

# Correlation Between Psychosocial Support and Maternal-Fetal Outcomes Among Women in Labour At A Low Resource Setting Health Facility in Uganda: Analytical Cross-Sectional Study

Clement Munguiko<sup>1\*</sup>, James Kateregga<sup>1</sup>, Joseph Atukwatse<sup>2</sup>, Josephine Namujju<sup>4</sup>, Enos Mirembe Masereka<sup>3</sup>, Clare Nankinga<sup>4</sup>, Alice C. Alum<sup>4</sup>, Samuel Okello<sup>4</sup>, Safina Akello<sup>5</sup> and Samuel Kabwigu<sup>6</sup>

<sup>1</sup>Doctoral student, Soroti University, School of Health Sciences, Uganda; Moi University, School of Medicine, Kenya

**\*Corresponding Author**

Clement Munguiko, Soroti University, School of Health Sciences, Uganda.

<sup>2</sup>Lecturer, Soroti University, School of Health Sciences, Uganda

**Submitted:** 2025, May 25; **Accepted:** 2025, July 03; **Published:** 2024, July 18

<sup>3</sup>Lecturer, Mountains of the Moon University, Faculty of Health Sciences, Uganda

<sup>4</sup>Lecturer, Soroti University, School of Health Sciences, Uganda

<sup>5</sup>Head nurse/midwife – skills training, Soroti University, School of Health Sciences, Uganda

<sup>6</sup>Senior lecturer – Obstetrics and Gynaecology, Soroti University, School of Health Sciences, Uganda

**Citation:** Munguiko, C., Kateregga, J., Atukwatse, J., Namujju, J., Masereka, E. M., et al. (2025). Correlation Between Psychosocial Support and Maternal-Fetal Outcomes Among Women in Labour At A Low Resource Setting Health Facility in Uganda: Analytical Cross-Sectional Study. *J Nur Healthcare*, 10(3), 01-12.

## Abstract

**Introduction:** Labour and delivery processes often evoke intense fear and anxiety among pregnant women. Although psychosocial support has been shown to reduce anxiety and fear during labour, the extent to which it is provided and its relationship with maternal and fetal outcomes remain poorly understood.

**Purpose:** To determine the level of psychosocial support and its association with maternal and fetal outcomes among pregnant women in labour.

**Methods:** This study was conducted at a regional referral hospital in Eastern Uganda using a quantitative analytic cross-sectional design. A total of 168 low-risk women in labour, with cervical dilatation of 5 cm or less, were enrolled. Perceived and observed psychosocial support were measured using a modified Multidimensional Scale of Perceived Social Support (MSPSS). Maternal complications and Apgar scores were assessed as maternal and fetal outcomes, respectively, and their association with perceived psychosocial support was analyzed using logistic regression. Sociodemographic and obstetric predictors of outcomes were also measured to account for confounding factors. Ethical approval was obtained from the Busitema University Faculty of Health Sciences Research Ethics Committee (No. BUFHS-2023-71).

**Results:** Almost all participants (97%) perceived the psychosocial support they received as adequate. However, direct observation revealed that only 14.3% actually received adequate support. Psychosocial support during labour was strongly associated with higher Apgar scores (aOR: 12.529,  $p = 0.011$ ). No significant association was found between psychosocial support and maternal

---

complications (aOR: 0.92,  $p = 0.946$ ). Notably, the distance from home to hospital was significantly associated with fetal outcomes (Apgar score) ( $p = 0.048$ , 95% CI: 1.001–1.10). Additionally, parity, education level, and distance to the hospital were significantly associated with birth complications.

**Conclusion:** A clear disparity was observed between perceived and actual psychosocial support among women in labour. Women who perceived the psychosocial support they received as adequate were 12.5 times more likely to deliver babies with good Apgar scores compared to those who did not. These findings may inform policy, intrapartum care practices and further research needed to improve maternal and fetal outcomes especially in low resource settings.

**Keywords:** Psychosocial, Maternal, Fetal, Outcomes, Labour

## 1. Background

Labour and delivery experience among women is usually full of unforgettable memories and therefore is regarded as a very important period in their lives. High level of fear and anxiety which usually occurs during childbirth can negatively affect the process of labour and consequently lead to maternal and fetal complications. High levels of fear and anxiety stimulates production of cortisol which activates sympathetic system to release catecholamines that reduce blood flow to the placenta [1].

Findings from a systematic review study revealed that lack of psychosocial support (PSS) to women during labour and delivery was one of the main causes of fear of childbirth, also known as tokophobia [2]. Most of the concepts of PSS such as compassionate and respectful care as well as effective communication between care giver and women in labour remain central in the definition of quality of midwifery care [3]. Emotional support has been described as the expression of intimacy and attachment, reassurance, and being able to confide in and rely on another [4]. PSS provided to women in labour can be described as perceived (PPSS) or observed (OPSS).

PPSS is a mental construct of the woman in labour about the quantity and quality of the psychosocial support provided while OPSS is the amount of actual support that a woman receives [5]. However, in health promotion context, PPSS is more important than OPSS because if the source of support is not perceived, then it cannot be appreciated and applied [6]. In United Arab Emirates, majority of the women reported that PSS was a very important aspect of care during labour and was best provided by both skilled and unskilled birth attendants [7]. In Uganda, provision of PSS to pregnant women during labour has also been reported to reduce tokophobia, anxiety, and consequently improve coping with labour demands [8]. As a result, many countries including Uganda recently adopted WHO labour care guide which also emphasizes the need to provide PSS to all women during labour [9].

However, there is scanty literature about the extent at which women in labour receive psychosocial support and how this support is related to maternal and fetal outcomes. Therefore, the purpose of this study was to determine the level of psychosocial support and its association with maternal and fetal outcomes among pregnant women in labour.

## 2. Methods

### 2.1 Study Design, Setting and Inclusion Criteria

We conducted this study between May and June 2023 using an analytical cross-sectional study design to address the study objectives. The study took place at one of the high-patient-volume health facilities in Northeastern Uganda. Approximately 300 deliveries are conducted at this health facility on a monthly basis, of which half of them are normal deliveries. We included low-risk pregnant women in labour with cervical dilatation of 5 cm or less, regardless of age, number of previous pregnancies, cultural background, or parity. Low-risk pregnant women were defined as those with normal pregnancies who were expected to have uncomplicated vaginal deliveries.

### 2.2 Sample Size and Sampling Technique

We used a 95% confidence level, a 5% margin of error, and a population proportion of 50%, based on a study population of 300 women. Using an online sample size calculator (Qualtrics), we determined a required sample size of 168 participants. A purposive sampling technique was employed to enrol participants. Women in labour who met the inclusion criteria were consecutively enrolled until the required sample size was achieved.

### 2.3 Data Collection Tools and Procedure

We measured both perceived and observed psychosocial support (PPSS & OPSS) and collected data using adapted Multidimensional Scale of Perceived Social Support (MSPSS) tool and observation checklist. MSPSS is 12 - item tool commonly used to measure perceived psychosocial support (Hamza et al, 2012; Hannan et al, 2016). We adapted this tool and measured the level of psychosocial support (PSS) using 17 items under the four main parameters: support by significant others (husband), family members, friends, and health care provider. PPSS was subjective view of the participants about the extent they felt they were being socially, emotionally, and physically supported by significant others (husband), family, friends and health care provider and their responses were recorded on a 5 – point Likert scale. OPSS support was the objective view of the Research Assistants (RAs) who continuously observed the extent the same psychosocial support networks provided care to the participants during childbirth and data was equally recorded on a 5-point Likert scale observation checklist.

PPSS and OPSS were then dichotomized as either adequate or

inadequate. We considered PPSS in determining association between psychosocial support (PSS) and fetal-maternal outcomes because it is the type of support that study participants appreciated. To determine the association between PSS and maternal outcomes, we considered maternal complications such as extensive tears, intrapartum and postpartum hemorrhage among others as key maternal outcomes and then recorded findings as either maternal complications present or absent. To determine the association between PSS and fetal outcomes, we measured fetal outcomes using Apgar score. Apgar score is a scoring system which health care providers use to assess wellbeing of newborns at one minute and five minutes after birth. The tool was developed by Dr. Apgar Virginia in 1952 and used her name as mnemonic for each of the following five parameters that we scored: Appearance, Pulse, Grimace, Activity, and Respiration (Nall, 2023) [10]. Accordingly, each parameter was scored on a scale ranging from zero (0) to two (2), implying that the lowest score for each newborn baby was zero (0) while the highest was ten (10). Findings were then recorded as either good (7 – 10) or poor Apgar score (<7).

To understand this relationship, we also collected data on its possible confounders such as sociodemographic and obstetric factors and characterized them as secondary predictors. Data collection was done by two Research Assistants (RAs) who also provided basic care as they collected data. RAs were qualified nurses who were trained before data collection.

### 2.5 Statistical Analysis

Data was checked for completeness, coded, entered into kobo collect software and then transferred into SPSS version 28 for analysis. Descriptive statistics for sociodemographic, obstetric, and level of PSS parameters were computed, and the results were summarized in the form of percentage and frequency in a table. Median and interquartile ranges were used given that variables were not normally distributed data.

Perceived and observed psychosocial support (PPSS & OPSS) parameters were also compared to determine whether they were statistically similar or not.

Before carrying out binary logistic regression analysis, testing for the assumptions was done for each outcome variable. These include outcome variable being binary and thus follows a binomial distribution, values of the outcome being statistically independent, having no outliers in continuous predictors, and having no collinearity between continuous predictor variables.

On testing whether there were no outliers in continuous predictors using cooks' distance, leverage and DFBETA, the case wise list indicated that no case had values that were beyond 3 standard deviation and thus no outliers in the data. On checking for the assumption for no collinearity between predictor variables using VIF and tolerance after running linear regression model on logit as the outcome, all the predictors had VIF less than 10 as a rule of the thumb and their corresponding tolerance were not less than 0.1 as a standard. Therefore, there was no collinearity

among continuous predictor variables. Only variables that were statistically significantly associated with outcome variable at bivariate level at recommended cut off of  $p < 0.2$  were selected for multivariate analysis. Before inclusion into multivariate analysis, testing for interaction and confounding was performed and final model was fitted after carrying out a goodness of fit test using hosmer lemeshow test of goodness of fit. The level of statistical significance using p-values was set at  $p < 0.05$ .

### 2.6 Ethical Approval

The study obtained ethical approval from a Research Ethics Committee approved (No. BUFHS-2023-71).

## 3. Results

### 3.1 Sociodemographic and Obstetric Characteristics of Participants

The study enrolled 168 women in labour. Most participants were aged between 21 and 31 years, with a median age of 24 years. More than two-thirds (83.9%) were married, while the remainder were single, separated, or divorced. Additionally, 42.3% had completed primary education, and a quarter (25%) had attained tertiary-level education. All participants had between one and three pregnancies. *See table 1.*

### 3.2 The Level of Psychosocial Support Provided to Women During Labour

We found that nearly all study participants (97%) perceived psychosocial support (PPSS) they received during labour as adequate. To the contrary, we observed that only 14.3% of the participants received adequate psychosocial support (OPSS). It was observed that overall PPSS and OPSS were similar ( $p:0.458$ ) and this was also true for PPSS and OPSS provided by family members and health care providers ( $p > 0.05$ ). However, PPSS provided by the husband and friends was statistically significantly different from OPSS ( $p < 0.05$ ). Most of the PPSS was provided by close family members while the least was by health care providers. *See table 2.*

### 3.3 Association Between Perceived Psychosocial Support (PPSS) and Maternal Outcomes

The objective of this part of the study was to determine the association between Perceived Psychosocial Support (PPSS) and maternal outcomes, specifically maternal complications during labour. Binary logistic regression was used due to the dichotomous nature of the outcome variable.

At both bivariate and multivariate analysis, PPSS was not statistically significantly associated with maternal complications. Even after adjusting for potential confounders such as distance to hospital, gravidity, and level of education, the association remained non-significant ( $p = 0.946$ ). In contrast, distance to the hospital, gravidity, and educational attainment were independently and significantly associated with maternal complications. For every additional unit of distance (likely in kilometres), there was a 5% increase in the odds of experiencing maternal complications (aOR = 1.05; 95% CI: 1.01–1.09). Women with intermediate gravidity

(2–5 pregnancies) had a 59% lower risk of maternal complications compared to primigravida women (aOR = 0.41; 95% CI: 0.19–0.91). Unexpectedly, women with tertiary education had almost four times higher odds of maternal complications compared to those with no education (aOR = 3.86; 95% CI: 1.40–10.66). See table 3.

### 3.4 Association between Perceived Psychosocial Support (PPSS) and Fetal Outcomes

This component of the study examined the association between Perceived Psychosocial Support (PPSS) and fetal outcomes, measured using the Apgar score (categorized as good vs poor). A binary logistic regression model was used after confirming that assumptions were met.

At bivariate analysis, Apgar score was significantly associated with PPSS ( $p = 0.013$ ), and distance to hospital ( $p = 0.054$ ), using the liberal cut-off of  $p < 0.20$  for inclusion in multivariate analysis. At multivariate analysis, both factors remained statistically significant: Women who perceived psychosocial support as inadequate had 12.5 times higher odds of delivering a baby with a poor Apgar score (aOR = 12.529; 95% CI: 1.77–88.95;  $p = 0.011$ ). For every additional kilometre travelled to reach the hospital, the odds of delivering a baby with a poor Apgar score increased by 4.9% (aOR = 1.049; 95% CI: 1.001–1.10;  $p = 0.046$ ), holding PPSS constant.

These results demonstrate a strong and independent association between both psychosocial and geographic factors with immediate neonatal wellbeing as assessed at birth. See table 4.

## 4. Discussion

We set out to determine the level of psychosocial support (PSS) and its association with maternal and fetal outcomes among women in labour at a health facility in a low resource setting in Uganda. We found that almost all pregnant women in labour who participated in this study perceived psychosocial support they received as adequate. On the contrary, we observed that only about one in seven study participants were adequately supported by either family member, partner, friend, or health care worker. This apparent contradiction between perceived and actual psychosocial support suggests a significant discrepancy between the women's subjective experiences and measurable indicators of support. While women believed they were sufficiently supported during labour, the observable presence and active involvement of support persons was markedly limited. This raises important questions regarding how psychosocial support is understood, experienced, and valued by women in labour in this context.

Several factors could account for this divergence between perceived and actual psychosocial support: Cultural norms and expectations accounts for this finding. This is because in some low-resource settings, the expectation for support during labour may be minimal due to prevailing cultural norms. Women may have internalized low expectations regarding support and therefore perceive even minimal or symbolic gestures as adequate. Normalization of the

limited psychosocial support also explains this observation.

Due to chronic under-resourcing and overburdening of healthcare systems, particularly in rural or low-resource settings, women may have come to accept limited healthcare worker engagement and sparse presence of family members as the norm. This normalization may alter perceptions of what constitutes "adequate" support. Women in such settings often develop strong internal coping strategies, including reliance on spiritual or personal resilience, which might lead them to feel emotionally supported even in the absence of tangible external support. Fear of reprisal or social desirability bias cannot also be completely eliminated. Possibly, some women may feel reluctant to express dissatisfaction with care or support due to fear of judgement or negative consequences, especially when interviews are conducted within or near health facilities. This can contribute to overly positive self-reporting of experiences. Lastly, there may be a lack of awareness or understanding among women of what constitutes comprehensive psychosocial support, including emotional presence, physical comfort, and informational support. As such, women may equate the mere act of being attended to medically as psychosocially supportive.

These findings can be best understood through the lens of the Health Belief Model (Green et al., 2020), which posits that health behaviours and perceptions are influenced by individuals' beliefs about health problems, perceived benefits of action, perceived barriers to action, and self-efficacy. According to this model: The women's perception of adequate support may reflect low perceived susceptibility to emotional harm from limited support, or a belief that benefits of care are strictly clinical rather than psychosocial. The barriers to receiving true psychosocial support such as limited facility policies on birth companions, partner absence, or stigma may not be fully recognized or challenged by the women, further normalizing the absence of support. Additionally, the cues to action, such as health education or community awareness programs promoting the value of continuous support during labour, may be lacking in this setting. This explanation resonates well with what was also found in one of the studies that explored the influence of Health Belief Model parameters such as perceived susceptibility, perceived severity and perceived benefits on the prevention of anaemia in pregnancy [11].

Furthermore, these findings resonate with Kleinman's Explanatory Model from medical anthropology, which emphasizes that patients and healthcare workers often operate under different cultural assumptions and understandings of illness and care. Women may frame their experience of labour support within a culturally-specific narrative that differs from biomedical or public health definitions of adequate psychosocial care [12–14].

The lack of association between PPSS and maternal complications suggests that while psychosocial support may contribute positively to the subjective birth experience and mental health, it may not directly influence the clinical maternal outcomes, such as haemorrhage, sepsis, or hypertensive disorders, especially in

---

the presence of overriding biomedical and contextual factors. Moreover, the influence of psychosocial factors may be more prominent in long-term psychological outcomes (e.g., postpartum depression, maternal satisfaction) than in immediate physical complications during labour [14]. This may also reflect a possible mismatch between the type or quality of psychosocial support perceived and the form of support needed to influence biological outcomes.

The increased odds of maternal complications with increasing distance to the health facility reflect a well-established public health concern in low-resource settings. Delays in accessing care (especially the second delay in the "Three Delays Model") lead to late presentation at health facilities, worsening of complications, and reduced opportunity for timely interventions. This aligns with findings across sub-Saharan Africa, where geographic barriers remain a major determinant of adverse maternal outcomes [16,17]. Intermediate gravidity (2–5 pregnancies) was protective, likely due to the combined benefit of previous childbirth experience and the lower obstetric risk compared to both first-time mothers who face higher risks due to physiological immaturity and labour dystocia and grand multiparas who face risks like uterine rupture or placenta previa [18]. Women with moderate gravidity often have better awareness of danger signs and health-seeking behaviours. The increased risk of maternal complications among educated women reported in this study appears counterintuitive. However, it may be explained by the fact that educated women tend to report to the health facilities early where obstetric complications are diagnosed and reported compared to the non-educated. Educated women may be more vocal or aware of symptoms and therefore more likely to report or be diagnosed with complications. Similarly, Higher education is often associated with older maternal age at first childbirth, which itself is a known risk factor for complications such as preeclampsia and gestational diabetes [15,18-20].

The strong association between inadequate perceived psychosocial support and poor fetal outcomes suggests that the emotional and psychological state of a woman during labour can significantly influence neonatal wellbeing. This relationship can be explained through several physiological and psychological mechanisms. One key explanation involves stress and activation of the Hypothalamic–Pituitary–Adrenal (HPA) axis. Inadequate support during labour increases maternal stress, which stimulates the HPA axis, leading to elevated levels of cortisol and catecholamines especially adrenaline and noradrenaline [21]. These stress hormones can cause uterine vasoconstriction, reducing blood flow and oxygen delivery to the fetus [22]. Additionally, they may lead to uterine dysregulation, resulting in ineffective contractions and prolonged labour. These factors can contribute to fetal hypoxia, which may manifest clinically as a low Apgar score at birth [23].

Other than the influence of hormones, the other possible explanations of the relationship between psychosocial support and fetal wellbeing can be that without emotional encouragement or physical support, labour may be prolonged or poorly managed. Prolonged second stage of labour increases risk of fetal distress,

meconium aspiration, and birth trauma all known contributors to low Apgar scores. Also, women with inadequate support may hesitate to express discomfort or warning signs during labour, delaying timely interventions. Poor communication between women and healthcare providers can further compromise rapid response to fetal distress.

Findings from this study are also explained by what other studies reported. For instance, regarding the level of psychosocial support in labour, findings from this study are consistent with those from the study in Australia and Slovakia but differ from what was found in Saudi Arabia [24-26]. The difference in perceived and observed psychosocial support can be explained by the limited awareness of women about the quality of psychosocial support they deserve. This variation can also be explained by the cultural norms held by the study participants. Study participants seemed to hold a notion that inadequacies of a male partner should not be disclosed to the external person. Also, since data was collected by participant observation technique, this could have affected the quality of data for both perceived (PPSS) and observed psychosocial support (OPSS).

Perceived psychosocial support has been found to reduce tokophobia, improve adaptation and coping to childbirth experience [27,28]. Less fear, adaptation and childbirth coping have been found to be associated with increased level of oxytocin and endorphins [29]. Oxytocin causes uterine contractions and creates positive feelings while endorphins mediate pain relief and euphoria during labour.

Indeed, a study in Sweden revealed that women who received psychosocial support were more likely to experience less labour pain and used less analgesics [30]. We found that a woman in labour who perceived psychosocial support as adequate had increased odds of delivering a baby with good Apgar score compared to a woman who did not. Our study findings compare with findings from two studies in Iran but contrast with study findings from Sweden and Uganda [8,29,31]. The positive association between perceived psychosocial support and Apgar score may be explained by the positive effect that psychosocial support has on oxytocin release [1].

However, we did not find any association between perceived psychosocial support and maternal complications. Findings from this study compare with what was reported by the study in Uganda but contrast with findings from a systematic review study (Chen et al., 2018) [8,32]. We could have failed to detect the association between perceived psychosocial support and maternal complications possibly because our study did not have enough power due to the small sample size.

## 5. Conclusion and Recommendations

This study set out to assess the level of psychosocial support (PSS) and its association with maternal and fetal outcomes among women in labour in a low-resource health facility setting in Uganda. The findings present a complex and nuanced picture

---

of how psychosocial, socio-demographic, and structural factors intersect to influence maternal and neonatal health.

Although the majority of women subjectively perceived the psychosocial support received during labour as adequate, objective measures revealed that only a minority actually received meaningful support from family, partners, or healthcare providers. This discrepancy between perception and actual support underscores the influence of socio-cultural expectations, normalization of suboptimal care, and limited awareness of what constitutes effective psychosocial support.

Psychosocial support was not significantly associated with maternal complications after adjusting for confounders. Instead, maternal outcomes were more strongly influenced by distance from home to hospital, gravidity, and level of education. These findings highlight the continuing dominance of structural and biomedical determinants in shaping maternal morbidity in low-resource settings.

In contrast, fetal outcomes, measured using Apgar scores, showed a statistically significant and independent association with both perceived psychosocial support and distance to the health facility. Women who perceived support as inadequate were over twelve times more likely to deliver neonates with poor Apgar scores. This finding highlights the physiological relevance of the maternal emotional state during labour, particularly via stress-mediated pathways such as the HPA axis and catecholamine release, which may contribute to uteroplacental insufficiency and fetal hypoxia.

Taken together, these findings underscore the critical role of both psychosocial care and access to skilled, timely obstetric services in improving birth outcomes. While clinical interventions remain essential, a more holistic, woman-centred approach is urgently needed, one that integrates emotional, psychological, and relational dimensions of care alongside biomedical practices.

Therefore, to improve maternal and fetal outcomes through enhanced psychosocial support for women during labour, the following recommendations are proposed:

- The Ministry of Health should formally incorporate psychosocial care especially continuous labour support into maternal care protocols, ensuring it is viewed as an essential, not optional, component of obstetric care.
- Health facility policies should be reviewed to promote the presence of birth companions of choice during labour and delivery, in line with WHO's recommendations for respectful maternity care.
- Ministry of Health should expand and equitably distribute maternal health services to reduce the travel distance to healthcare facilities, especially in rural and underserved regions. Ambulance services should be strengthened
- Midwives, nurses, and doctors should receive training on the importance of psychosocial support, effective communication, and emotional responsiveness during labour
- Routine assessment of women's emotional and psychological

wellbeing during antenatal and perinatal care should be implemented to identify those in need of additional support

- Community health workers such as village health teams and local leaders should be involved in educating families and partners about the importance of supporting women during labour and the potential consequences of emotional neglect on neonatal outcomes
- Conduct longitudinal studies to assess the long-term impact of psychosocial support on maternal and neonatal-infant outcomes beyond the immediate intrapartum postpartum period
- Evaluate interventions designed to improve psychosocial support during labour such as the introduction of doulas or peer support workers to identify scalable and cost-effective models of care [33].

### Acknowledgement

We would like to thank Soroti University for funding this study and women who volunteered to participate in this study.

### Source of Funding

This study received funding support from Soroti University directorate of research and innovations (SUN-RIF/2022/02).

### References

1. Koroglu, C. O., Surucu, S. G., Vurgec, B. A., & Usluoglu, F. (2017). The fear of labor and the roles of midwives. *Life: International Journal of Health and Life-Sciences*, 3(2), 51-64.
2. Donel, J. (2019). Tocophobia: overwhelming fear of pregnancy and childbirth. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 8(11), 4641-4646.
3. Kyaddondo, D., Mugerwa, K., Byamugisha, J., Oladapo, O. T., & Bohren, M. A. (2017). Expectations and needs of Ugandan women for improved quality of childbirth care in health facilities: A qualitative study. *International Journal of Gynecology & Obstetrics*, 139, 38-46.
4. Kyaddondo, D., Mugerwa, K., Byamugisha, J., Oladapo, O. T., & Bohren, M. A. (2017). Expectations and needs of Ugandan women for improved quality of childbirth care in health facilities: A qualitative study. *International Journal of Gynecology & Obstetrics*, 139, 38-46.
5. Vakilian, K., Zarin, F., & Zaraj, H. (2018). The relationship between perceived social support in pregnancy and self-efficacy for childbirth fear-a cross-sectional study in Arak city, 2017. *The Open Public Health Journal*, 11(1).
6. Azimi, M., Fahami, F., & Mohamadirizi, S. (2018). The relationship between perceived social support in the first pregnancy and fear of childbirth. *Iranian journal of nursing and midwifery research*, 23(3), 235-239.
7. Khresheh, R., Barclay, L., & Shoqirat, N. (2019). Caring behaviours by midwives: Jordanian women's perceptions during childbirth. *Midwifery*, 74, 1-5.
8. Wanyenze, E. W., Nalwadda, G. K., Byamugisha, J. K., Muwanguzi, P. A., & Tumwesigye, N. M. (2023). Effect of

- midwife-provided orientation of birth companions on maternal anxiety and coping during labor: A stepped wedge cluster randomized control trial in eastern Uganda. *International Journal of Environmental Research and Public Health*, 20(2), 1549.
9. WHO. (2020). WHO labour care guide: User's manual. Human Reproduction Programme Zamani, P., Ziaie, T., Lakeh, N. M., & Leili, E. K. (2019). The correlation between perceived social support and childbirth experience in pregnant women. *Midwifery*, 75, 146-151.
  10. Nall, R. (2023, 20th January 2024). Apgar score: What you should know. Healthline.
  11. Irawati, D., Madinah, A., Wayanti, S., & Esyuananik, E. (2024). Health Belief Model Theory Approach to Analyze Pregnant Women's Ability to Prevent Anemia. *Jurnal Kesehatan*, 15(1), 31-38.
  12. Dein, S. (2003). Against belief: The usefulness of explanatory model research in medical anthropology. *Social theory & health*, 1, 149-162.
  13. Bollig, M., & Finke, P. (2014). Explanatory models in anthropology: Methodological refinements, cross-cultural comparison and theoretical developments. *Zeitschrift für Ethnologie*, 39-54.
  14. Ugwu, N. U., & De Kok, B. (2015). Socio-cultural factors, gender roles and religious ideologies contributing to Caesarian-section refusal in Nigeria. *Reproductive health*, 12, 1-13.
  15. Ahmed, A., Akter, E., Sayeed, A., Rahman, F., Hanson, M., Saha, N., ... & Rahman, S. M. (2024). Factors influencing delivery-related complications and their consequences in hard-to-reach areas of Bangladesh. *Sexual & Reproductive Healthcare*, 40, 100973.
  16. Geleto, A., Chojenta, C., Musa, A., & Loxton, D. (2018). Barriers to access and utilization of emergency obstetric care at health facilities in sub-Saharan Africa: a systematic review of literature. *Systematic reviews*, 7, 1-14.
  17. Kyei-Nimakoh, M., Carolan-Olah, M., & McCann, T. V. (2017). Access barriers to obstetric care at health facilities in sub-Saharan Africa—a systematic review. *Systematic reviews*, 6, 1-16.
  18. Saleh, A. M., Dudenhausen, J. W., & Ahmed, B. (2017). Increased rates of cesarean sections and large families: a potentially dangerous combination. *Journal of perinatal medicine*, 45(5), 517-521.
  19. Luke, B., & Brown, M. B. (2007). Elevated risks of pregnancy complications and adverse outcomes with increasing maternal age. *Human reproduction*, 22(5), 1264-1272.
  20. Shan, D., Qiu, P. Y., Wu, Y. X., Chen, Q., Li, A. L., Ramadoss, S., ... & Hu, Y. Y. (2018). Pregnancy outcomes in women of advanced maternal age: a retrospective cohort study from China. *Scientific reports*, 8(1), 1-9.
  21. Alehagen, S., Wijma, K., Lundberg, U., Melin, B., & Wijma, B. (2001). Catecholamine and cortisol reaction to childbirth. *International Journal of Behavioral Medicine*, 8, 50-65.
  22. Damron, D. P., Bernstein, I. M., Shapiro, R. E., & Schonberg, A. (2004). Uterine blood flow response to alpha-adrenergic blockade in nulligravid women of reproductive age. *Journal of the Society for Gynecologic Investigation*, 11(6), 388-392.
  23. Giorgetti, A., Bonasoni, M. P., Lacchè, E., Comitini, G., Migliavacca, C., Ferretti, A., ... & Pelotti, S. (2024). Biochemical analysis of catecholamine and cortisol for the evaluation of the fetal distress in third trimester stillbirths. *International Journal of Legal Medicine*, 138(6), 2569-2581.
  24. Toohill, J., Fenwick, J., Gamble, J., Creedy, D. K., Buist, A., & Ryding, E. L. (2014). Psycho-social predictors of childbirth fear in pregnant women: an Australian study. *Open Journal of Obstetrics and Gynecology*, 4(9), 531-543.
  25. Mazúchová, L., Kelčíková, S., Štofániková, L., Kopincová, J., Malinovská, N., & Grendár, M. (2020). Satisfaction of Slovak women with psychosocial aspects of care during childbirth. *Midwifery*, 86, 102711.
  26. Al-Mandeel, H. M., Almufleh, A. S., Al-Damri, A. J. T., Al-Bassam, D. A., Hajr, E. A., Bedaiwi, N. A., & Alshehri, S. M. (2013). Saudi women's acceptance and attitudes towards companion support during labor: Should we implement an antenatal awareness program?. *Annals of Saudi medicine*, 33(1), 28-33.
  27. Hosaini, S., Yazdkhasti, M., Moafi Ghafari, F., Mohamadi, F., Kamran Rad, S. H. R., & Mahmoodi, Z. (2023). The relationships of spiritual health, pregnancy worries and stress and perceived social support with childbirth fear and experience: A path analysis. *Plos one*, 18(12), e0294910.
  28. Wanyenze, E. W., Nalwadda, G. K., Tumwesigye, N. M., & Byamugisha, J. K. (2023). Efficacy of midwife-led role orientation of birth companions on maternal satisfaction and birth outcomes: a randomized control trial in Uganda. *BMC pregnancy and childbirth*, 23(1), 669.
  29. Olza, I., Uvnas-Moberg, K., Ekström-Bergström, A., Leahy-Warren, P., Karlsdottir, S. I., Nieuwenhuijze, M., ... & Buckley, S. (2020). Birth as a neuro-psycho-social event: An integrative model of maternal experiences and their relation to neurohormonal events during childbirth. *Plos one*, 15(7), e0230992.
  30. Schytt, E., Wahlberg, A., Eltayb, A., Tsekhmestruk, N., Small, R., & Lindgren, H. (2022). Community-based bilingual doula support during labour and birth to improve migrant women's intrapartum care experiences and emotional well-being—Findings from a randomised controlled trial in Stockholm, Sweden [NCT03461640]. *PloS one*, 17(11), e0277533.
  31. Kashanian, M., Faghankhani, M., Hadizadeh, H., Salehi, M. M., Roshan, M. Y., Pour, M. E., ... & Sheikhsari, N. (2020). Psychosocial and biological paternal role in pregnancy outcomes. *The Journal of Maternal-Fetal & Neonatal Medicine*, 33(2), 243-252.
  32. Chen, I., Opiyo, N., Tavender, E., Mortazhejri, S., Rader, T., Petkovic, J., ... & Betran, A. P. (2018). Non-clinical interventions for reducing unnecessary caesarean section. *Cochrane Database of Systematic Reviews*, (9).
  33. Green, E. C., Murphy, E. M., & Gryboski, K. (2020). The health belief model. *The Wiley encyclopedia of health psychology*, 211-214.

## Appendices

<b>Demographic Data</b>	<b>Statistics</b>
Age Years, <i>Median (IQR)</i>	24(21-31)
Distance from home to hospital in kilometres <i>Median (IQR)</i>	7(3-15)
Estimated household income per month (UGX), <i>Median (IQR)</i>	100,000(50,000-300,000)
Number of pregnancies including abortions (gravidity), <i>Median (IQR)</i>	2(1-3)
Number of children respondent has given birth to from 28 weeks and above (parity), <i>Median (IQR)</i>	1(0-2)
<b>Marital status</b>	
Single/separated/divorced <i>n (%)</i>	27(16.1)
Married/cohabiting <i>n (%)</i>	141(83.9)
<b>Highest level of education</b>	
No formal education or Primary <i>n (%)</i>	72(42.9)
Secondary <i>n (%)</i>	54(32.1)
Tertiary education <i>n (%)</i>	42(25.0)
<b>Employment status</b>	
Employed <i>n (%)</i>	58(34.5)
Unemployed <i>n (%)</i>	110(65.5)

**Table 1: Description of Respondents' Sociodemographic and Obstetric Characteristics (N = 168)**

Description of variable	Perceived Psychosocial support		Observed Psychosocial support		Testing for independence between Perceived & observed PSS	
	Frequency (n)	Percentage (100%)	Frequency (n)	Percentage (100%)	X <sup>2</sup>	p-value
<b>Overall Psychosocial Support</b>					*	0.458
Adequate (50% and above)	163	97	24	14.3		
Inadequate (less than 50%)	05	3	144	85.7		
<b>Support by the husband</b>					*	0.014
Adequate	149	88.7	32	19.0		
Inadequate	19	11.3	136	81.0		
<b>Support by the family members</b>					*	0.138
Adequate	166	98.8	156	92.9		
Inadequate	2	1.2	12	7.1		
<b>Support by friends</b>					10.462	<0.001
Adequate	117	69.6	21	12.5		
Inadequate	51	30.4	147	87.5		
<b>Support by health providers</b>					0.064	0.471
Adequate	102	60.7	39	23.2		
Inadequate	66	39.3	129	76.8		

\*A Fisher's Exact Test was used given that more than 20% of the expected frequencies were less than 5%.

**Table 2: Measuring the Level of Psychosocial Support (PSS) given to Women in Labour**

Variable	Presence of complication		Unadjusted Analysis		Adjusted Analysis	
	Yes n (%)	No n (%)	cOR (95% CI)	p-value	aOR (95% CI)	p-value
<b>Perceived Psychosocial Support (PPSS)</b>						
Adequate (50% & above)	40(24.5)	123(75.5)	Ref		Ref	
Inadequate (less than 50%)	1(20)	4(80)	0.77(0.08 – 7.08)	0.816	0.92(0.09-9.22)	0.946
<b>Age Years</b>	41(24.4.5)	127(75.6)	0.98(0.93 – 1.05)	0.606	-	-
<b>Distance from home to hospital in km</b>	41(24.4.5)	127(75.6)	1.03(0.99 – 1.06)	<b>0.139</b>	1.05(1.01-1.09)	0.027**
<b>Marital status</b>						
Single/separated/divorced	8 (29.6)	19(70.4)	1.38(0.55 – 3.44)	0.491	-	-
Married/cohabiting	33(23.4)	108(76.6)	Ref			
<b>Highest level of education</b>						
No formal education or Primary	13(18.1)	59(81.9)	Ref		Ref	
Secondary	13(24.1)	41(75.9)	1.44(0.61 – 3.42)	0.410	2.01(0.76-5.29)	0.157*
Tertiary education	15(35.7)	27(64.3)	2.52(1.06 – 6.03)	<b>0.037</b>	3.86(1.4- 10.66)	0.009**
<b>Employment status</b>						
Employed	13(22.4)	45(77.6)	Ref			
Unemployed	28(25.5)	82(74.5)	1.18(0.56 – 2.51)	0.663	-	-
<b>Estimated household income per month (UGX)</b>	41(24.4.5)	127(75.6)	1.0(1.0 – 1.0)	0.972	-	-
<b>Parity</b>	41(24.4.5)	127(75.6)	0.91(0.75 – 1.10)	0.345	-	-
<b>Categorized Gravidity</b>						
Prime Gravidae	21(33.9)	41(66.1)	Ref		Ref	
Intermediary (2-4 births)	15(17.6)	70(82.4)	0.42(0.19 – 0.9)	<b>0.026</b>	0.41(0.19-0.91)	0.028**
Multigravidity (5 & above)	5(23.8)	16(76.2)	0.61(0.19 – 1.89)	0.393	0.63(0.18-2.24)	0.474*

Obstetric History						
No	39(24.2)	122(76.8)	Ref			
Yes	2(28.6)	5(71.4)	1.25(0.23 – 6.71)	0.79	-	-

*cOR = crude Odds Ratio, aOR = adjusted Odds Ratio, Ref = reference category; \*\*p < 0.05 and confounder, and \*p > 0.05 and is a confounder.*

**Table 3: Association between Perceived Psychosocial Support (PPSS) and Maternal Outcomes (Maternal Complications)**

Variable	Fetal outcomes		Unadjusted Analysis		Adjusted Analysis	
	Good Apgar Score n (%)	Poor Apgar Score n (%)	cOR (95% CI)	p-value	aOR (95% CI)	p-value
<b>Perceived Psychosocial Support (PPSS)</b>						
Adequate (50% & above)	154(94.5)	9(5.5)	Ref		Ref	
Inadequate (less than 50%)	3(60)	2(40)	11.41(1.69 - 77.13)	0.013	12.53(1.77- 88.95)	0.11
<b>Age Years</b>	157(93.5)	11(6.5)	0.93(0.83 – 1.05)	0.239	-	-
<b>Distance from home to hospital in km</b>	157(93.5)	11(6.5)	1.05(0.99 – 1.09)	0.046	1.05(1.0- 1.1)	0.046
<b>Marital status</b>						
Single/separated/divorced	25 (92.6)	2(7.4)	1.17(0.24 – 5.76)	0.844	-	-
Married/cohabiting	132(93.6)	9(6.4)	Ref			
<b>Highest level of education</b>						
No formal education or Primary	66(91.7)	6(8.3)	1.82(0.35 – 9.45)	0.477	-	-
Secondary	51(94.4)	3(5.6)	1.18(0.19 – 7.38)	0.862	-	-
Tertiary education	40(95.2)	2(4.8)	Ref			
<b>Employment status</b>						
Employed	53(91.4)	5(8.6)	Ref			
Unemployed	104(94.5)	6(5.5)	0.61(0.18 – 2.09)	0.434	-	-

<b>Estimated household income per month (UGX)</b>	157(93.5)	11(6.5)	1.0(1.0 – 1.0)	0.705	-	
<b>Parity</b>	157(93.5)	11(6.5)	0.93(0.68 – 1.30)	0.687	-	-
<b>Categorized Gravidity</b>						
Prime Gravidae	58(93.5)	4(6.5)	Ref			
Intermediary (2-4 births)	79(92.9)	6(7.1)	1.10(0.29 – 4.08)	0.885	-	-
Multigravidity (5 & above)	20(95.2)	1(4.8)	0.73(0.08 – 6.88)	0.779	-	-
<b>Obstetric History</b>						
No	151(93.8)	10(6.2)	Ref			
Yes	6(85.7)	1(14.3)	2.52(0.28 – 22.98)	0.413		

*cOR = crude Odds Ratio, aOR = adjusted Odds Ratio*

**Table 4: Association between Perceived Psychosocial Support (PPSS) and Fetal Outcomes (Apgar Score)**

**Copyright:** ©2025 Clement Munguiko, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.