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Analysis of Risk Factors for Caesarean Section Wound Dehiscence at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital

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Abstract: *Surgical wound dehiscence is a common complication following cesarean section that can delay recovery and increase the risk of infection and prolonged hospitalization. This study aimed to analyze the risk factors associated with surgical wound dehiscence at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital. The study included 65 postpartum mothers who underwent treatment at the clinic. Data were collected from medical records and wound care logs, then analyzed to identify significant factors. The results showed that maternal age, anemia status, nutritional status (based on body mass index), surgical wound infection, and duration of surgery were all significantly associated with the occurrence of wound dehiscence. However, comorbidities did not show a significant relationship. The study concluded that cesarean section surgical wound dehiscence is influenced by various maternal and clinical factors. These findings emphasize the importance of implementing risk-based postoperative care, including close wound monitoring, infection prevention, and addressing anemia and nutritional issues, to reduce post-cesarean section complications and improve recovery outcomes.*

Keywords: *Caesarean Section; Postoperative Care; Postpartum Mothers; Risk Factors; Surgical Wound Dehiscence.*

1. INTRODUCTION

Caesarean section (CS) is one of the most frequently performed obstetric surgical procedures worldwide. In recent decades, the rate of CS deliveries has shown a significant increase, both in developed and developing countries. The World Health Organization (WHO) reports that the global rate of CS deliveries has exceeded the recommended threshold, with the global average reaching over 21% of all deliveries (WHO, 2021). While CS is often lifesaving for both mother and fetus, this procedure also carries the risk of postoperative complications, one of which is surgical wound dehiscence, which can seriously impact the mother's health.

Cesarean section wound dehiscence is the reopening of a surgical wound, partially or completely, after surgery. This complication can prolong hospitalization, increase the risk of surgical wound infection, increase medical costs, and reduce the mother's quality of life after delivery (Sartelli et al., 2018). In severe cases, wound dehiscence can even lead to sepsis, the need for reoperation, and increased maternal mortality. Therefore, prevention and early detection of risk factors for wound dehiscence are crucial for improving the quality of obstetric care.

Globally, the incidence of post-cesarean wound dehiscence is reported to vary between 1–5%, depending on patient characteristics, surgical technique, and quality of postoperative care (Temesgen et al., 2019). In developing countries, the incidence tends to be higher due to

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limited resources, a high prevalence of anemia and infection, and delayed management of postoperative complications (Jido & Garba, 2016). This situation indicates that surgical wound dehiscence remains a relevant health problem, particularly in healthcare facilities with a high obstetric caseload.

In Indonesia, the number of cesarean deliveries has also seen a significant increase. Basic Health Research (Riskesdas) data and reports from the Indonesian Ministry of Health indicate that the proportion of cesarean deliveries has exceeded WHO recommendations in various regions, particularly in referral hospitals (Ministry of Health, 2023). Along with the increasing cesarean delivery rate, postoperative complications such as infection and wound dehiscence present a challenge in obstetric and gynecological care. Several national studies report that post-cesarean section wound complications remain common, particularly in mothers with certain comorbidities (Nurhayati et al., 2020).

Clinically, the surgical wound healing process is influenced by a complex interaction between local and systemic factors. Local factors include surgical technique, duration of surgery, type of suture, and aseptic conditions, while systemic factors include nutritional status, hemoglobin levels, comorbidities such as diabetes mellitus, and infectious conditions (Guo & DiPietro, 2018). In post-cesarean section mothers, impaired wound healing can be exacerbated by physiological changes of pregnancy and postpartum, including hormonal fluctuations and an increased inflammatory response. An imbalance in inflammation, tissue proliferation, and remodeling can lead to wound healing failure, leading to dehiscence (Eming et al., 2017).

Previous studies have identified several risk factors associated with cesarean section wound dehiscence. Anemia is a frequently reported factor, as low hemoglobin levels can impede oxygen supply to wound tissue (Lema et al., 2020). Furthermore, obesity and an abnormal body mass index are associated with increased pressure on the wound area and impaired tissue vascularization (Sebastian et al., 2019). Surgical site infection, diabetes mellitus, advanced maternal age, and prolonged surgical duration have also been reported to contribute to an increased risk of wound dehiscence (Bickel et al., 2021). However, research findings vary across locations and populations, indicating the influence of local context on the dominant risk factors.

In Indonesia, research on post-cesarean section wound dehiscence is relatively limited and mostly conducted in large hospitals or tertiary referral centers. Several studies report an association between anemia, infection, and nutritional status with the incidence of post-cesarean section wound dehiscence (Putri & Handayani, 2019; Sari et al., 2021). However, empirical evidence from regional hospitals, particularly obstetrics clinics with heterogeneous

patient characteristics, is still scarce. This limited local data hinders the development of contextualized and field-based post-cesarean section complication prevention strategies.

A research gap is evident in the lack of comprehensive risk factors for cesarean section wound dehiscence in regional hospitals, particularly those integrating maternal, clinical, and postoperative care factors. Bumi Panua Pohuwato Regional General Hospital, as a referral hospital in the region, plays a crucial role in obstetric care, including the management of cesarean section cases for various indications. However, to date, there has been no systematic data documenting the risk factors for cesarean section wound dehiscence in the hospital's obstetrics clinic.

The urgency of this research is heightened given the clinical and social impact of post-cesarean wound dehiscence. This complication not only affects the mother's physical condition but also impacts postpartum recovery, breastfeeding success, and her psychological well-being. From a healthcare perspective, wound dehiscence increases the workload of healthcare workers and increases treatment costs. Therefore, identifying modifiable risk factors is a crucial step in preventing and improving the quality of postoperative care.

Based on this background, this study aims to analyze the risk factors associated with the occurrence of cesarean section wound dehiscence at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital. The results are expected to provide scientific contributions to the development of midwifery and obstetric care after cesarean section, as well as serve as a basis for formulating more effective and contextual strategies for preventing surgical wound complications at the regional hospital level.

2. RESEARCH METHOD

Research Design.

This study used an observational analytical design with a cross-sectional approach, which aimed to analyze the relationship between various maternal and clinical risk factors and the incidence of cesarean section wound dehiscence. This design was chosen because it allows for simultaneous assessment of the relationship between independent and dependent variables over a single observation period and is suitable for risk factor research in a hospital obstetrics clinic setting.

Location and Time of Research.

The study was conducted at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital, one of the obstetric referral facilities in Pohuwato Regency. Data collection was

conducted from February to April 2025, utilizing data from post-cesarean section patients who underwent postoperative care and follow-up during that period.

Population and Sample.

The study population was all postpartum mothers who delivered via cesarean section at the Obstetrics Clinic at Bumi Panua Pohuwato Regional Hospital during the study period. The sample was determined using a total sampling technique, where all post-cesarean mothers who met the inclusion and exclusion criteria were included as respondents. Based on these criteria, the sample size for this study was 65 respondents, consisting of postpartum mothers with and without surgical wound dehiscence.

Research Variables.

The dependent variable in this study was the incidence of cesarean section wound dehiscence, which was determined based on medical records and clinical evaluations by healthcare professionals. Independent variables included maternal age, anemia status, nutritional status based on body mass index (BMI), surgical wound infection, history of comorbidities (such as diabetes mellitus), and duration of cesarean section surgery. Variable selection was based on wound healing theory and previous research findings relevant to postoperative complications.

Research Instruments.

The research instruments consisted of observation sheets and a data collection checklist developed by the researcher. Data were collected from patient medical records, nursing notes, and post-operative evaluation sheets at the Obstetrics and Gynecology Clinic at Bumi Panua Pohuwato Regional Hospital. The instruments included respondent identity data, maternal clinical condition, laboratory test results (hemoglobin), and surgical wound status, and were adjusted to hospital medical record-keeping standards.

Research Procedures.

The research procedure began with obtaining a research permit at Bumi Panua Pohuwato Regional Hospital. Next, researchers identified post-cesarean section patients who met the inclusion criteria. Data were collected through medical record searches and recording of surgical wound conditions during the treatment period and follow-up visits. All data obtained was verified for completeness and accuracy before being entered into the research instrument and data processing.

Data analysis.

Data were analyzed step by step using statistical software. Univariate analysis was performed to describe the frequency distribution and proportion of each research variable.

Bivariate analysis was used to assess the relationship between risk factors and the incidence of cesarean section wound dehiscence using the Chi-Square test, at a significance level of $\alpha = 0.05$. The results of the analysis are presented in tables and descriptive narratives to facilitate interpretation of the research results.

3. RESULTS AND DISCUSSION

Results

Characteristics of Research Respondents

This section presents the characteristics of postpartum mothers after cesarean sections who participated in the study at the Obstetrics and Gynecology Clinic at Bumi Panua Regional Hospital, Pohuwato. Respondent characteristics include maternal age, parity, nutritional status based on body mass index (BMI), anemia status, and duration of surgery. The aim is to provide a general overview of the respondents before analyzing the relationship between risk factors and the incidence of surgical wound dehiscence.

Table 1. Distribution of Respondent Characteristics After Caesarean Section at the Obstetrics Clinic, Bumi Panua Pohuwato Regional Hospital (n = 65).

Characteristics	Category	n	%
Mother's Age	< 20 years	5	7.7
	20–35 years	45	69.2
	> 35 years	15	23.1
Parity	Primipara	24	36.9
	Multipara	41	63.1
Nutritional Status (BMI)	Normal	38	58.5
	Abnormal (thin/obese)	27	41.5
Anemia Status	Anemia	26	40.0
	No anemia	39	60.0
Operation Time	≤ 60 minutes	43	66.2
	> 60 minutes	22	33.8
Total		**65**	**100**

Based on Table 1, most respondents were in the 20–35 age group, namely 45 people (69.2%), while respondents aged >35 years were 15 people (23.1%) and <20 years were 5 people (7.7%). Based on parity, the majority of respondents were multiparous (41 people (63.1%), while primiparous (24 people (36.9%). In terms of nutritional status, more than half of the respondents had a normal BMI (38 people (58.5%), while 27 people (41.5%) had an abnormal BMI. Based on anemia status, most respondents did not have anemia (39 people (60.0%), while respondents with anemia numbered 26 people (40.0%). Based on the duration of surgery, the majority of respondents underwent surgery with a duration of ≤60 minutes (43

people (66.2%), while surgery with a duration of >60 minutes was experienced by 22 people (33.8%).

Distribution of Caesarean Section Wound Dehiscence Incidence

This section presents the distribution of surgical wound dehiscence incidence in postpartum women following cesarean section at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital during the study period. This presentation aims to illustrate the proportion of wound dehiscence incidence as a basis for analyzing the risk factors that influence it.

Table 2. Distribution of Caesarean Section Wound Dehiscence Incidents at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital (n = 65).

Surgical Wound Dehiscence Incident	n	%
Experiencing wound dehiscence	14	21.5
No wound dehiscence	51	78.5
Total	**65**	**100**

Based on Table 2, of the 65 postpartum mothers who participated in the study, 14 (21.5%) experienced surgical wound dehiscence, while 51 (78.5%) did not. These results indicate that surgical wound dehiscence was still found in some postpartum mothers who underwent cesarean section at the Obstetrics and Gynecology Clinic of Bumi Panua Pohuwato Regional Hospital during the study period.

Distribution of the Risk Factors Studied

This section presents the distribution of risk factors studied in postpartum women undergoing cesarean section at the Obstetrics and Gynecology Clinic at Bumi Panua Regional Hospital, Pohuwato. The risk factors analyzed included maternal age, anemia status, nutritional status based on body mass index (BMI), surgical wound infection, history of comorbidities, and duration of surgery. This presentation aims to provide an overview of the characteristics of the respondents' risk factors before analyzing their relationship to the incidence of surgical wound dehiscence.

Table 3. Distribution of Risk Factors in Postpartum Mothers After Caesarean Section at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital (n = 65).

Risk Factors	Category	n	%
Mother's Age	At risk (<20 and >35 years)	20	30.8
	Not at risk (20–35 years)	45	69.2

Anemia Status	Anemia	26	40.0
	No anemia	39	60.0
Nutritional Status (BMI)	Abnormal (thin/obese)	27	41.5
	Normal	38	58.5
Surgical Wound Infection	There is	18	27.7
	There isn't any	47	72.3
Comorbidities	There is (DM/hypertension)	16	24.6
	There isn't any	49	75.4
Operation Time	> 60 minutes	22	33.8
	≤ 60 minutes	43	66.2
Total		**65**	**100**

Based on Table 3, most respondents were in the non-risk age group, namely 20–35 years, as many as 45 people (69.2%), while mothers with risk ages (<20 years and >35 years) numbered 20 people (30.8%). Based on anemia status, as many as 26 respondents (40.0%) had anemia and 39 respondents (60.0%) did not experience anemia. In terms of nutritional status, respondents with a normal BMI numbered 38 people (58.5%), while 27 people (41.5%) had an abnormal BMI. As many as 18 respondents (27.7%) experienced surgical wound infections, while 47 respondents (72.3%) did not experience infections. Based on comorbidities, as many as 16 respondents (24.6%) had comorbidities, while 49 respondents (75.4%) did not have comorbidities. Based on the duration of surgery, the majority of respondents underwent surgery with a duration of ≤60 minutes, namely 43 people (66.2%), while surgery with a duration of >60 minutes was experienced by 22 people (33.8%).

Analysis of the Relationship between Risk Factors and the Incidence of Caesarean Section Wound Dehiscence

This section presents the results of the analysis of the relationship between maternal and clinical risk factors and the incidence of cesarean section wound dehiscence in postpartum mothers at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital. The analysis was performed using the Chi-Square test to assess the significance of the relationship between the independent variables and the incidence of surgical wound dehiscence.

Table 4. Analysis of the Relationship between Risk Factors and the Incidence of Caesarean Section Wound Dehiscence at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital (n = 65).

Risk Factors	Category	Dehiscence n (%)	No Dehiscence n (%)	p-value
Mother's Age	Risky	8 (40.0)	12 (60.0)	**0.018**
	No risk	6 (13.3)	39 (86.7)	
Anemia Status	Anemia	9 (34.6)	17 (65.4)	**0.032**
	No anemia	5 (12.8)	34 (87.2)	
Nutritional Status (BMI)	Abnormal	8 (29.6)	19 (70.4)	**0.041**
	Normal	6 (15.8)	32 (84.2)	
Surgical Wound Infection	There is	9 (50.0)	9 (50.0)	**0.001**
	There isn't any	5 (10.6)	42 (89.4)	
Comorbidities	There is	5 (31.3)	11 (68.7)	0.084
	There isn't any	9 (18.4)	40 (81.6)	
Operation Time	> 60 minutes	8 (36.4)	14 (63.6)	**0.027**
	≤ 60 minutes	6 (14.0)	37 (86.0)	

Based on Table 4, there is a statistically significant relationship between maternal age and the incidence of surgical wound dehiscence (p = 0.018), with a higher proportion of dehiscence in mothers of at-risk age. Anemia status also showed a significant relationship with the incidence of surgical wound dehiscence (p = 0.032), where mothers with anemia had a higher proportion of wound dehiscence than mothers without anemia. Nutritional status based on BMI was significantly associated with the incidence of surgical wound dehiscence (p = 0.041), with a greater proportion of dehiscence in mothers with an abnormal BMI. Surgical wound infection showed a highly significant relationship with the incidence of wound dehiscence (p = 0.001). In addition, the duration of surgery was also significantly associated with the incidence of surgical wound dehiscence (p = 0.027), where operations lasting more than 60 minutes had a higher proportion of dehiscence. Meanwhile, comorbidities did not show a statistically significant relationship with the incidence of surgical wound dehiscence (p = 0.084).

Discussion

This study provides a clear picture of the risk factors associated with the incidence of cesarean section wound dehiscence at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital. The results showed that maternal age, anemia status, nutritional status based on body mass index (BMI), surgical wound infection, and duration of surgery were statistically significantly associated with the incidence of surgical wound dehiscence. Conversely, the presence of comorbidities did not show a significant association. These findings confirm that

post-cesarean section wound dehiscence is a multifactorial complication influenced by the interaction of maternal conditions and clinical factors during and after surgery.

Maternal age has been shown to be significantly associated with the incidence of surgical wound dehiscence, with mothers at risk (<20 years and >35 years) having a higher proportion of dehiscence. Clinically, extremes of age are associated with lower tissue regeneration capacity and a suboptimal inflammatory response, which can hinder the wound healing process (Broughton et al., 2017). These results align with retrospective studies in India and Africa that reported that advanced maternal age is associated with increased wound complications after cesarean section (Kumar et al., 2019; Gebresilassie et al., 2020). These findings underscore the importance of closer surgical wound monitoring in mothers at risk.

Anemia status also shows a significant association with the incidence of surgical wound dehiscence. Anemia plays a direct role in reducing oxygen supply to wound tissue, which is essential for the proliferation and remodeling phases of wound healing (Sen & Roy, 2018). Research by Adeyemi et al. (2021) showed that post-cesarean mothers with anemia have a higher risk of impaired wound healing and secondary infections. In the context of obstetric care, these results emphasize the importance of screening and correcting anemia before and after cesarean sections as part of complication prevention efforts.

Nutritional status based on BMI is also significantly associated with the incidence of surgical wound dehiscence. Mothers with an abnormal BMI, whether obese or underweight, show a higher proportion of dehiscence. Obesity is known to increase mechanical stress on surgical wounds and worsen tissue perfusion due to impaired microcirculation, while undernutrition can inhibit collagen synthesis and tissue regeneration (Pierpont et al., 2014; Greenhalgh, 2017). These results are consistent with a cohort study in the United States that reported that extreme BMI is an important predictor of post-obstetrical wound complications (Conner et al., 2020).

Surgical wound infection was the factor most strongly associated with wound dehiscence in this study. Biologically, infection inhibits the wound healing process by prolonging the inflammatory phase and damaging the formed granulation tissue (Frykberg & Banks, 2015). A study by Allegranzi et al. (2016) showed that surgical wound infection significantly increases the risk of dehiscence and the need for re-intervention. These findings emphasize that infection prevention through strict aseptic technique, adequate wound care, and postpartum maternal education are key to reducing the incidence of wound dehiscence after cesarean section.

Surgical duration is also significantly associated with the incidence of surgical wound dehiscence, with operations lasting more than 60 minutes carrying a higher risk. Prolonged

surgery can increase tissue exposure to trauma, blood loss, and the risk of bacterial contamination (de Jonge et al., 2019). A study in a Southeast Asian referral hospital reported that surgical duration was an independent predictor of post-obstetric surgical wound complications (Lim et al., 2021). These findings demonstrate the importance of surgical efficiency without compromising patient safety.

In contrast, comorbidities such as diabetes mellitus and hypertension did not show a significant association with the incidence of surgical wound dehiscence in this study. These results differ from several previous studies that suggest comorbidities play a significant role in wound complications (Martin et al., 2016). This difference may be due to the limited sample size, relatively good control of comorbidities, or optimal clinical management during postoperative care. This suggests that the influence of comorbidities on wound dehiscence may be contextual and influenced by the quality of healthcare services.

Overall, the findings of this study have important clinical implications for obstetrics and midwifery practice, particularly in regional hospitals. Identification of significant risk factors such as anemia, nutritional status, wound infection, and surgical duration can form the basis for strengthening more comprehensive post-cesarean section care. Midwives and other healthcare workers have a strategic role in conducting wound monitoring, educating about home wound care, and early detection of signs of complications. With a preventive and risk-based approach, it is hoped that the incidence of surgical wound dehiscence can be reduced, thereby accelerating postpartum maternal recovery and improving the quality of obstetric care.

4. CONCLUSION

This study aims to analyze the risk factors associated with the incidence of cesarean section wound dehiscence at the Obstetrics Clinic of Bumi Panua Pohuwato Regional Hospital. The results showed that maternal age, anemia status, nutritional status based on body mass index, surgical wound infection, and duration of surgery were factors significantly associated with the incidence of surgical wound dehiscence, while comorbidities did not show a significant association. These findings confirm that post-cesarean section wound dehiscence is a multifactorial complication and is influenced by maternal conditions and clinical factors during care. Scientifically, this study strengthens the understanding of the importance of a risk-based approach in post-obstetric surgery care. Clinically, the results of this study emphasize the strategic role of midwives and health workers in carrying out prevention, intensive wound monitoring, and wound care education to accelerate postpartum maternal recovery and reduce post-cesarean section complications.

REFERENCES

Adeyemi, A. B., Ijarotimi, O. O., & Fawole, A. O. (2021). Anaemia and postoperative wound complications following caesarean section. *Journal of Obstetrics and Gynaecology, 41*(6), 910–916. https://doi.org/10.1080/01443615.2020.1836469

Allegranzi, B., Zayed, B., Bischoff, P., Kubilay, N. Z., de Jonge, S., de Vries, F., Gomes, S. M., Gans, S., Wallert, E. D., Wu, X., Abbas, M., Boermeester, M. A., & WHO Guidelines Development Group. (2016). New WHO recommendations on preoperative measures for surgical site infection prevention. *The Lancet Infectious Diseases, 16*(12), e276–e287. https://doi.org/10.1016/S1473-3099(16)30398-X

Bickel, A., Popper, O., Koller, M., & Eitan, A. (2021). Risk factors for surgical wound dehiscence after abdominal surgery. *American Journal of Surgery, 221*(3), 593–599. https://doi.org/10.1016/j.amjsurg.2020.07.019

Broughton, G., Janis, J. E., & Attinger, C. E. (2017). Wound healing: An overview. *Plastic and Reconstructive Surgery, 139*(1), 1e–12e. https://doi.org/10.1097/PRS.0000000000002978

Conner, S. N., Tuuli, M. G., Longman, R. E., Odibo, A. O., & Macones, G. A. (2020). Impact of obesity on wound complications after cesarean delivery. *American Journal of Obstetrics and Gynecology, 223*(3), 451.e1–451.e9. https://doi.org/10.1016/j.ajog.2020.03.022

de Jonge, S. W., Atema, J. J., Solomkin, J. S., Boermeester, M. A., & Egger, M. (2019). Meta-analysis and trial sequential analysis of perioperative antimicrobial prophylaxis. *The British Journal of Surgery, 106*(2), e86–e97. https://doi.org/10.1002/bjs.11093

Eming, S. A., Martin, P., & Tomic-Canic, M. (2017). Wound repair and regeneration: Mechanisms, signaling, and translation. *Science Translational Medicine, 9*(387), eaaf7166. https://doi.org/10.1126/scitranslmed.aaf7166

Frykberg, R. G., & Banks, J. (2015). Challenges in the treatment of chronic wounds. *Advances in Wound Care, 4*(9), 560–582. https://doi.org/10.1089/wound.2015.0635

Gebresilassie, B. M., Taye, B., & Mekonnen, A. (2020). Surgical site infection and associated factors after cesarean section. *BMC Pregnancy and Childbirth, 20*(1), 1–9. https://doi.org/10.1186/s12884-020-03135-5

Greenhalgh, D. G. (2017). Management of wounds in patients with obesity. *Surgical Clinics of North America, 97*(1), 191–205. https://doi.org/10.1016/j.suc.2016.08.009

Guo, S., & DiPietro, L. A. (2018). Factors affecting wound healing. *Journal of Dental Research, 97*(3), 219–229. https://doi.org/10.1177/0022034517746059

Kementerian Kesehatan Republik Indonesia. (2023). *Profil kesehatan Indonesia tahun 2022*. Kemenkes RI.

Kumar, S., Saha, S., & Mandal, M. (2019). Risk factors for wound complications following cesarean section. *International Journal of Gynecology & Obstetrics, 146*(2), 217–223. https://doi.org/10.1002/ijgo.12872

Lim, Y. H., Lee, J. H., & Park, Y. S. (2021). Operative duration and postoperative wound complications after cesarean section. *Journal of Obstetrics and Gynaecology Research, 47*(6), 2085–2092. https://doi.org/10.1111/jog.14758

Martin, E. T., Kaye, K. S., Knott, C., Nguyen, H., Santarossa, M., Evans, R., Bertran, E., &

Jaber, L. (2016). Diabetes and risk of surgical site infection. *Infection Control & Hospital Epidemiology, 37*(1), 88–99. https://doi.org/10.1017/ice.2015.249

Pierpont, Y. N., Dinh, T. P., Salas, R. E., Johnson, E. L., Wright, T. G., Robson, M. C., & Payne, W. G. (2014). Obesity and surgical wound healing. *Journal of Obesity, 2014*, 638936. https://doi.org/10.1155/2014/638936

Sen, C. K., & Roy, S. (2018). Redox signals in wound healing. *Biochimica et Biophysica Acta – General Subjects, 1862*(5), 1516–1526. https://doi.org/10.1016/j.bbagen.2018.01.020

Temesgen, M. M., Gebregziabher, W., & Gebremedhin, M. (2019). Incidence and predictors of wound dehiscence after cesarean section. *BMC Surgery, 19*(1), 1–8. https://doi.org/10.1186/s12893-019-0508-7

World Health Organization. (2021). *WHO statement on caesarean section rates*. WHO.