



**UNLOGIC BIRTH EDUCATION, PERCEIVED HUSBAND ASSERTIVENESS,
AND MODE OF DELIVERY:
A RETROSPECTIVE OBSERVATIONAL STUDY**

***Nur Alima Amelia¹, Ummu Khuzaimah²**

^{1,2}International Open University, Indonesia

*Email: nuralima.amelia@student.iou.edu.gm

Abstract

The increasing rate of caesarean section has raised concerns about childbirth interventions performed without clear medical indications. Antenatal education may support childbirth preparation and informed decision-making, although the mechanisms linking such education to mode of delivery remain uncertain. This study examined the association between participation in the Unlogic Birth (UB) educational program and mode of delivery and assessed whether perceived husband assertiveness mediated this association. A retrospective observational study was conducted among 72 postpartum women who had received antenatal care at Klinik Utama Cikal Mulia, Jakarta, Indonesia. Participants were selected using purposive sampling and classified according to their participation in UB education. Perceived husband assertiveness was measured using a 12-item questionnaire completed by wives, while mode of delivery was verified through clinical records. Direct and indirect associations among the variables were examined using an exploratory structural-path analysis. Of the 72 participants, 58 had participated in UB education and 14 had not. All UB participants experienced vaginal birth, whereas 13 of the 14 non-participants underwent caesarean section. UB participation was significantly associated with mode of delivery ($T = 27.27$, $p < 0.05$). However, UB participation was not significantly associated with perceived husband assertiveness ($T = -0.38$, $p > 0.05$), and perceived husband assertiveness was not significantly associated with mode of delivery ($T = 0.96$, $p > 0.05$). The proposed mediating pathway was therefore not supported. The findings should be interpreted cautiously because of the retrospective design, purposive sampling, unequal group sizes, absence of detailed baseline comparisons, and limited variability in perceived husband assertiveness.

Keywords: *Antenatal Education; Caesarean Section; Mode of Delivery; Perceived Husband Assertiveness; Vaginal Birth*

A. Introduction

The increasing use of caesarean section (CS) has become a major concern in maternal health worldwide. Although CS is a life-saving intervention when medically indicated, its use has increased beyond levels considered necessary in many countries (Boerma et al., 2018; World Health Organization, 2018b). In Indonesia, the 2023 Indonesian Health Survey reported that 25.9% of births were delivered by CS. The proportion was substantially higher in urban areas such as DKI Jakarta, where it reached

40.8% (Ministry of Health of the Republic of Indonesia, 2023). These figures exceed the level at which further reductions in maternal and neonatal mortality are generally observed, suggesting that some caesarean deliveries may occur when vaginal birth remains a clinically appropriate option (Boerma et al., 2018; WHO, 2018).

Caesarean delivery remains essential in many obstetric situations. However, when performed without a clear medical indication, surgical birth may expose women and newborns to avoidable risks and increase healthcare expenditure. Previous studies have associated caesarean delivery with postoperative complications, longer recovery periods, and complications in subsequent pregnancies compared with uncomplicated vaginal birth (Keag et al., 2018; Sandall et al., 2018). Accordingly, international guidelines recommend vaginal birth when no contraindications are present and maternal and fetal conditions permit safe labour and delivery (World Health Organization, 2018a).

The mode of delivery is shaped by the interaction of clinical, psychological, social, and cultural factors. Fear of childbirth, previous birth experiences, perceptions of safety, and beliefs about pain and risk may influence maternal preferences. At the same time, recommendations from healthcare providers, institutional practices, and family involvement may also affect childbirth-related decisions (Downe et al., 2018; Keedle et al., 2022). Decisions regarding caesarean delivery therefore cannot be understood solely as responses to medical indications, particularly in settings where interpersonal and contextual factors influence communication and decision-making.

Partners may contribute to women's preparation for childbirth by providing emotional support, seeking information, and participating in discussions with healthcare providers. Previous studies have associated partner involvement with improved maternal experiences, greater confidence, and stronger participation in healthcare decision-making (Alio et al., 2013; Alizadeh-Dibazari et al., 2023). In this study, husband involvement is considered in relation to the Islamic concept of *qawwam*, which places responsibility on husbands to provide leadership, protection, and support for family welfare. In the context of childbirth, this responsibility may be expressed through communication, information-seeking, and support for decisions concerning maternal care rather than through unilateral control over healthcare choices.

One characteristic that may influence the quality of partner involvement is assertiveness. Assertiveness refers to the ability to express opinions, communicate needs, ask questions, and participate actively in discussions while respecting others (Edmonds, 2014; Rathus, 1973). In childbirth-related decision-making, an assertive husband may be more likely to seek clarification from healthcare providers, discuss available options, communicate childbirth preferences, and support his wife during the decision-making process. These behaviours may facilitate communication between couples and healthcare professionals, although their relationship with the eventual mode of delivery requires empirical examination.

Antenatal education has been proposed as one approach to strengthening parental knowledge, confidence, and preparedness for childbirth. Educational interventions involving mothers and their partners have been associated with improvements in

childbirth knowledge, self-efficacy, and preparation for labour and delivery (Brixval et al., 2015; Shorey et al., 2022). One such intervention is the Unlogic Birth (UB) program, a structured antenatal education program developed by Nur Alima Amelia and the multidisciplinary team at Klinik Cikal Mulia, Indonesia. The program consists of eight face-to-face educational sessions, each lasting approximately 60–90 minutes. Its standardized curriculum combines information on pregnancy and childbirth, psychological preparation, husband involvement, and Islamic values related to faith, responsibility, and trust in God. Both husbands and wives participate in the program to develop shared understanding and collaborative preparation for childbirth.

Despite the growing literature on antenatal education, the pathways through which such programs may be associated with childbirth outcomes remain insufficiently established. Previous studies have primarily examined maternal knowledge, attitudes, preparedness, or childbirth preferences, while less attention has been given to partner-related characteristics that may operate within the decision-making process. In particular, it remains uncertain whether participation in couple-based antenatal education is associated with greater husband assertiveness and whether husband assertiveness is, in turn, associated with mode of delivery.

This study therefore examines the association between participation in the Unlogic Birth program and mode of delivery among postpartum women attending Klinik Utama Cikal Mulia. It also investigates whether husband assertiveness, as perceived by wives, mediates this association. Rather than assuming that husband assertiveness constitutes the mechanism linking antenatal education to delivery outcomes, the study empirically tests whether the proposed mediating pathway is supported within the study population.

B. Methods

1) Study Design

This study employed a retrospective observational design to examine the associations among participation in the Unlogic Birth (UB) educational program, perceived husband assertiveness, and mode of delivery. The study also tested whether perceived husband assertiveness mediated the association between participation in UB education and delivery mode. Because participants were not randomly assigned to the educational program and were recruited after their delivery outcomes had occurred, the study was designed to identify statistical associations rather than causal effects. Potential mediation was therefore examined as an exploratory pathway within the observed data.

2) Study Setting and Participants

The study was conducted at Klinik Utama Cikal Mulia, Jakarta, Indonesia. Participants were postpartum women who had received antenatal care at the clinic and had completed their childbirth experience at the time of data collection. Eligible participants were women with clinical conditions considered to be associated with a potential risk of caesarean delivery, including previous caesarean section, premature

rupture of membranes, or post-term pregnancy. Additional eligibility criteria included active husband involvement during pregnancy and provision of informed consent. Women with absolute medical indications for caesarean section were excluded.

Participants were selected using purposive sampling. A total of 72 postpartum women who met the eligibility criteria were included. Because recruitment occurred after childbirth, delivery outcomes were already known at the time of enrolment. Participants were subsequently classified according to whether they had participated in the UB educational program during pregnancy.

3) Unlogic Birth Educational Program

The Unlogic Birth program was developed by Nur Alima Amelia and the Klinik Cikal Mulia team as a structured antenatal education program intended to support informed decision-making and preparation for pregnancy and childbirth. The full program consisted of eight face-to-face educational sessions, each generally lasting 60–90 minutes. Educational materials included presentation media, the Unlogic Birth handbook, and facilitated discussions with trained midwives. For the purposes of this study, participants were classified as having received UB education if they had completed at least three core topics included in the program curriculum. Sessions could be attended at different stages of pregnancy according to individual needs and the timing of enrolment.

The curriculum integrated physiological, psychological, and spiritual dimensions of childbirth preparation. The topics included maternal physiology during pregnancy and labour, communication with healthcare providers, informed decision-making regarding childbirth, emotional preparedness, spiritual coping strategies, and the husband's role as *qawwam* in supporting and protecting the family during pregnancy and childbirth. Husbands participated in the educational activities alongside their wives.

4) Measurement of Perceived Husband Assertiveness

Perceived husband assertiveness was examined as the proposed mediating variable. It was measured using a 12-item questionnaire developed by the researchers. The instrument was informed by an assertiveness framework and was adapted to the Islamic concept of *qawwam*, which emphasizes responsible leadership, family protection, and participation in family decision-making. The instrument development process included expert review and pilot testing. Two rounds of expert evaluation were conducted to assess content relevance, conceptual clarity, and linguistic appropriateness. The items were revised following expert feedback, particularly in relation to wording and item formulation. Pilot testing was subsequently conducted to assess item comprehensibility and instrument performance.

The questionnaire assessed four dimensions: communication with healthcare providers, participation in treatment decisions, expression of childbirth preferences, and emotional regulation during stressful situations. Responses were recorded on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Example items

included “My husband actively asks healthcare providers about childbirth options” and “My husband clearly expresses his preferences regarding the mode of delivery.”

The questionnaire was completed by wives and therefore measured their perceptions of their husbands’ observable assertive behaviours during pregnancy and childbirth-related decision-making. The resulting scores should consequently be interpreted as perceived husband assertiveness rather than as direct self-reports from husbands. Factor loadings ranged from 0.62 to 0.84. Internal consistency was indicated by a Cronbach’s alpha coefficient of 0.88 and composite reliability of 0.91. Total scores ranged from 12 to 60, with higher scores indicating greater perceived husband assertiveness.

5) Outcome Variable

The outcome variable was mode of delivery, classified as a binary variable. Vaginal birth was coded as 1, whereas caesarean section was coded as 0. Delivery outcomes were verified using clinical records. Vaginal birth was defined as childbirth occurring through the birth canal without major surgical intervention.

6) Statistical Analysis

Descriptive statistics were used to summarize participant characteristics, participation in the UB program, perceived husband assertiveness, and mode of delivery. Frequencies and percentages were reported for categorical variables. An exploratory structural-path analysis was used to examine the direct and indirect associations among UB participation, perceived husband assertiveness, and mode of delivery. The analysis included a direct pathway from UB participation to mode of delivery, a pathway from UB participation to perceived husband assertiveness, and a pathway from perceived husband assertiveness to mode of delivery. The indirect pathway was examined to assess whether perceived husband assertiveness statistically mediated the association between UB participation and delivery mode.

The significance of the reported pathways was evaluated using T-values, with values greater than 1.96 interpreted as statistically significant at the 5% level. Given the retrospective observational design, purposive sampling, self-selection into the UB program, non-random group allocation, small sample size, and unequal group distribution, the analysis was treated as exploratory and interpreted as evidence of association rather than causation.

C. Results and Discussion

1. Results

1) Participant Characteristics

A total of 72 postpartum women were included in the study. Most participants were aged 20–35 years (69; 95.8%), while three participants (4.2%) were older than 35 years. Participants’ ages ranged from 24 to 37 years. Most participants held a bachelor’s degree (45; 62.5%). The remaining participants had completed junior high school (2;

2.8%), senior high school (10; 13.9%), diploma-level education (6; 8.3%), an applied bachelor's degree (1; 1.4%), or a master's degree (8; 11.1%).

Regarding parity, 34 participants (47.2%) were primiparous, 36 (50.0%) were multiparous, and two (2.8%) were grand multiparous. Of the total sample, 58 participants (80.6%) had participated in UB education, whereas 14 (19.4%) had not.

Table 1.
Participant Characteristics (N = 72)

Characteristic	n	%
Age		
20–35 years	69	95.8
>35 years	3	4.2
Education		
Junior high school	2	2.8
Senior high school	10	13.9
Diploma (D3)	6	8.3
Applied bachelor's degree (D4)	1	1.4
Bachelor's degree (S1)	45	62.5
Master's degree (S2)	8	11.1
Parity		
Primiparous	34	47.2
Multiparous	36	50.0
Grand multiparous	2	2.8
UB participation		
Participated in UB education	58	80.6
Did not participate in UB education	14	19.4

Source: Primary data, 2025

Participants classified as having received UB education had completed at least three core topics covering pregnancy, childbirth, breastfeeding, spiritual preparation, and husband involvement. Clinical conditions reported among the participants included previous caesarean section, premature rupture of membranes, nuchal cord, infertility history, prolonged labour, history of narrow pelvis, malpresentation, high myopia, post-term pregnancy, suspected macrosomia, and anaemia.

2) Distribution of Perceived Husband Assertiveness

Based on the wives' responses, 59 husbands (81.9%) were categorized as having high assertiveness, while 13 (18.1%) were categorized as having moderate assertiveness. No husbands were classified as having low assertiveness. The distribution was concentrated in the moderate-to-high range, indicating limited variability in perceived husband assertiveness across the sample.

Table 2.
Husband Assertiveness as Perceived by Wives

Assertiveness category	n	%
Low	0	0.0
Moderate	13	18.1
High	59	81.9
Total	72	100.0

*Source: Primary data, 2025***3) Distribution of Mode of Delivery**

Of the 72 participants, 59 (81.9%) experienced vaginal birth, while 13 (18.1%) underwent caesarean section.

Table 3.
Mode of Delivery

Mode of delivery	n	%
Vaginal birth	59	81.9
Caesarean section	13	18.1
Total	72	100.0

*Source: Primary data, 2025***4) UB Participation and Mode of Delivery**

A marked difference in mode of delivery was observed between UB participants and non-participants. All 58 women who participated in UB education experienced vaginal birth. Among the 14 women who did not participate, one (7.1%) experienced vaginal birth and 13 (92.9%) underwent caesarean section.

Table 4.
Cross-Tabulation of UB Participation and Mode of Delivery

Mode of delivery	UB participants (n = 58)	Non-UB participants (n = 14)
Vaginal birth	58 (100.0%)	1 (7.1%)
Caesarean section	0 (0.0%)	13 (92.9%)

This distribution indicates a strong unadjusted association between UB participation and mode of delivery within the study sample. However, because participation was not randomly assigned and baseline comparability data were unavailable, the observed distribution does not establish that UB education caused the difference in delivery outcomes.

5) Perceived Husband Assertiveness and Mode of Delivery

The vaginal birth rate among women whose husbands were categorized as highly assertive was 81.4%. Among women whose husbands were categorized as moderately assertive, the vaginal birth rate was 84.6%. The similarity between these percentages indicates that mode of delivery differed only minimally across the two observed assertiveness categories.

6) Exploratory Pathway Analysis

The exploratory pathway analysis examined the direct associations among UB participation, perceived husband assertiveness, and mode of delivery, as well as the proposed indirect pathway through perceived husband assertiveness. The reported pathways were evaluated using T-values, with values greater than 1.96 interpreted as statistically significant at the 5% level.

UB Participation and Mode of Delivery

The pathway from UB participation to mode of delivery was statistically significant ($T = 27.27$, $p < 0.05$). Within the study sample, UB participation was strongly associated with vaginal birth. H1 therefore received statistical support at the level of association. This result does not establish a causal effect because participants were not randomly assigned, recruitment occurred after delivery, and baseline differences between UB participants and non-participants were not available for assessment.

UB Participation and Perceived Husband Assertiveness

The pathway from UB participation to perceived husband assertiveness was not statistically significant ($T = -0.38$, $p > 0.05$). H2 was therefore not supported.

Perceived Husband Assertiveness and Mode of Delivery

The pathway from perceived husband assertiveness to mode of delivery was not statistically significant ($T = 0.96$, $p > 0.05$). H3 was therefore not supported.

Mediating Role of Perceived Husband Assertiveness

The reported indirect pathway from UB participation to mode of delivery through perceived husband assertiveness was not statistically significant. The analysis therefore did not provide statistical support for the proposed mediating role of perceived husband assertiveness. H4 was not supported.

Table 5.
Summary of Hypothesis Testing

Hypothesis	Relationship	Result
H1	UB participation → Mode of delivery	Supported (association only)
H2	UB participation → Perceived husband assertiveness	Not supported
H3	Perceived husband assertiveness → Mode of delivery	Not supported
H4	UB participation → Perceived husband assertiveness → Mode of delivery	Not supported

Source: Primary data, 2025

2. Discussion

This study examined the associations among participation in Unlogic Birth (UB) education, perceived husband assertiveness, and mode of delivery among postpartum women attending Klinik Utama Cikal Mulia. The findings showed a strong association between UB participation and vaginal birth. Perceived husband assertiveness, however,

was not significantly associated with mode of delivery and was not statistically supported as a mediator of the association between UB participation and delivery outcomes.

All women who participated in UB education experienced vaginal birth, whereas most women who did not participate underwent caesarean section. This pattern is broadly consistent with previous studies associating antenatal education with greater childbirth preparedness, stronger maternal participation in decision-making, and more favourable childbirth-related outcomes (Downer et al., 2020; Leutenegger et al., 2022; Lopes et al., 2024). Structured antenatal education may assist women and their partners in developing childbirth knowledge, health literacy, confidence, and preparedness for labour and delivery (Downer et al., 2020; Lopes et al., 2024). Systematic reviews have similarly reported associations between antenatal educational interventions and improved labour-related outcomes, although the magnitude of these associations has generally been modest and has varied across populations, intervention formats, and research designs (Brixval et al., 2015; Leutenegger et al., 2022). Educational interventions intended to strengthen childbirth self-efficacy have also been associated with more favourable labour experiences and outcomes among pregnant women (El-Kader & Ibrahim, 2024).

The association observed in the present study was considerably larger than that generally reported in previous research. This difference requires cautious interpretation. Participation in UB education was not randomly assigned, and women chose whether to attend the program during routine antenatal care. Women classified as UB participants may therefore have differed from non-participants before entering the program. Such differences may have involved motivation to pursue vaginal birth, confidence in physiological childbirth, personal beliefs regarding childbirth, willingness to participate in educational activities, or readiness to engage in childbirth-related decision-making.

Detailed baseline comparisons between UB participants and non-participants were not available. Consequently, potential differences in maternal characteristics, obstetric risk profiles, clinical indications, provider recommendations, and other factors related to mode of delivery could not be formally assessed. Childbirth outcomes are influenced by interacting maternal, clinical, professional, and organizational factors rather than by a single educational exposure (Caughey et al., 2014; Sandall et al., 2018). The findings therefore demonstrate a strong association between UB participation and vaginal birth within this clinical setting, but they do not establish that participation in UB education caused the observed difference in delivery outcomes.

The extreme separation of observed delivery outcomes between the two groups should also be considered when interpreting the pathway estimates. The absence of caesarean delivery among UB participants and the high proportion of caesarean delivery among non-participants may have contributed to the magnitude of the reported association. The estimates should therefore not be interpreted as evidence of a stable or causal effect of the educational program.

In contrast to the association between UB participation and mode of delivery, perceived husband assertiveness was not significantly associated with delivery outcomes. Vaginal birth rates were similar among women whose husbands were categorized as

highly assertive and those whose husbands were categorized as moderately assertive. Previous research has associated partner involvement with maternal healthcare utilization, childbirth experiences, and participation in healthcare decision-making (Alio et al., 2013; Yargawa & Leonardi-Bee, 2015). Nevertheless, the present findings did not indicate that perceived husband assertiveness distinguished women who experienced vaginal birth from those who underwent caesarean section.

One possible explanation is the limited variability in perceived husband assertiveness. More than 80% of husbands were categorized as highly assertive, while the remaining husbands were categorized as moderately assertive. No husbands were classified as having low assertiveness. This concentration of scores in the upper categories may have reduced the ability of the analysis to identify a relationship between assertiveness and mode of delivery and may indicate a ceiling effect in the measurement.

Husband assertiveness was also assessed through wives' perceptions rather than through direct reports from husbands or observations of their behaviour during clinical interactions. The instrument therefore captured how wives evaluated their husbands' communication with healthcare providers, participation in decisions, expression of childbirth preferences, and emotional regulation. These perceptions may not fully correspond to husbands' actual behaviour during antenatal consultations or childbirth-related decision-making.

Mode of delivery may also be influenced more directly by clinical indications, provider recommendations, institutional practices, and assessments of maternal and fetal risk than by husband assertiveness alone. Obstetric decision-making involves interactions among maternal conditions, fetal conditions, professional judgment, perceived risk, and communication among women, partners, and healthcare providers (Edmonds, 2014). In situations where clinical considerations are dominant, the independent contribution of husband assertiveness to the final mode of delivery may be limited.

The absence of a statistically significant relationship between perceived husband assertiveness and mode of delivery does not mean that husbands are unimportant in childbirth preparation. Rather, the findings indicate that the particular construct measured in this study was not associated with the final mode of delivery. Partner involvement may operate through other forms of emotional, informational, or practical support that were not captured by the questionnaire. It may also influence maternal confidence and childbirth experience without directly determining whether delivery occurs vaginally or by caesarean section.

The analysis also did not provide statistical support for perceived husband assertiveness as a mediator of the association between UB participation and mode of delivery. UB participation was not significantly associated with perceived husband assertiveness, and perceived husband assertiveness was not significantly associated with mode of delivery. The proposed indirect pathway was therefore not supported within the study sample. This result indicates that perceived husband assertiveness, as operationalized in the present study, did not explain the observed association between UB participation and vaginal birth.

The limited variation in assertiveness scores may partially account for the absence of mediation. When most husbands are already perceived as moderately or highly assertive, participation in an educational program may have little detectable relationship with the measured scores. In addition, assertiveness may not be the primary pathway through which antenatal education is associated with childbirth outcomes.

Previous literature has proposed several alternative mechanisms through which antenatal education may relate to childbirth outcomes, including maternal confidence, childbirth self-efficacy, reduced fear and anxiety, improved health literacy, psychological preparedness, and greater participation in decision-making (Ajzen, 1991; Bandura, 1986; Camoni et al., 2026; Downer et al., 2020; El-Kader & Ibrahim, 2024). These factors may be more directly connected to how women understand childbirth, communicate their preferences, and prepare for labour.

However, these variables were not directly measured in the present study. They cannot therefore be treated as explanations established by the current findings. They represent potential mechanisms that should be examined in future research. Studies that directly measure maternal self-efficacy, fear of childbirth, health literacy, psychological preparedness, decision-making preferences, and provider support may clarify how participation in antenatal education is associated with mode of delivery.

The findings have implications for both research and practice. From a research perspective, the results indicate that future studies should examine the relationship between antenatal education and childbirth outcomes using prospective designs, larger and more diverse samples, and more balanced comparison groups. Comprehensive baseline assessment is particularly important because maternal characteristics, obstetric risk, previous birth history, clinical indications, provider recommendations, and childbirth preferences may influence both participation in educational programs and mode of delivery. Direct assessment of husbands, alongside wives' evaluations, may also provide a more complete account of partner communication and involvement.

The findings suggest that the observed relationship between UB participation and mode of delivery cannot be adequately explained by perceived husband assertiveness alone. The association should be interpreted within the specific clinical setting and in relation to the methodological constraints of the study. Further investigation is needed before the observed pattern can be generalized or used to support causal claims regarding antenatal education and delivery outcomes.

D. Conclusion

In this retrospective observational sample, participation in Unlogic Birth (UB) education was strongly associated with vaginal birth among postpartum women attending Klinik Utama Cikal Mulia. All women who participated in UB education experienced vaginal birth, whereas most non-participants underwent caesarean section. However, this pattern should be interpreted as an association within the study sample rather than evidence of a causal effect. Perceived husband assertiveness was not significantly associated with UB participation or mode of delivery, and the analysis did not provide

statistical support for its proposed mediating role. These findings do not indicate that husbands are unimportant in childbirth preparation; rather, perceived husband assertiveness, as operationalized and reported by wives in this study, did not explain the observed association between UB participation and mode of delivery.

The findings should be interpreted cautiously because the study used a retrospective observational design, purposive sampling, a relatively small sample from a single clinical setting, unequal group sizes, and no detailed baseline comparison between UB participants and non-participants. The extreme separation of delivery outcomes and the limited variability in perceived husband assertiveness may also have affected the statistical estimates. Future research should use prospective designs, larger and more balanced samples, comprehensive baseline assessments, and direct measurement of both maternal and partner-related factors. Structured antenatal education may support childbirth preparation, communication, and informed decision-making, although these potential benefits were not directly measured in the present study. The findings do not establish UB education as a proven intervention for preventing caesarean delivery; decisions regarding mode of delivery must remain grounded in individualized maternal and fetal assessment and appropriate obstetric indications.

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