

## **QUALITY OF LIFE WOMEN WITH CESAREAN SECTION HISTORY : A SYSTEMATIC LITERATURE REVIEW**

**Nurbita Fajarini<sup>1\*</sup>, Sri Ratnaningsih<sup>2</sup>, Ismarwati<sup>3</sup>**

<sup>1</sup> Magister Midwifery Student, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta Jalan Ringroad Barat No.63, Mlangi, Nogotirto, Gamping, Kabupaten Sleman, Daerah Istimewa Yogyakarta, Indonesia

<sup>2,3</sup> Lecturer of Magister Midwifery Program, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta

**\*corresponding author: [nurbita.fajarini@gmail.com](mailto:nurbita.fajarini@gmail.com)**

### **Abstract**

The prevalence of cesarean section (CS) worldwide has increased, both with medical indications and without indication. CS has short and long term risks that have an impact on women's health and quality of life. The purpose of this systematic literature review was to review the literature on the quality of life of women with a history of cesarean section. Method: Systematic literature review used the PubMed and ProQuest databases with a period of 2008-2018. Result: Among 1529 initial articles identified, there were 10 articles that met the inclusion criteria. The quality of life of women with a history of cesarean section included physical, psychological, social and environmental health. CS had a negative impact on quality of life, and the quality of life of women with a history of CS tended to be lower compared to women who underwent vaginal delivery, especially in the physical health domain. Conclusion: The quality of life of women with a history of CS tended to be lower in the domain of physical health compared to women with vaginal birth history. It is expected that women with a history of CS make efforts to improve quality of life e.g. with physical activity (yoga, jogging, etc.). Healthcare providers are expected to be able to promote vaginal delivery, improve quality and safety in delivery services, and perform services in the form of postnatal home visits especially after CS.

**Keywords: Quality of Life, Cesarean section**

### **1. INTRODUCTION**

The prevalence of cesarean section (CS) in the last 25 years has increased, based on the results of the analysis showing that between 1990 and 2014, the global CS average increased 12.4% (from 6.7% to 19.1%) with an average annual increase of 4.4%. Asia and North America are regions with the highest annual average rate of increase (6.4% and 1.6%, respectively) [1]. Cesarean section is effective for saving mothers and babies, with provisions made on medical indications, nevertheless the incidence of CS that exceeds 10% of the total number of deliveries is not related to a reduction in maternal and newborn mortality [2]. Cesarean section is associated with short and long term risks, including significant and sometimes permanent complications and disabilities that can occur years after delivery and affect women's health, changes, and subsequent pregnancies, this risk is higher in women with limited access to health services [3].

The postpartum period, especially after CS is a critical period for a woman who is characterized by increased morbidity and impaired quality of life. A mother, during the postpartum period, bears the double burden of providing appropriate care for newborns as well as playing a basic role for other family members, the risk of sleep deprivation, fatigue, and lack of time for self-care can cause emotional disappointment and symptoms of depression among mothers, which contributes to poor quality of life [4]. Women are the key to family and community health, in other words, women's health problems especially quality of life affect the health of families, communities and future generations,

therefore it is important to know how the quality of life of women after childbirth, especially after cesarean section, so that later actions can be taken to improve their quality of life.

## **2. METHODS**

There are six steps used in preparing a systematic literature review. 1) identifying problems and research questions, 2) determining inclusion and exclusion criteria, 3) literature searching, 4) article selection, 5) data extraction, 6) data mapping

### **Step 1: identify problems and research questions**

Research questions in this systematic literature review are: How do you describe the quality of life of women with a history of cesarean section compared to vaginal delivery in terms of physical, psychological, social and environmental health aspects? and what are the factors that affect the quality of life of the mother with a history of CS?

### **Step 2: determine inclusion and exclusion criteria**

Inclusion criteria: research on the quality of life of women with a history of cesarean section in various countries. Exclusion criteria: women who have a history of CS with disability, giving birth to twins, have health complications such as cancer, heart disease, hypertension, etc., have babies / children with health disorders / problems, experience violence, countries with conflict.

### **Step 3: literature searching**

There are 3 step in literature searching, the first step is to determine the keywords ("quality of life" OR "health-related quality of life" OR "life satisfaction" OR "Physical well-being" OR "psychological well-being" AND "social well-being" ) AND (postpartum OR postnatal OR "after delivery" OR "after birth" OR "after childbirth" AND "mode of delivery" OR caesarean OR cesarean OR "cesarean section" OR "caesarean section" OR "cesarean delivery" OR "caesarean delivery" OR "cesarean section" OR "sectio cesarea" OR "C- Section" OR "Cesarean birth" OR "birth cesarean" OR "caesarean birth"). The second step is search articles according to keywords that have been determined in two databases (PubMed and ProQuest) and set filters on the page are like full text filters, publish data in 10 years, humans, and English. The third step is to search for articles using reference lists from several articles related to the topic.

### **Step 4: article selection**

In the search for articles identified 1539 articles, after removing duplicates and filtering titles and abstracts were obtained 47 articles. Forty-seven articles were accessed full text and filtered back according to inclusion and exclusion criteria. The corresponding articles number 10 articles which are then made critical appraisal. Articles that have been critical in the appraisal are then extracted and used for systematic literature review totaling 10 articles. The summary of the article selection process is contained in the flow diagram of the literature search shown in figure 1.

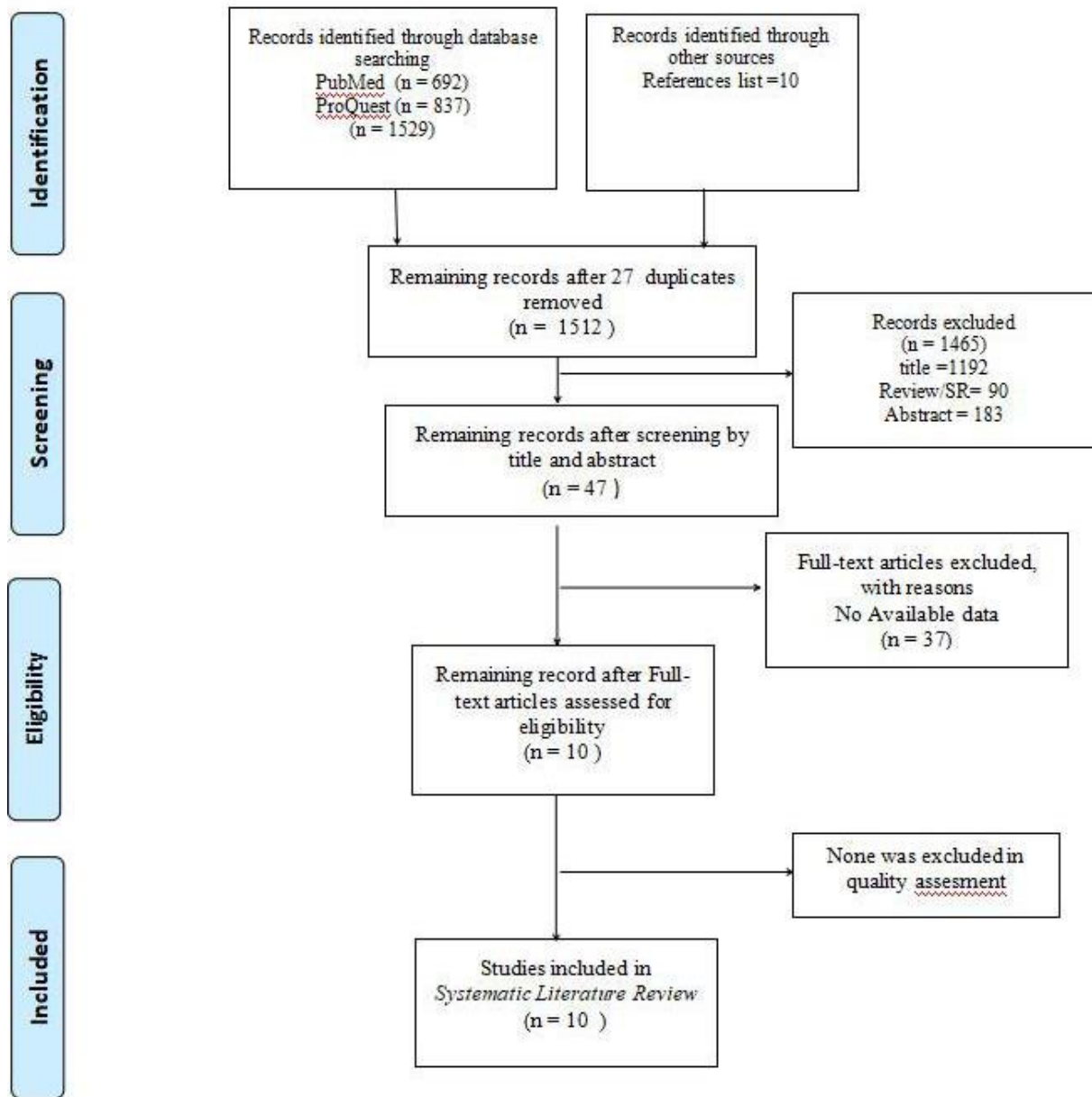


Figure 1. Flowchart Diagram Literature Searching

**Step 5: extracting data**

There were 10 articles that met the inclusion criteria and have a good quality, then data extraction is carried out to find out in detail and classify several points of the article, such as the research country, research objectives, methods used, and the results or findings of the research conducted, it is shown in table 1.

**Table 1. Data Extraction**

No	Title/Author/Year/ Country	Aim	Method & QoL assessment	Sample	Result
1	A Comparison of Mothers' Quality of Life after Normal Vaginal, Cesarean, and Water Birth Deliveries [5] (Kavosi et al., 2015) Iran Q3	to evaluate and compare the quality of life after normal vaginal, cesarean and water birth deliveries	Cross- sectional study  SF-36	137 women 2 months after delivery (59 women with normal vaginal delivery, 39 with CS, and 39 with water birth)	The results showed that vaginal delivery groups had the highest average score in the physical health domain; women with water birth have the highest average score in the mental health domain and total quality of life (women with water birth have the highest total quality of life score followed by normal vaginal delivery, both experience better physical health compared to CS)
2	Does delivery mode affect women's postpartum quality of life in rural China?[6] (Huang et al., 2012) China Q1	to explore the impact of the model / type of delivery on the quality of life postpartum women in rural China and examination factors that affect quality of life after childbirth	Cross-sectional study design  Rural postpartum quality of life (RPQoL)	1375 women who had given birth, aged 18-43 years consisting of vaginal and CS deliveries were divided into 3 groups: 0-3 months (107 and 223), 4-6 months (110 and 275), 7-12 months (196 and 464).	Overall cesarean section was 70% (962/1375), and most of them (59%) had cesareans at the request of the mother. None quality of life scores a significant difference between women with normal labor and cesarean section. It was found that postnatal home visits were related to good postnatal quality of life and low husband's education level, male sex was associated with poor quality of life.
3	Health-related quality of life five years after birth of the first child [7] (Carlander et al., 2015)	to assess health-related quality of life (HRQoL) in women five years after giving birth their first child and correlation between HRQoL with the model / type of delivery	Prospective matched cohort study  The Swedish Health-Related Quality of Life Survey	545 women were first pregnant in hospitals in Sweden and follow up after five years of birth of the first child, 372 (86 vaginal deliveries, 25 instrumental vaginal deliveries, 25 CS	Overall, HRQoL is good. Sub optimal scores are obtained for three variables: Sleep problems, Emotional well-being - negative influence and family function - sexual function. Women who experience vaginal birth, the birth of an instrumental vagina or women who undergo a cesarean section at

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	Sweden		(SWED-QUAL)	emergency, 38 CS at the mother's request, 75 CS due to medical indications )	the request of the mother are more likely to report the HRQoL felt better than women who have had an emergency cesarean section or medical indication.
	Q1				
4	Health related quality of life of women at the sixth week and sixth month postpartum by mode of birth [8]	to explore health related quality of life of women at the sixth week and sixth month postpartum by mode of birth	Longitudinal Prospective study design	Primipara, 18-45 years old, six-week group = 512 women (171 normal vaginal deliveries, 162 forceps, 30 vacuum extractions, 33 elective CS, 116 CS emergency) Six months group = 484 women (162 normal vaginal deliveries, 152 forceps, 26 vacuum extraction, 32 elective CS, 112 CS emergency)	There was no difference health related quality of life of women by mode of birth at the sixth week or six months postpartum. In the sixth week postpartum, regardless of the mode of birth, women with postpartum urinary incontinence report lower HRQoL. Between the sixth week and the sixth month postpartum,HRQoL improved for all birth modes.
	(Triviño-Juárez et al., 2017)		SF-36		
	Spain				
	Q1				
5	Investigation of the association between quality of life and depressive symptoms during postpartum period: a correlational study [9]	to find out the correlation between postpartum depression and quality of life (QoL).	A cross-sectional descriptive study	145 women who had given birth to days 3 and 4 with cesarean section or normal delivery.	Women with vaginal birth history had a cumulative physical component score higher than CS. Women who had postpartum depression symptoms had significantly lower scores in the "General health" dimension ( $p = 0.01$ ), showed a worse physical role, compared to those who did not have symptoms of postpartum depression. Symptoms of postpartum depression are related to the quality of life of women
	(Papamarkou et al., 2017)		Edinburgh Postnatal Depression scale (EPDS)		
	Greek		SF(36)		
	Q1				

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6	Mode of Delivery and Long-Term Health-Related Quality-of-Life Outcomes: A Prospective Population-Based Study [10]  (Petrou et al., 2017)  United Kingdom  Q1	to describe the health-related quality-of-life in the long term related to the model of delivery	Longitudinal Prospective study design  The EuroQol Five Dimensions (EQ-5D)	2161 women who have given birth 1374 case groups and 787 control groups	Women who gave birth to a term infant with a cesarean section without indication of either mother or fetus had worse long-term health-related quality of life compared to spontaneous vaginal delivery ( $p < 0.001$ ).
7	Postnatal quality of life in women after normal vaginal delivery and caesarean section [11]  (Torkan et al., 2009)  Iran  Q1	to compare the quality of life of women with normal vaginal delivery with cesarean section	Prospective study design  SF-36	100 women (50 normal vaginal delivery, 50 cesarean delivery)	The group of women with normal vaginal delivery improved their quality of life related to physical health while the group of women with cesarean section improved the quality of life related to mental health. In general, the quality of life in women with normal vaginal delivery is better than women with cesarean section.
8	Postpartum Quality of life in Indian women after vaginal birth and cesarean section : a pilot study using the EQ-5D-5L descriptive system [12]  (Kohler et al., 2018)  India	to test the use of the generic EQ-5D-5L questionnaire to assess postpartum quality of life experienced by rural Indian women	prospective pilot study  the EQ-5D-5L questionnaire	224 respondents (46 women with a history of CS and 178 with vaginal delivery)	Women with vaginal birth history, even with episiotomy in India, had a higher quality of life than women with a history of CS.

Q1

9	Quality of Life after Cesarean and Vaginal Delivery [13]  (Mousavi et al., 2013)	to compare the quality of life after cesarean section and vaginal delivery	Prospective study design  The WHOQOL-BREF questionnaire	340 women 180 CS history, 160 vaginal deliveries	In primipara the quality of life scores related to physical, psychological and social domains, and overall quality of life were higher in the vaginal delivery group compared to cesarean section (p <0.05).
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Iran

Q3

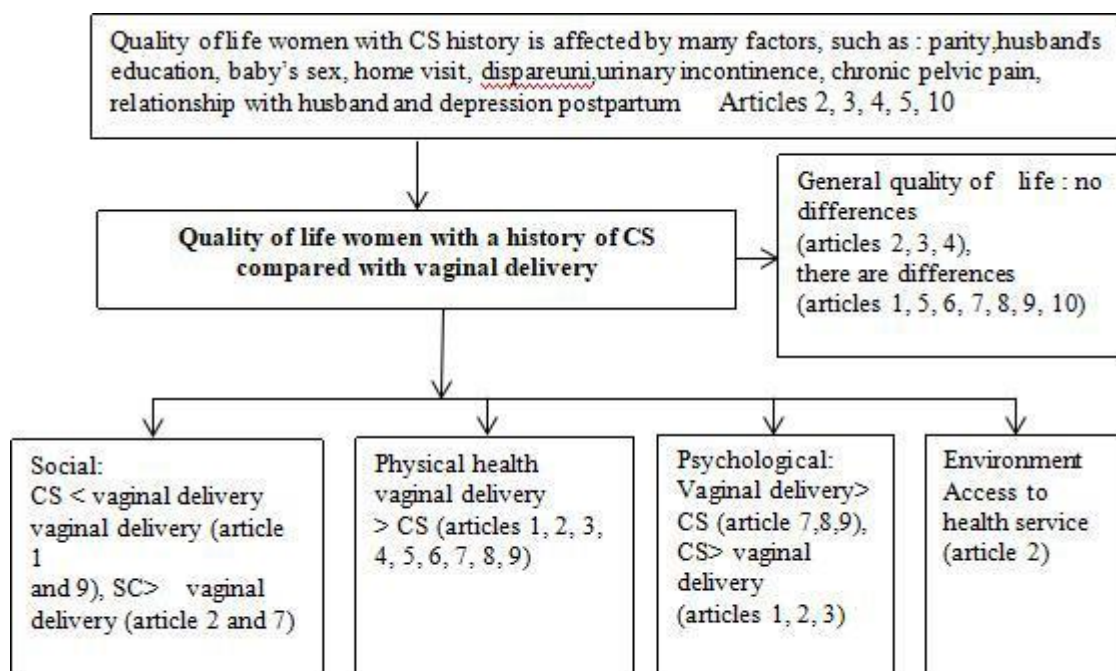
10	The effects of mode of delivery and time since birth on chronic pelvic pain and health-related quality of life  [14]  (Li et al., 2014)	to assess the impact of mode of delivery and time of birth on chronic pelvic pain (CPP) and health-related quality of life (HRQoL) among primiparous women in China.	Cross-sectional study  The Pelvic Pain Assessment Form,  The 3-level 5dimensional EuroQol questionnaire (EQ-5D-3L)	1456 primiparas who gave birth at least 6 months before the study (766 CS, 690 vaginal deliveries)	Lower EQ-5D utility scores are associated with CS birth, longer time since birth, and the presence of CPP (Although the absolute risk is small, cesarean section and time of birth are significant risk factors for CPP, which have a negative impact on respondent's HRQoL)
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China

Q2

**Step 6: Data Mapping**

Findings with systematic searches obtained articles published in 2008-2018, authors and sources of data taken from 3 developing countries (3 Iran, 2 China, 1 India), 4 from developed countries (1 United Kingdom, 1 Spain, 1 Sweden, 1 Greek). The instruments used in the quality of life assessment in the systematic literature review were The Short form Health Survey (SF-36) (articles 1, 4, 5, 7), Rural postpartum quality of life (RPQoL) article 2, The Swedish Health-Related of Quality of Life Survey (SWED-QUAL) Article 3, The European Quality of Life Five Dimensions (EQ-5D) article 6, (EQ-5D-3L) article 10, (EQ-5D-5L) article 8, World Health Organization Quality of Life (WHOQOL-BREF) article 9. Based on the results of data extraction, we found findings related to maternal quality of life with a history of cesarean section and the factors that influence shown in figure 2.



**Figure 2 Data Mapping**

**3. RESULTS AND DISCUSSION**

**3.1 General Quality of life**

Cesarean section has a negative impact on women's quality of life, as seen from general assessment scores in women with CS history was fewer than women with vaginal delivery [5], [9]–[14]. Another studies shown that generally there was no difference in quality of life between women with vaginal delivery and women who had a history of cesarean section [6]–[8]. There is something interesting from the results of the review for the article which shows that there is generally no difference between the delivery model with quality of life, but when compared with emergency CS or with medical indications, women with an emergency CS history or on medical indications have a lower quality of life [7]. Another article shows the opposite of this, where women who had a cesarean section without medical indication in mother or infant had a significantly lower quality of life score than women on vaginal delivery ( $p = 0.017$ ) [10], this can be caused by the presence of postpartum depression, previous studies shown that women with elective CS are more at risk of suffering from postpartum depression compared to women who have a history of CS emergency (OR = 1.48,  $p = 0, 0168$ ) [15].



### **3.2 Physical Health Domain**

The quality of life women with cesarean section history tends to be lower especially in the domain of physical health [5]–[13], it is related to pain / discomfort and inhibition of mobility in women with CS especially in the early postpartum period [12], even pain is sometimes still felt until 12 months postpartum ranging from moderate to severe intensity [10]. The previous studies show that was compared with women who did vaginal delivery, women with a history of CS tend to be slower in the recovery period because of chronic pain [16].

### **3.3 Psychology Domain**

Scores related to emotional well-being in CS tended to be higher than vaginal delivery in the early postpartum period, although it was not significantly [5]–[7], due to women with CS having confidence that CS is a safe way for them and their babies [6], but in the 6-8 weeks postpartum scores related to mental health were higher in women with vaginal delivery [11], [13]. Seventeen percent women with vaginal delivery and 26% of women with CS history reported experiencing anxiety and depression ranging from mild to severe in the first month postpartum [12]. Studies regarding postpartum depression with delivery models showed that the incidence of postpartum depression was lower in women with normal vaginal delivery and vaginal instrumental delivery compared with women with emergency cesarean section (OR = 0, 67,  $\rho < 0,0001$ ; OR = 0, 56,  $\rho < 0,0001$ ). Postpartum depression has a negative impact on quality of life [9], [17] [18], it was assumed that vaginal delivery could be a preventive effort in the prevention of postpartum depression [11].

### **3.4 Social Domain**

Scores related to social functioning in vaginal and CS deliveries show differences, on the social functioning domain of vaginal delivery having a higher score than CS [5] [11]. Furthermore one of social domain that is related to the sexual activity. Regarding sexual function, women with vaginal delivery felt more satisfaction compared to CS ( $\rho = 0, 037$ ) [13]. Women with elective CS and emergency CS had a twice risk of having dyspareunia at 18 months postpartum compared with women with a vaginal delivery history, from the results of these studies the pain experienced might make women with a history of CS afraid to having sex [19]. Studies in China show different results that sexual satisfaction in women with CS actually higher than women with vaginal delivery in 0-3 months [6]. Another research show are different from the results above, there is no significant difference between mode of delivery and sexual function, including desire, passion, lubrication, orgasm, satisfaction and pain [20], [21].

### **3.5 Environment Domain**

The results of this review related to the environmental domain are access to maternal health services especially in the form of a postnatal home visit, the postnatal home visit significantly has a positive effect on quality of life [6] [18]. An interesting finding from the article in this review is that most women who have CS have higher education and income than women who have vaginal delivery [6], [14], women with a history of CS have higher education as well as their husbands, more ANC frequencies but fewer home visits so that the quality of life is lower than women with vaginal delivery.

### **3.6 Factors that affect the quality of life of women with a history of Cesarean Section**

The result of this review show that quality of life of women with a history of cesatean section influenced by:

### 3.6.1 Husband's education level

Husband's education level influences the quality of life of postpartum women ( $p < 0.05$ ), husbands with higher levels of education make it possible to provide more support to women, because they have information related to the provision of health, able to solve problems more quickly, so as to help adjust the role of women to become a mother. Husbands with lower levels of education will provide less support to women, so that the quality of life for women is also low [6].

### 3.6.2 Acces to maternal health services especially in the form of a postnatal home visit

Postnatal home visit significantly improves the quality of life of women after childbirth (IC 1,873-3,586) [6]. An interesting finding from the article in this review is that most women who have CS have higher education and income than women who have vaginal delivery [6], [14]. Women with a history of CS have higher education as well as their husbands, more ANC frequencies but fewer home visits, thus indirectly affecting their quality of life [6].

### 3.6.3 Sex of a Baby Boy

The gender of male infants significantly affected the quality of life [6], some studies supported the results of the birth of male infants, giving a higher risk of postpartum blues 5 days after delivery [22].

### 3.6.4 Parity

Parity (more than 1 child) affects quality of life because having more children limits family resources and also increases women's workload and responsibilities, which adversely affects quality of life [7], [8]. Contrary to the results of the study, the results of another study found that multiparas did not affect the relationship between quality of life and type of labor ( $p > 0.05$ ), parity did affect quality of life but only in primiparas where quality primiparas the life of women with vaginal delivery is higher than CS [13].

### 3.6.5 Urinary Incontinence

Urinary incontinence has a negative impact on quality of life [7], [8]. Although urinary incontinence is identical to vaginal delivery but women with a history of cesarean section also have the same risk of experiencing it, UUI (Urge Urinary Incontinence) in women with a history of CS has a more negative impact on emotional health than occurs after vaginal delivery, while the impact of SUI (Stress Urinary Incontinence) did not differ significantly between labor groups [23].

### 3.6.6 Dyspareunia

Women with vaginal delivery feel sexual satisfaction more than CS [13]. Women with elective CS and CS emergency had a 2-fold risk of having dyspareunia at 18 months postpartum compared with women with a history of vaginal delivery, the results of the study made it possible for women with CS delivery to tend to fear to having sex because of the pain experienced [19]. Pain during intercourse has a negative relationship with emotional well-being - negative influence ( $\rho = 0.036$ ), family function - sexual function ( $\rho < 0.001$ ) and mobility ( $\rho = 0.040$ ) [7].

### 3.6.7 Relationship with husband

Women who have a good relationship with their husbands have better quality of life related to physical function compared to those who have a bad relationship with their husbands ( $\rho = 0,017$ ) [9].

### 3.6.8 Postpartum depression

Postpartum depression events were lower in women with normal vaginal delivery and vaginal instrumental labor compared to women with CS emergency (OR = 0,67,  $\rho < 0,0001$ ;

OR = 0.56,  $\rho < 0,0001$ ), Postpartum depression is related to quality of life [9] and has a negative impact on quality of life [17] [18].

#### 3.6.9 Chronic Pelvic Pain (CPP)

Chronic pelvic pain (CPP) has a negative impact on quality of life. Although the absolute risk is small, cesarean section and time of birth are significant risk factors for CPP [14].

## 4. CONCLUSION

Cesarean section has a negative impact on the quality of life of women, where the quality of life of women with a history of cesarean section is lower than for vaginal delivery. Quality of life of women with a history of cesarean section tend to be lower, especially in the domain of physical health, it is related to pain/discomfort and inhibited mobility in women with CS, especially in the early postpartum, even pain is sometimes felt until 12 months postpartum moderate to severe.

Healthcare providers, especially midwives, are expected to be able to promote vaginal delivery, including improving quality and safety in delivery services, so that the negative stigma of pain during vaginal delivery as a fear for women can be avoided, and providing postnatal home visit services to improve quality of life postpartum mothers especially after CS. Women with a history of CS are expected to be able to improve their quality of life for example by doing physical activity (PA) such as sports, yoga etc. and that is no less important is a family support.

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