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Lusher, Joanne; Djatmika, Clementine

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**LETTER TO THE EDITOR**

# Living with a non-healing caesarean section wound: A mini-review

Maternity statistics indicate that caesarean section (CS) rates exceed the 15% rate advocated by the World Health Organisation. It is observed that CS rates that go beyond this figure are indicative of unnecessary surgery that poses a risk to maternal health.<sup>1</sup> Risk factors associated with poor CS outcomes are also on the rise, along with underlying medical comorbidities such as obesity and diabetes.<sup>2</sup> Currently, there is a lack of information regarding the prognosis of slow to heal CS wounds; the experiences and perspectives of the women living with these wounds; and viable intervention programmes designed to cater to these needs. This is an important area of research as poor postnatal prognosis has been linked to long-term physical and psychological mother-infant outcomes, for example, reduced capacity to breastfeed resulting in the loss of protective factors associated with breastfeeding.<sup>3</sup> On a wider scale, this has significant implications on health service resources with regard to treating chronic conditions and acute/secondary care setting readmissions related to poor post-CS surgery wound healing. We propose that new research is vital for a better understanding of the intricacies and challenges faced by women who are mothering a newborn while recovering from a slow to heal CS wound.

CS is a surgery that typically involves making an incision on the mother's lower abdomen and uterus in order to deliver one or more babies. As is the case with all types of surgical procedures, there are major risks associated with CS. Some postoperative complications associated with CS include infection and wound dehiscence, which will require further medical attention and stages of disruption to patient lives.<sup>4</sup> One of the key challenges faced by health professionals lies in auditing CS results in order to set national level guidelines and policies. Acute settings vary in birthing practices with CS rates ranging between 10% and 30%, therefore inequalities in maternal outcomes across localities will be inevitable.<sup>5</sup> In a study of maternity units in the United Kingdom, prevalence of CS wound-related complications was reported at 14% with an 84% occurrence following discharge, suggesting a need for improved prevention

strategies.<sup>6</sup> Considering costs associated with the increasing demand for CS surgery (£5 million per year for 1% increase)<sup>5</sup> and chronic wound management,<sup>7</sup> it is substantial to argue that more should be done to investigate this gap in knowledge regarding CS wound outcomes. Studies investigating factors associated with post-CS morbidity have identified medical (BMI),<sup>2</sup> non-medical determinants (maternal stress),<sup>8</sup> and soci-demographics (immigration status).<sup>9</sup> However, there remains a lack of understanding of how best to cater to the needs of women at risk of or presenting with non-healing CS wounds in a way that is effective and economically viable.<sup>5,9</sup>

In recent studies, qualitative methodologies have been advocated as a way of capturing and understanding the psychosocial experience of the person living with the wound.<sup>10</sup> It can be argued that this direction is relevant in postpartum care: women who are recovering from a CS have complex, multidimensional needs that are often subjugated by social expectations and subjective ideologies of what it means to be a mother.<sup>11</sup> Similarly, qualitative research is a way of exploring postnatal experiences that are subjective (pain perception) and hallmarked by sociocultural indices as a way of opening up discussions surrounding accessible postnatal care.<sup>12</sup> Despite the known health care cost burden and implications associated with poor obstetric outcomes (impaired lacto production),<sup>13</sup> there remains an absence of published research that explains perspectives and attitudes of women who are experiencing complications with CS wound site healing.

Studies have focused on patients' experience with chronic wounds such as leg ulcers or acute wounds from general surgery.<sup>14,15</sup> However, there is a gap in research investigating wound healing in multifaceted samples such as women recovering from CS surgery. This warrants investigation due to the growing trend of birthing by CS procedures and the increase of risk factors associated with unsatisfactory CS outcomes. Statistics show that approximately one in four birth deliveries in the United Kingdom are now performed by CS.<sup>4</sup> Furthermore, figures indicate inequalities in CS outcomes; CS wound site

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infection (SSI) rates are approximately double the average rate in women who are obese or diabetic, for women who have a BMI > 35 the risk increases up to around 4 times the average rate. These rates are comparable to SSI statistics associated with “dirty” surgical procedures such as bowel surgery, which is around the 15% mark.<sup>16</sup> With the increase in obesity and diabetes, complications associated with these comorbidities following a CS will become a growing problem for health services.

Moreover, there are disparities in perinatal health that can influence the choice of delivery method and labour outcomes. For example, immigrant status/ethnicity is associated with labour complications resulting in emergency CS<sup>9</sup> and poorer postnatal outcomes in comparison with country-born women.<sup>17</sup> Delayed wound healing care models explicate that stressful pre-surgery situations, in this case labour complications/emergency CS, can trigger biomechanisms (disrupted immune system) and maladaptive coping behaviours that are detrimental to wound healing.<sup>18</sup> In the case of the immigrant mother, it is argued that unequal postnatal results are a manifestation of a birthing experience that is not culturally accepted or understood by the new mother.<sup>19</sup> Alternatively, a meta-analysis postulated that unsatisfactory CS outcomes among immigrant women stem from pre-existing sociocultural barriers that are not well investigated.<sup>9</sup> Furthermore, studies highlight that health care systems in Western countries are not well equipped to cater to the birthing needs of a population that is growing in diversity.<sup>20</sup> A better understanding of patients' experience is essential due to wider implications as poor CS wound management could be costly. One study reported that a hospital readmission costs the NHS approximately £350 per bed day, not inclusive of wound nursing and follow-up community care.<sup>16</sup> In the case of the new mother, physical, emotional, and financial debility caused by CS wound complications can arguably have a meaningful impact on the quality of mother-infant attachment.

Our mini-review of the available literature exposed some key themes across wound and obstetric studies: importance of the quality of relationship with health care providers; qualitative studies examining women's recovery from CS highlight that the resulting CS wound can have a significant bearing on well-being and lack of awareness regarding post-surgical indicators can further impede post-natal recovery; women report feeling fear, underprepared and disempowered when faced with unexpected side effects such as persistent pain and complications (eg, dehiscence) associated with CS site wounds; and mothers face challenges attempting to follow post-CS wound care instructions prescribed by clinicians. It is argued that this stems from antenatal

preparations that largely focus on biomedical and systematic areas of birth (ie, breastfeeding) as opposed to the psychosocial dominions that hallmark the postnatal period (eg, chronic pain management). Collectively, the research points to a need for better post-discharge care packages and tailor-made needs assessments, as well as improved communication with key health care professionals during ante- and post-natal periods.

We conclude that further research is vital to address some limitations in the existing literature: qualitative studies have tended to focus on patient experience with practical aspects of wound healing (wound dressing procedures following acute surgery). It is argued that these studies overlook other pertinent factors in the wound healing process.<sup>7</sup> Moreover, we know that various psychosocial factors can predict postpartum maternal morbidity and these factors can influence organic inflammatory mechanisms responsible for delayed wound healing.<sup>21</sup> However, there is a shortage of research that has explored how these factors are deconstructed and how coping with a hard to heal wound can impact on the psychosocial experience of mothering a newborn. It is intended that this mini-review will entice some fresh thinking in this field of wound research.

## CONFLICT OF INTEREST

The authors declare no potential conflict of interest.

Joanne Lusher<sup>1</sup>  
Clementine Djatmika<sup>2</sup>

<sup>1</sup>*School of Health and Life Sciences, University of the West of Scotland, London, United Kingdom*

<sup>2</sup>*Department of Psychology, University of the West of England, Bristol, United Kingdom*

## Correspondence

Joanne Lusher, School of Health and Life Sciences,  
University of the West of Scotland, London Campus,  
United Kingdom.  
Email: joanne.lusher@uws.ac.uk

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