Unplanned Operative Delivery is Associated with Decreased Perception of Control over Labor

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OBJECTIVE

There is increasing understanding that a sense of control during labor may mitigate perinatal mental health disorders.[1] However, not much is known regarding the factors that are associated with perceived control over labor. Patients who undergo unplanned cesareans or operative vaginal delivery (uCD/OVD) may experience relinquished control over their birth experience and this has been postulated to mediate the risk of perinatal mental health disorders.[2] However, this potential association remains understudied. The Labour Agentry Scale (LAS) is a validated instrument that assesses patient perception of control during childbirth.[3] We aimed to examine whether patients who underwent uCD/OVD had lower LAS scores compared to patients who underwent spontaneous vaginal delivery (SVD).

STUDY DESIGN

This was a secondary analysis of a cross-sectional survey study of patients admitted to labor and delivery at a tertiary care center from June–July 2021. Eligible participants were nulliparous, English-speaking, and had singleton pregnancies at gestational age ≥37 weeks and were approached on the postpartum unit. After obtaining consent, participants completed the LAS.[3] Trained medical personnel then performed a detailed chart review.

The primary outcome for this analysis was the LAS score. Participants who underwent uCD/OVD were compared to those who underwent SVD using Fisher's exact and Wilcoxon Rank-sum tests. Multivariable linear regression was performed to assess for confounders identified from the bivariate analysis. Prior to study initiation, approval from our institutional review board was obtained (#1691795).

RESULTS

Fifty of 149 participants (33.6%) underwent uCD/OVD. Maternal body mass index (BMI) was higher in the group that underwent uCD/OVD as compared to SVD (median 33.2 vs 30.1, p<0.03). Additionally, length of labor and gestational age (GA) were both higher among those who underwent uCD/OVD as compared to SVD (median 22 hours vs 14 hours, p<0.02; median 40.2 weeks versus 39.6 weeks, p<0.02).

LAS scores were significantly lower for participants who underwent uCD/OVD than those who underwent SVD (median 146 (IQR 131,161)) versus (median 164 (IQR 146, 181), p<0.01). These findings remained significant after controlling for BMI, length of labor, and GA (Scores were 16.09 (± 4.64) points lower among those who underwent uCD/OVD compared to SVD, p<0.01).

CONCLUSION

In this study, those who underwent uCD/OVD had significantly lower LAS scores than those who underwent SVD. These findings are consistent with a prior study by Floris et al,[4] though their cohort was smaller – with 78 participants – and their analyses did not control for factors such as length of labor that may be associated with labor experience.[4]

Perceived labor control has been demonstrated to be a key mediator of development of perinatal mood and anxiety disorders (PMAD),[5] impacting up to 15–20% of birthing people.[6] If the perception that losing control over childbirth mediates development of PMAD is correct, interventions to increase the experience of control must be examined. These could incorporate psychotherapeutic approaches such as cognitive behavioral therapy or education-based interventions designed to increase patient engagement in decision making during labor. Regardless of the exact intervention, it is crucial to further explore whether improving patient perceptions of control during childbirth may decrease rates of perinatal mental health disorders.

(See **Table 1**).

References

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Table 1. Unplanned Cesarean Delivery and Operative Vaginal Delivery to Spontaneous Delivery

	Cesarean Delivery/ Operative Vaginal Delivery (n=50)	Spontaneous vaginal delivery (n=98)	p-value
Demographics			
Maternal age, median (IQR)	29.5 (26,33)	28.5 (24,31)	0.08
Maternal BMI, median (IQR)	33.2 (29.1,40.9)	30.1 (27.5,35.7)	**0.03**
Maternal race/ethnicity Black Latina Indigenous Asian/Pacific Islander Caucasian	 2 (4.0) 12 (24.0) 1 (2.0) 2 (4.0) 33 (66.0)	 6 (6.1) 14 (14.3) 4 (4.1) 0 74 (75.5)	0.12
Primary insurance Public Private Self-pay/none	 13 (26.0) 37 (74.0) 0	 32 (32.7) 65 (66.3) 1 (1)	0.64
Highest level of education 12th grade or less Greater than 12th grade	 19 (38.0) 31 (62.0)	 29 (29.6) 69 (70.4)	0.35
Medical comorbidity*	20 (40.0)	28 (28.6)	0.19
Depression and/or anxiety	29 (58.0)	44 (44.9)	0.17
Delivery characteristics			
Admitted for: Labor IOL (sched) IOL (from triage)	 23 (46.0) 21 (42.0) 6 (12.0)	 59 (60.2) 25 (25.5) 14 (14.3)	0.14
Length of labor (hours), Median (IQR)	22 (15,34)	14 (10,22)	**<0.01**
Gestational age at delivery, Median (IQR)	40.2 (39.3,41)	39.6 (38.7,40.6)	**0.02**
NICU admission	7 (14.6)	6 (6.1)	0.12
Neonatal therapy**	6 (12.0)	14 (14.3)	0.80
Labour Agentry Scale Scores			
Total LAS Median (IQR)	 146 (131,161)	 164 (146,181)	**<0.01**

Data are N(%) unless otherwise stated. Significance at p<0.05.

Fisher's exact and Wilcoxon Ranksum tests used for analysis.

IQR = interquartile range, BMI = body mass index, IOL = induction of labor, NICU = neonatal intensive care unit

*Maternal medical comorbidities include chronic hypertension, gestational hypertension, preeclampsia, pregestational diabetes and gestational diabetes, thyroid disease and SARS-CoV-2 infection.

**Neonatal therapy includes the need for supplemental O2, phototherapy for jaundice, neonatal antibiotics

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