E. (2020). Effects of the COVID-19 pandemic on anxiety and depressive symptoms in pregnant women: a preliminary study. *The Journal of Maternal-Fetal & Neonatal Medicine* .

Halasa, N. B., Olson, S. M., Staat, M. A., Newhams, M. M., Price, A. M., Boom, J. A., & Sahni, L. C. (2022). Effectiveness of Maternal Vaccination with mRNA COVID-19 Vaccine During Pregnancy Against COVID-19–Associated Hospitalization in Infants Aged <6 Months — 17 States, July 2021–January 2022. *MMWR*.

Hsu, A. L., Johnson, T., Phillips, L., & Nelson, T. B. (2022). Sources of Vaccine Hesitancy: Pregnancy, Infertility, Minority Concerns, and General Skepticism. *IDSA*.

J.Wilson, R., Paterson, P., Jarrett, C., & Larson, H. J. (2015). Understanding factors influencing vaccination acceptance during pregnancy globally: A literature review. *Vaccine*, 6420-6429.

Januszek, S. M., Faryniak-Zuzak, A., Barnas, E., Łozinski, T., Góra, T., Siwiec, N., . . . Kluz, T. (2021). The Approach of Pregnant Women to Vaccination Based on a COVID-19 Systematic Review. *Medicina*.

Murphy, J., Vallières, F., Bentall, R. P., Shevlin, M., McBride, O., Hartman, T. K., . . . Bennett, K. (2021). Psychological characteristics associated with COVID-19 vaccine hesitancy and resistance in Ireland and the United Kingdom. *Nature Communications*.

Pratama, N. R., Wafa, I. A., Budi, D. S., Putra, M., Wardhana, M. P., & Wungu, C. D. (2022). mRNA Covid-19 vaccines in pregnancy: A systematic review. *PLOS ONE*.

Razzaghi, H., Meghani, M., Pingali, C., Crane, B., Naleway, A., Weintraub, E., . . . Lamias, M. J. (2021). COVID-19 Vaccination Coverage Among Pregnant Women During Pregnancy — Eight Integrated Health Care Organizations, United States, December 14, 2020–May 8, 2021. *MMWR Morb Mortal Wkly Rep*, 895–899.

Riad, A., Jouzová, A., Üstün, B., Lagová, E., Hruban, L., Janku, P., . . . Klugar, M. (2021). COVID-19 Vaccine Acceptance of Pregnant and Lactating Women (PLW) in Czechia: An Analytical Cross-Sectional Study. *IJERPH*.

Skjeft, M., Ngirbabul, M., Akeju, O., Escudero, D., Hernandez-Diaz, S., Wyszynski, D. F., & Wu, J. W. (2021). COVID-19 vaccine acceptance among pregnant women and

ISSN (P): 2788-4821 & ISSN (O): 2788-483X
Volume 2, Issue 2, Page 131-142, December 31, 2021

mothers of young children: results of a survey in 16 countries. *European Journal of Epidemiology*, 197-211.

Sutton, D., D'Alton, M., Zhang, Y., Kahe, K., Cepin, A., Goffman, D., & Staniczenko, A. (2021). COVID-19 vaccine acceptance among pregnant, breastfeeding, and nonpregnant reproductive-aged women. *American Journal of Obstetrics & Gynecology MFM*.

Sznajder, K. K., Kjerulff, K. H., Wang, M., Hwang, W., & Ramirez, S. I. (2022). Covid-19 vaccine acceptance and associated factors among pregnant women in Pennsylvania 2020. *Preventive Medicine Reports*.

Troiano, G., & Nardi, A. (2021). Vaccine hesitancy in the era of COVID-19. *ELSEVIER, 194*, 245-251.

Wenling, Y., Junchao, Q., Xiao, Z., & Ouyang, S. (2020). Pregnancy and COVID-19: management and challenges. *SciELO* .