# An Evaluation of Patient Satisfaction with Elective Caesarean Section where Tocophobia was the Primary Indication

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## Abstract

Background: Tocophobia, a severe fear of pregnancy or childbirth, has been reported in approximately 5.3% of pregnant women in an Irish sample[1]. Often, it manifests as an intense fear of harm to the mother or the baby during labour. Caesarean section (CS), particularly when unplanned, is often associated with lower birth satisfaction[2], but it is unclear whether this applies to women choosing elective CS due to tocophobia. This research sought to assess maternal satisfaction following elective CS where tocophobia was the primary indication.

Methods: This cross-sectional study included primiparous women who underwent elective CS at Cork University Maternity Hospital (2021-2023) for tocophobia. Eligible participants were identified from theatre logbooks. After applying inclusion and exclusion criteria, those who consented received the questionnaire by email. The Birth Satisfaction Scale-Revised (BSS-R), a validated questionnaire assessing birth satisfaction across stress, maternal attributes, and quality of care, was used. Quantitative data were analysed descriptively. Qualitative free-text comments were analysed thematically.

Results: Of 3,478 nulliparous CS during the study period, 48 were performed for tocophobia. Fifteen women completed the survey. The median BSS-R score was 31 out of 40 (range: 26-39), suggesting high satisfaction overall. Thematic analysis highlighted themes of communication, emotional response, and quality of support.

Conclusion: Women undergoing elective CS for tocophobia reported high birth satisfaction, supporting evidence that preference aligned birth is associated with improved satisfaction. These findings support an individualised approach to birthing options. Larger studies are needed to validate these results and inform patient care.

## Introduction

Tocophobia is a clinical phenomenon characterised by profound fear surrounding pregnancy and childbirth[3]. Tocophobia is not classified as a DSM-5 diagnosis, and definitions vary across clinical and research settings; fear of childbirth is commonly quantified in research settings using the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ)[4].

However, in clinical practice, tocophobia is commonly documented as an indication for CS based on clinician assessment rather than formal questionnaire-based classification. It may lead women to request alternative delivery methods such as CS[5]. Primary tocophobia arises before any pregnancy, while secondary tocophobia follows a previous experience[6]. Fear of harm to mother or baby during delivery and loss of control during labour are commonly cited by affected women[7].

A recent meta-analysis estimated a global pooled prevalence of clinically significant fear of childbirth (FOC) of 14%[8], although this should be interpreted with caution because of variable definitions and significant heterogeneity. A large study in Ireland found that 5.3% of pregnant women in a convenience sample had a "severe" FOC[1]. High FOC is strongly associated with preference for elective CS[9]. In one survey, nearly half of pregnant women with severe fear reported preferring a planned CS, and "fear of pain" and "safer mode for baby" were the most common reasons[10]. Research has also found that women who fear childbirth are less likely to report satisfaction with their birth[5]. However, achieving the planned mode of birth appears to mitigate this effect[11]. Unresolved FOC can have negative psychological impacts, with women denied their desired delivery method reporting higher rates of birth-related trauma than those whose delivery aligned with their preference[5].

Gaps remain in literature regarding how tocophobia translates into birth satisfaction outcomes. Existing research demonstrates that intense FOC is associated with reduced satisfaction unless appropriately addressed. However, much of this evidence is indirect, and does not isolate women undergoing elective CS specifically for tocophobia. Few studies focus on primary tocophobia. Furthermore, studies often rely on broad measures of birth experience rather than validated birth satisfaction questionnaires. Given the implications of poor birth satisfaction, as well as the increasing incidence of tocophobia, there is a need for focussed research examining birth satisfaction outcomes among women who underwent elective CS for primary tocophobia.

The primary aim of this study was to evaluate maternal satisfaction with childbirth after elective CS for tocophobia. Its secondary objectives were to determine the prevalence of elective CS among primiparous women in CUMH where the primary indication was tocophobia, to describe the demographics of this cohort, and to assess associations between their demographic factors and satisfaction.

## Materials and Methods

Study design: This was a retrospective, cross-sectional, mixed-methods study. Data were collected through chart review and online questionnaire.

Population characteristics: The population studied were primiparous women who underwent an elective CS in Cork University Maternity Hospital (CUMH) from January 2021 to December 2023 with a primary indication of tocophobia. Eligible participants were identified by reviewing surgical logbooks, where the diagnosis of tocophobia was recorded as the primary indication for CS. Tocophobia was therefore defined pragmatically as a clinician-documented primary indication for elective CS. No independent diagnostic interview or questionnaire was undertaken to assess tocophobia. Exclusion criteria were age under 18, inability to read English, multiple pregnancy, history of foetal death, prisoners, intellectual disability limiting informed consent, and a lack of consent. A single-stage convenience sampling method was used. All eligible women were included.

Recruitment and consent: Recruitment occurred between 17th December 2024 and 4th March 2025. Eligible women were contacted via post with an invitation letter and consent-to_contact form. Those who returned the signed consent-to-contact forms were emailed the participant information leaflet, and a link to the survey containing a consent form, a data protection notice, and questionnaire. The survey was administered using Qualtrics. Participants could withdraw at any time.

Study measures: Potential participants had their MRN and primary indication for CS collected from the surgical logbooks, along with their contact details. Chart review was performed using the Maternal and Newborn Clinical Management System (MN-CMS) . Electronic health records were reviewed for:

·Patient age at time of delivery
·Height
·Booking weight
·Occupation
·Ethnicity
·Smoking status
·Co-morbidities

These demographic variables were selected a priori as potential confounders, based on previous literature which demonstrated associations with either tocophobia prevalence or birth satisfaction[1,12]. Height and weight were used to calculate BMI, which was categorised into underweight (<18.5 kg/$m^2$), normal (18.5 - 24.9 kg/$m^2$), overweight (25.0 – 29.9 kg/$m^2$), or obese (>30 kg/$m^2$). Occupations were classified according to one of four skill levels outlined in International Standard Classification of Occupations (ISCO-08) skill level guide: 1, 2, 3 and 4 – each corresponding to an increasing skill level[13].

Birth satisfaction was measured using the Birth Satisfaction Scale-Revised (BSS-R). It is a 10-item questionnaire measuring birth satisfaction from 0-40, with higher scores indicating greater satisfaction. It includes three subscales, which measure stress experienced during labour, women's personal attributes, and quality of care provision. Optional comments followed each item. The BSS-R has been recommended by the International Consortium for Health Outcome Measurement (ICHOM) as the birth satisfaction measure of choice for global use[14]. It is validated for use in the UK, but is not yet validated for use in the Republic of Ireland. Individual names were cross-referenced with consent records, ensuring each participant could only submit one eligible response.

Study ethics: The study was conducted in accordance with the principles of the Declaration of Helsinki. Ethical approval from the Clinical Research Ethics Committee of the Cork Teaching Hospitals (CREC) was obtained for this research (reference number: ECM 02/2026/PUB), as well as institutional approval from the Local Institutional Governance Group at CUMH. The BSS-R was used with permission from the authors. All participants provided written informed consent, and were provided with a data protection declaration. All identifiable data was pseudo-anonymised, so that no individual was identifiable. Participants were made aware that if topics or questions caused distress, they would be given support from the research team.

Data analysis: The responses were analysed using IBM SPSS Statistics (version 29.0.2.0). Birth satisfaction outcomes were summarised descriptively using medians and ranges for total and subscale BSS-R scores.

Participant demographics and clinical characteristics were described using appropriate descriptive statistics.
Exploratory analyses were undertaken to assess associations between participant characteristics and BSS-R scores where sufficient variability existed within the data.
Several maternal characteristics have been identified as potential confounders, including maternal age, body mass index, occupation, ethnicity, smoking status and pre-existing medical conditions. These variables were recorded from charts and examined descriptively in the study. Due to limited sample size and small number of outcome observations, multivariate modelling was not performed as such analyses would violate recommended everts-per-variable thresholds and risk generating misleading estimates. Instead, unadjusted exploratory analyses examined potential associations between demographics and BSS-R outcomes to identify patterns rather than to establish causal relationships.

Given ordinal BSS-R data and its non-normal distribution, non-parametric statistical tests were used throughout. Analyses were conducted for both the overall BSS-R score and individual subscale scores. The following statistical tests were applied:
·Spearman's rank-order correlation was used to assess associations between maternal age and BSS-R scores.
·Kruskal-Wallis H test was used to compare BSS-R scores across BMI categories.
·Mann-Whitney U test was used to compare BSS-R scores between skilled and semi-skilled workers, as described by the ISCO-08.

Due to the limited sample size and limited variability in ethnicity and smoking status, inferential statistical testing was not undertaken for these variables. A p-value of $\leqslant 0.05$ was taken as significant. All analyses were considered exploratory. There were no missing data for BSS-R items or demographic variables. Therefore, complete-case analysis was undertaken. No weighting procedures or propensity score adjustments were applied, as the sample was derived using a convenience sampling method. No sensitivity analyses were conducted.

Qualitative analysis of free-text responses: Optional free-text comments provided by the participants were analysed using thematic analysis, following the six-phase approach described by Braun and Clarke[15]. Responses were read repeatedly to achieve familiarisation with the data. Initial codes were generated and grouped into themes. Themes were reviewed, refined, and defined to ensure internal coherence and distinction.

Non-response considerations and bias minimisation: All eligible women meeting inclusion criteria were contacted, which minimised selection bias. Eligibility criteria were applied consistently to all cases. Birth satisfaction was measured using a validated instrument, reducing measurement bias. However, as sampling was done only in one maternity unit in Ireland, it may not be fully representative of all women with tocophobia. To prevent duplicate responses, survey submissions were cross referenced with consent records. As participation was voluntary, non-response bias remains possible. Response rates are addressed in the limitations section.

## Results

Response rate: During the study period, 3,478 nulliparous CS were performed at Cork University Maternity Hospital. Of these, 48 women (1.36%) had a primary indication of tocophobia and met all inclusion and exclusion criteria. All 48 eligible women were contacted with an invitation to the study.
Of the 48 women contacted, 17 (35.4%) responded and provided consent to be contacted further. Of these women, 15 completed informed consent and the full survey, giving a response rate of 31.25% of all eligible participants.

Demographic characteristics: The demographic characteristics of the sample are illustrated in Table 1.

Birth satisfaction outcomes: The median total BSS-R score was 31 out of 40 (range 26-39), indicating generally high levels of birth satisfaction.
Median scores for the 3 BSS-R subscales were as follows:
·Stress experienced during labour: median 13 out of 16 (range: 7-16),
·Women's personal attributes: median 6 out of 8 (range: 2-8),
·Quality of care provision: median 13 out of 16 (range: 7-16).

Associations between demographic factors and birth satisfaction: Exploratory unadjusted analyses were conducted to assess the association between participant demographics and birth satisfaction outcomes (total BSS-R score and subscale scores).

No statistically significant associations were observed between BSS-R scores and assessed demographic variables, however these analyses were likely underpowered and should be interpreted with caution. Effect sizes and 95% confidence intervals are reported for all key outcomes to reflect the precision of the estimates and the uncertainty associated with small sample sizes.

*Table 1 Demographic characteristics of sample (n=15)*

| | |
|---|---|
| Mean age | 36.3 (SD 2.87) |
| BMI overweight or obese | 40% (6/15) |
| Occupation skill-level ≥3 | 80% (12/15) |
| White Irish ethnicity | 93.3% (14/15) |
| Non-smoker | 93.3% (14/15) |
| Any medical co-morbidity | 66.7% (10/15) |
| Prior mental illness | 20% (3/15) |

*Figure 1 Boxplot of BSS-R Total and Subscale Scores*

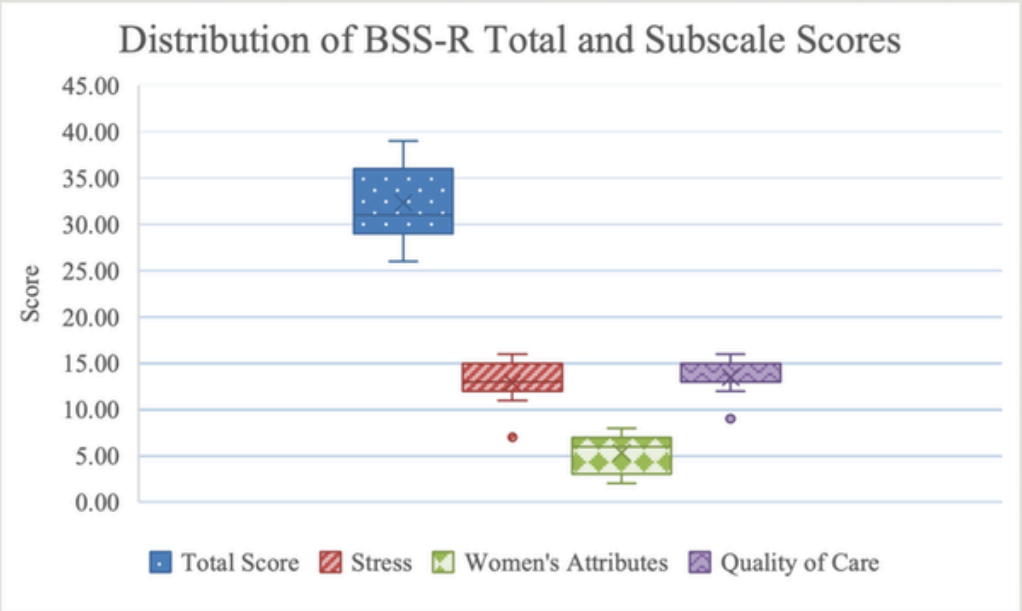


*Table 1 Demographic characteristics of sample (n=15)*

| *Demographic Factor* | Outcome measure | Statistical Test | Test statistic | Effect size/CI | p-value |
|---|---|---|---|---|---|
| *Maternal age* | Total BSS-R score | Spearman's rank correlation | *rs*(13) = -.127 | 95% CI [-0.648, 0.503] | 0.651 |
| | Stress experienced during labour | Spearman's rank correlation | *rs*(13) = -.248 | 95% CI [-.681, .334] | 0.372 |
| | Women's personal attributes | Spearman's rank correlation | *rs*(13) = -.028 | 95% CI [-.620, .599] | 0. 921 |
| | Quality of care | Spearman's rank correlation | *rs*(13) = -.261 | 95% CI [-.741, .452] | 0.347 |
| *BMI category* | Total BSS-R score | Kruskal-Wallis H test | H(3) = 3.542 | $\varepsilon^2$ = 0.049 | 0.315 |
| | Stress experienced during labour | Kruskal-Wallis H test | H(3) = 4.608 | $\varepsilon^2$=0.146 | 0.203 |
| | Women's personal attributes | Kruskal-Wallis H test | H(3) = 1.393 | $\varepsilon^2$ = 0 | 0.707 |
| | Quality of care | Kruskal-Wallis H test | H(3) = 3.500 | $\varepsilon^2$ = 0.045 | 0.321 |
| *Occupational skill level (skilled vs* | Total BSS-R score | Mann-Whitney U test | U = 9.5, z = -1.231 | r = 0.32 | 0.218 |
| | Stress experienced during labour | Mann-Whitney U test | U = 10.000, z = -1.173 | r = 0.30 | 0.241 |
| | Women's personal attributes | Mann-Whitney U test | U = 9.000, z = -1.316 | r = 0.34 | 0.188 |
| | Quality of care | Mann-Whitney U test | U = 8.5, z = -1.173 | r = 0.303 | 0.241 |

Qualitative analysis of comments: The optional comment sections after each of the 10 Likert scale questions underwent thematic analysis. A total of 46 individual comments were examined. The main themes are listed below:

·Communication: Participants frequently highlighted the importance of clear, timely, and empathetic communication from healthcare professionals.

- P15: "Staff let me know what was happening at every stage which put me at ease."
- P11: "Communication was excellent, every step of the procedure was explained to me."

·Emotional response: Women described strong emotional reactions related to fear, relief, and reassurance. Many comments reflected reduced anxiety following confirmation that they could have an elective CS:

- P4: "I was very anxious before birth, hence I opted for a section."
- P9: "Having worried about childbirth since I was in my early twenties, I was so relieved beyond words to be having a section."

·Support: Perceived emotional support from midwives, obstetricians, and partners was repeatedly identified as central to a positive birth experience:

- P11: "The staff were very encouraging, talking to myself and my husband during the birth. It was very reassuring."

·Control: Patients expressed varying perspectives on control. Many patients who agreed with the statement "I felt out of control during my birth experience" further explained in the comments that they did not view this as a negative, while others felt that knowing what was to come increased their perceived control:

- P14: "I WANTED to be out of control during labour."
- P15: "Knowing I was having a planned section and on what date and my consultant being there helped me to prepare."
- P11: "I wanted doctors to handle my birth as I trusted them more than myself."

## Discussion

Interpretation: In line with the study objective of evaluating birth satisfaction among women undergoing elective CS for primary tocophobia at a single tertiary maternity unit, this study found that participants reported generally high levels of birth satisfaction, as reflected by the median BSS-R score of 31 out of 40.

This finding contrasts with literature reporting lower satisfaction following CS, but aligns with evidence that achieving a preferred mode of birth is associated with greater satisfaction. Additionally, it is further backed by the use of a validated questionnaire.

BSS-R subscale scores were high across stress during labour, women's personal attributes, and quality of care, indicating satisfaction across multiple domains. This supports the view that an elective CS, when chosen to address severe fear of childbirth, may contribute to a more positive overall experience.

Within the study period, elective CS with an indication of primary tocophobia accounted for 1.36% of nulliparous CS deliveries at CUMH. Participants were predominantly white Irish, and older than the average first-time mother[16]. A substantial proportion of participants had high skill-level, with no representation of minimally skilled workers or the unemployed.

Exploratory analyses did not demonstrate significant associations between maternal age, BMI category, or occupational skill level and total or subscale BSS-R scores. These findings should be interpreted cautiously. The absence of observed associations does not exclude the possibility of meaningful relationships.

Thematic analysis contextualised quantitative findings. Themes of communication, emotional response, support, and control emerged as central to the participants' experiences. Perceptions of control varied between participants, with several women expressing comfort in giving up control to trusted healthcare workers. The questionnaire assumed that having a high level of perceived control during labour would correlate to a higher birth satisfaction, leading to potential inaccuracies in these women's satisfaction scores.

Limitations: The most significant limitation is the small, single-centre sample, limiting statistical power. The sample size also restricted the use of multivariable regression models to adjust for potential confounding factors. Statistical guidance recommends adequate events-per-variable ratios when performing adjusted analyses, so with only fifteen completed surveys such modelling would likely have produced unreliable results.

Response bias may have been present, with women with particularly positive or negative views more likely to participate. As demographic information was unavailable for non-responders, it was impossible to formally assess representativeness. Additionally, it may have been up to four years since participants underwent CS, introducing the possibility of recall bias. The homogeneity of the respondents' demographic profile also limits the generalisability of these findings to more ethnically or socioeconomically diverse populations. A further limitation is that tocophobia was identified from clinician-documented indication for CS in surgical logbooks rather than through a standardised diagnostic interview or validated questionnaire. Therefore, variation in clinician assessment may have affected case ascertainment. Furthermore, women recorded under broader indications such as "maternal request" may also have had tocophobia but were not captured. Finally, the lack of comparison group prevents the ability to compare satisfaction across groups with different modes of delivery or other indications.

Future research: Areas for future research include comparing those who have tocophobia who do and do not achieve their preferred mode of delivery. Future research should aim to build on findings with larger, multi-centre studies to improve statistical power and enhance generalisability. Research should explore underlying reasons for tocophobia in this cohort, as well as use standardised fear of childbirth measures to better distinguish true tocophobia from broader childbirth fear. Validation of the Birth Satisfaction Scale-Revised for use in the Irish population would also strengthen research in this area.

## Conclusion

Women undergoing elective CS for primary tocophobia in this study reported high levels of birth satisfaction using a validated questionnaire. These findings support the role of autonomy in improving patient experience. Recognition of birth satisfaction as a legitimate clinical consideration may contribute to a care environment where women feel safe, heard, and respected.

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