

REVIEW ARTICLE

Trends in delivery mode occurring during the Covid-19 pandemic and risks in long-term urogynecology cases: A narrative review**Eighty Mardiyani Kurniawati^{1*}**, **Gatut Hardianto¹**, **Hari Paraton¹**, **Azami Denas Azinar¹**, **Tri Hastono Setyo Hadi¹**, **Nur Anisah Rahmawati²**¹Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Airlangga, Dr. Soetomo General Academic Hospital, Surabaya, Indonesia, ²Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia.**ABSTRACT**

Women's quality of life in the long term is also influenced by their reproductive health. Various diseases appear related to urogynecology cases such as sexual dysfunction, pelvic floor dysfunction and stress urinary incontinence. The study reviews the trend of types of delivery during the pandemic and the risk of urogynecology cases, especially in the three cases. The narrative review study was conducted using the PubMed, Science Direct, and Google Scholar databases. The results showed that the percentage of cesarean section was higher than normal deliveries because of the view on the safety of exposure to the virus. Several studies have found that sexual dysfunction was not related to mode of delivery but women who delivered by emergency caesarean section, vacuum extraction, or caesarean section were more likely to report dyspareunia at 18 months postpartum but adjusted for maternal age and other confounders. Meanwhile, compared with spontaneous vaginal delivery, cesarean delivery with a protective effect or reduction of stress urinary incontinence, overactive bladder, and pelvic organ prolapse. There is a tendency to choose a certain pattern of delivery so that the choice of method needs to be chosen wisely and through medical indications and consider risk factors for long-term reproductive health problems.

Keywords: delivery method; maternal health; pelvic organ prolapse; stress urinary incontinence; sexual dysfunction

ABSTRAK

Kualitas hidup perempuan dalam jangka panjang juga dipengaruhi oleh kesehatan reproduksinya. Berbagai penyakit muncul terkait kasus uroginekologi seperti disfungsi seksual, disfungsi dasar panggul dan stres inkontinensia urin. Penelitian ini mengkaji tren jenis persalinan pada masa pandemi dan risiko kasus uroginekologi, terutama pada ketiga kasus tersebut. Studi tinjauan naratif dilakukan menggunakan database PubMed, Science Direct, dan Google Cendekia. Hasil penelitian menunjukkan bahwa persentase operasi caesar lebih tinggi dari persalinan normal karena pandangan tentang keamanan paparan virus. Beberapa penelitian telah menemukan bahwa disfungsi seksual tidak berhubungan dengan cara persalinan tetapi wanita yang melahirkan melalui operasi caesar darurat, ekstraksi vakum, atau operasi caesar lebih mungkin untuk melaporkan dispareunia pada 18 bulan pascapersalinan tetapi disesuaikan dengan usia ibu dan perancu lainnya. Sedangkan dibandingkan dengan persalinan pervaginam spontan, persalinan sesar dengan efek protektif atau pengurangan stress inkontinensia urin, overactive bladder, dan prolaps organ panggul. Ada kecenderungan untuk memilih pola persalinan tertentu sehingga pemilihan metode perlu dipilih secara bijak dan melalui indikasi medis serta mempertimbangkan faktor risiko timbulnya masalah kesehatan reproduksi jangka panjang.

Kata kunci: metode persalinan; kesehatan ibu; prolaps organ panggul; stres inkontinensia urin; disfungsi seksual

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INTRODUCTION

Women's quality of life is influenced by their reproductive health. Urogynecology cases that arise in women such as pelvic organ prolapse, sexual dysfunction or stress urinary incontinence can interfere their long-term quality of life. A study found that the problem of disorders of the pelvic floor does not only occur in developing countries, but the incidence of about one in four women also experience it in developed countries.¹ Pelvic floor dysfunction often occurs in more than 50% of women in peri- and postmenopausal and can be caused by many factors that occur related to reproductive organ function during reproductive age.² This case, in addition to leading to a poor quality of life, also affects social, sexual and emotional functions so that they often visit certain urogynecology clinic. Although these cases are not as life-threatening as maternal deaths from complications of childbirth or pregnancy, they cause limitations, discomfort and satisfaction in daily life so that there is a tendency to require regular follow-up care.³ In addition to pelvic organ prolapse, lower quality of life was also associated with severe stress urinary incontinence, as well as the occurrence of sexual dysfunction in sexually active women.⁴ Female sexual dysfunction and quality of life are multidimensional aspects and have a two-way relationship throughout the life span. It is proven that about 40-50% of women experience sexual dysfunction and are at risk throughout their life at least related to sexual symptom disorders.⁵

Various factors are associated with urogynecology cases in the female reproductive cycle and many studies have focused on the topic. One of them is related to the aspect of childbirth. Reproductive health problems are associated with the function and history of reproductive organs that may experience changes throughout a woman's life cycle. Around 140 million women give birth every year in the world.⁶ Most healthy pregnant women want a positive and safe delivery experience. This safety also concerns the impact of childbirth itself on long-term reproductive health.⁷ Every woman must have a view on efforts to maintain and pay attention to long-term reproductive health after childbirth.

The situation around the world is currently affected by the pandemic situation. A virus called Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV2) that causes Covid-19. This single-stranded RNA virus has a high rate of infectivity in the general population and tends to be at risk in people with comorbid disease.⁸ One of the services affected is maternal health services. Various efforts and policies are aimed at the safety of maternity mothers and their babies, such as attention to the type of delivery. This study review the trend of the

type of delivery during the pandemic and the risk of urogynecology cases, especially in these three cases. The cases discussed were sexual dysfunction, pelvic floor disease and stress urinary incontinence.

METHOD

The non-systematic review was conducted through a review of the journals on the PubMed, Science Direct, and Google Scholar databases. The search was conducted using the keywords 'delivery mode', 'maternal health', 'pelvic organ prolapse', 'stress urinary incontinence', 'sexual dysfunction', Covid-19. Boolean operators are used to search for scripts, namely AND, OR, NOT. The literature review process is carried out through a database search and then the appropriate terms are reviewed. The data entered with the criteria are peer-reviewed academic journals in English. The first step is to choose a topic, define the scope and develop a title. After that introduce the importance of the topic and formulate a goal. Furthermore, a database search was carried out followed by the collection, analysis, and organization of sources. The data found are collected in one group, synthesize the information, determine the main points for future research, and recommendations. The research team extracted and organized in chronological order all the findings and related key phrases.

OVERVIEW

Trends in delivery mode during Covid-19

Exposure to the virus in hospitals and facilities that provide delivery services is the main focus. The mode of delivery is an important *u*focus that is widely studied in research because of the hypothesis that considers the possible risk of transmitting the virus from mother to baby during the delivery process. A study found that cesarean delivery was found in 385 women (65.47%) so that it had a greater prevalence than vaginal delivery which was only 218 women (34.53%). This selection was due to more than half of them being due to Covid-19-related conditions.⁹ Compared with the rate of caesarean section in the general healthy population, this act of delivery has a higher prevalence than the general population. WHO recommends protecting mothers from unnecessary medical technology.¹⁰ In a state of lockdown, pregnant women will not necessarily develop complications for indications of cesarean delivery. Unfortunately, the demand for caesarean sections at their own request during the pandemic has actually increased.¹¹

This tendency to select delivery mode is not entirely true. Each route of delivery was not correlated with a possible risk of vertical transmission during labour, and cesarean delivery should be performed based on obstetric indications.⁹ In addition, complications to the mother and fetus after delivery are not greater if the mother gives birth through vaginal delivery. The concept of giving birth and its selection must be individual and based on the severity of the disease and its indications.¹²

Relationship between type of delivery and urogynecology cases

Table 1 shows that sexual dysfunction was not related to the type of delivery but in cases of dyspareunia at 18

months postpartum, compared with women who delivered spontaneously vaginally with an intact perineum or tears without sutures, women who underwent emergency caesarean section, vacuum extraction, or cesarean section has a greater probability in dyspareunia cases. This is subject to adjustment for maternal age and other confounders. Meanwhile, compared with spontaneous vaginal delivery, cesarean delivery was associated with a protective effect or decreased stress urinary incontinence, overactive bladder, and pelvic organ prolapse. Six years postpartum, vaginal delivery and caesarean section were associated with different cases. Vaginal delivery is associated with urinary incontinence. Sectio caesarea is associated with the incidence of dyspareunia.

Table 1. Relationship between type of delivery and urogynecology cases

Author, country, year	Research type	Case	Finding
Fan et al, 2017 ¹³	Systematic review dan meta analysis	Sexual dysfunction	Postpartum (short and long-term) sexual satisfaction is not affected by mode of delivery
Dabiri et al, 2014 ¹⁴	Cross-sectional descriptive study	Sexual dysfunction	Postpartum sexual function was not related to the type of delivery.
Ghorat et al, 2017 ¹⁵	Cross sectional study	Sexual dysfunction	No long-term effect on a woman's sexual function related to the method of delivery
Barbara et al, 2017 ¹⁶	Cross sectional study	Sexual dysfunction	Poorer sexual function can be associated with operative vaginal delivery (which is not spontaneous) but no conclusions can be drawn from this study regarding the impact of pelvic floor trauma (perineal laceration or episiotomy) on sexual function due to the high rate of episiotomy.
Urbankova et al, 2019 ¹⁷	Single-centre prospective observational cohort study	Pelvic floor anatomy and dysfunction	The most critical risk factor for levator ani muscle (LAM) avulsion was forceps delivery, while an epidural had a protective effect
Eason et al 2004 ¹⁸	Prospective cohort study	Urinary incontinence	A person can experience urinary incontinence during pregnancy which correlates with the possibility of urinary incontinence at 3 months postpartum, regardless of whether the delivery is vaginal or by caesarean section
Tähtinen et al, 2016 ¹⁹	Systematic review and meta analysis	Stress Urinary Incontinence	Vaginal delivery was associated with a twofold increase in the risk of long-term SUI, and the effect was greatest in younger women compared with caesarean section
Baud et al, 2020 ²⁰	A cross-sectional study	Pelvic floor dysfunction	After an elective caesarean section women reported significantly less urgency urinary incontinence and stress incontinence than after vaginal delivery. Six years postpartum, vaginal delivery was associated with urinary incontinence, whereas elective caesarean section was associated with sexual pain and urination.
Gyhagen et al, 2019 ²¹	Nationwide matched cohort study	Urinary incontinence	Cesarean delivery was associated with a significant 30.0% reduction in urinary incontinence compared with vaginal delivery and a 35-52% reduction in the rate of more severe urinary incontinence independent of age.
Blomquist, et al, 2018 ²²	Cohort study	stress urinary incontinence, overactive bladder, and pelvic organ prolapse	Cesarean delivery had a protective effect against stress urinary incontinence, overactive bladder, and pelvic organ prolapse, whereas a significantly higher risk of anal incontinence and pelvic organ prolapse was associated with operative vaginal delivery.
Marvi et al, 2021 ²³	Systematic review and meta analysis	Dyspareunia	Dyspareunia differed according to mode of delivery although this difference was not statistically significant.
McDonald et al, 2015 ²⁴	Prospective Cohort study	Dyspareunia	Dyspareunia at 18 months postpartum tended to be reported by women who underwent emergency caesarean section, vacuum extraction, or caesarean section but adjusted for maternal age and other confounding factors.

Solutions for choosing delivery mode during a pandemic with attention to the effects of urogynecology cases

From the explanation about trends in delivery mode during Covid-19, it is known that it is necessary to choose the method of delivery wisely. Each delivery basically has its own risks such as the association of caesarean section with a reduced risk of pelvic organ prolapse and stress urinary incontinence in several studies. Both elective caesarean section and vacuum extraction were associated with sexual pain and urination at 6 years after delivery. Although influenced by many other factors, the choice of delivery method must be in accordance with medical indications. Some women may choose caesarean section method over vaginal delivery during a pandemic, because they feel safer from exposure to the virus but research reveals that each route of delivery is not associated with possible risks of intrapartum vertical transmission, and cesarean delivery. Complications for mother and baby after delivery are not greater if the mother gives birth through vaginal delivery. The increase in cesarean delivery rates can be justified in part because of the possible complications that most Covid-19 infections occur in the third trimester and have the potential to cause around 15% to require hospitalization. Experts argue that early delivery, even in less severe cases, is beneficial for the treatment and subsequent outcome of Covid-19.

In addition to the relationship between childbirth and the impact on urogynecological cases, cases related to urogynecology have experienced problems in service also during the pandemic. During the pandemic alone, several studies identified a decline in female sexual function in different countries, with an emphasis on sexual desire. Most studies have found a decrease in the frequency of sexual intercourse during the pandemic and an increase in solitary sexual behavior. This is associated with decreased sexual satisfaction and relationship satisfaction.²⁵ After Covid-19 disease, women may experience a change in the frequency of sexual intercourse, decreased sexual satisfaction even though the quality of life score does not change significantly.²⁶

This study has limitations, namely it is still a narrative review. The long-term effects of problems or risk factors that arise during the pandemic need to be analyzed more deeply, in an effort to anticipate and prepare for better service delivery. During the pandemic, it is known that the number of patient visits has decreased, so further impacts need to be explored further.

CONCLUSION

The caesarean section rate increased compared to vaginal delivery during the Covid-19 pandemic. Even in women with Covid-19, the mode of delivery by cesarean section was higher than the general population. The choice of delivery method needs to be chosen wisely and through medical indications so as to prevent long-term effects on women's reproductive health, such as pelvic organ prolapse, stress urinary incontinence and sexual dysfunction.

CONFLICT OF INTEREST

There is no conflict of interest

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