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Women's levels of Birth Satisfaction in the Greek Cypriot context

ABSTRACT

Background

Women's satisfaction with their childbirth experiences is an important outcome for perinatal healthcare systems. Low satisfaction levels have been associated with both short-term and long-term implications for the mother, the baby and the family unit. This is the first study conducted in Cyprus measuring women's birth satisfaction levels through BSS-R.

Aim

To examine birth satisfaction among new mothers in Cyprus using the BSS-R and to investigate potential associations between birth satisfaction, socioeconomic factors, and obstetric parameters, including mode of birth, complications, presence of a birth partner, and the perception of labour as traumatic.

Method

The data presented in this article are part of data collected for the INTERSECT study (ResearchRegistry.com Identifier: 6439), an international, cross-sectional survey of postpartum PTSD, depression, trauma exposure, birth satisfaction, as well as demographic and obstetric details. The study population was 238 women who had given birth in Cyprus a maximum of two years prior to their participation in the study. Data collection was conducted between September 2022 and May 2023.

Results

Significant associations were found between birth satisfaction and socioeconomic and obstetric factors. Older women and those with previous childbirth experience reported higher satisfaction levels. Differences in birth satisfaction were found between women experiencing an emergency CS and those having a vaginal birth. Statistically significant differences in birth satisfaction were also found between women who had no complications and those who had experienced complications during their labour. Women who had a partner present during labour were more satisfied than those who had no one. The findings of both the quantitative and the qualitative data suggest a number of actions that can be developed and implemented to increase women's birth satisfaction levels in the Greek Cypriot context.

Conclusions

Women's birth satisfaction levels in Cyprus can be enhanced through targeted interventions including the development of national guidelines for the provision of quality care, re-design of antenatal education and training of healthcare professionals. The validation of BSS-R in the context

under investigation could facilitate the systematic assessment of birth satisfaction, a practice currently missing from the local healthcare system.

INTRODUCTION

Background

Maternal satisfaction with childbirth is a critical and significant outcome for maternity care systems. Childbirth is a complex event, described as “an individual life event, incorporating interrelated subjective psychological and physiological processes, which in turn, are influenced by social, environmental, organisational and policy contexts” (Larkin et al., 2009, p. 49). Experiences of childbirth are therefore diverse and subjective. Birth satisfaction encompasses an individual woman’s perception of her experience of childbirth (Hollins Martin, 2014). Several factors have been associated with women’s birth satisfaction, including the model of maternity care (biomedical or humanised model) (Conesa-Ferrer et al., 2016; Lemmens et al. 2021); values (e.g. compassion, empathy, respect), attitudes, and behaviors of healthcare professionals (HPs), effective communication and involvement of women in decision-making, as well as perceived personal control (Christiaens & Bracke, 2007; Larkin et al., 2012; Preis, Lobel & Benyamini; 2019; Stevens, Wallston & Hamilton, 2011; Waldenström et al., 2004) and having requests fulfilled according to a woman’s individualized birth plan (Amporfro et al., 2021; Benoit et al., 2007; Catala et al., 2018; Chalmers & Dzakpasu 2015; Gregory et al, 2019; Gudu & Addo, 2017; Hodnett, 2002; Larkin et al., 2012; Macpherson et al. 2016; Mei et al., 2016; Spaich et al. 2013; Waldenström et al., 2004).

Women’s satisfaction with their childbirth experiences is a topic of significant interest to parents’ organizations, health professionals and policymakers as the available research highlights that low birth satisfaction is associated with immediate and long-term implications for the mother, the baby, and the entire family (Power et al., 2019). For example, it is commonly found that women who are dissatisfied with their birth experience may decide not to have another baby (Gottvall & Waldenström, 2002; Larkin et al., 2012). Importantly, research shows that a negative childbirth experience is associated with increased risk of postpartum psychological distress, including postpartum depression (PPD) and post-traumatic stress (PTS) symptomatology. A systematic review by Bell & Andersson (2016) shows that 11 out of 15 studies report a significant statistical relationship between women’s perceptions of birth experience and postpartum depressive symptoms. This increased risk remains after adjustment for sociodemographic, obstetric, and psychiatric factors (Benoit et al., 2007; Urbanová, 2021). Birth satisfaction has also been found to be significantly correlated with PTSD symptoms (Mokhtari et al. 2018; Nakić et al. 2022). In a meta-analysis of 50 studies, Ayers et al. (2016) found that negative subjective birth experiences were a strong risk factor for childbirth-related PTSD. This type of PTSD can develop following a “traumatic childbirth” (Yildiz et al., 2017), which can be defined in different ways. Leinweber et al. (2022) defined it as “a woman's

experience of interactions and/or events directly related to childbirth that caused overwhelming distressing emotions and reactions; leading to short and/ or long-term negative impacts on a woman's health and wellbeing”.

Childbirth satisfaction, therefore, is an important construct that can provide useful information, not just for the quality of maternal care provided, but also for the assessment and monitoring of potential postpartum psychopathology. A systematic review by Blazquez et al. (2017) identified seventeen (17) psychometric instruments that measure satisfaction with the care received during childbirth. One of these instruments is the Birth Satisfaction Scale-Revised (BSS-R) (Hollins Martin & Martin, 2014), a 10-item, self-report scale, which is the successor of the original 30-item Birth Satisfaction Scale (BSS) (Hollins Martin & Fleming 2011). The BSS-R's robustness and psychometric properties has led to the recommendation of the instrument as the method of choice for assessing postpartum women's satisfaction with their birth experience by the International Consortium for Health Outcome Measurement (ICHOM) (www.ichom.org/medical-conditions/pregnancy-and-childbirth/).

The case of Cyprus

Childbirth is a highly medicalized experience in the Greek Cypriot context. While obstetricians /gynecologists (OBGYNs) and midwives are considered the primary caregivers of antenatal, intrapartum, and postnatal care, research shows that perinatal care is greatly dominated by OBGYNs (Hadjigeorgiou et al, 2020; 2022; 2023). In 2019, Cyprus introduced the General Healthcare System (GESY), a national health insurance scheme aimed at universal coverage and equitable access (Ministry of Health, 2019). Under GESY, midwives were recently recognized as independent providers with pregnant women and new mothers being allowed a maximum of 6 visits to a midwife of the scheme. Nevertheless, midwifery-led care is largely limited in the Greek Cypriot context. At the moment, there is only one midwife-led unit in a Limassol hospital, which can accommodate one or two women at a time. Home births are prohibited by law and a significant characteristic of the childbirth culture is the extremely high rates of caesarean section (CS) (Ministry of Health, 2023a). The percentage of caesarean sections in the Republic of Cyprus for the year 2021 was almost 60%, among the highest in the world (Ministry of Health, 2023b). In spite of efforts to decrease unnecessary CSs both by women's groups and by the Ministry of Health in the past few years, the rates not only remain high, but there is an observed increase (53.1% in 2019, 55.9% in 2020, 58.9% in 2021). Vaginal birth after a previous caesarean section VBAC remains a controversial topic, while there are no national guidelines or specific targets to be achieved (Hadjigeorgiou et al., 2021). A

study employing semi-structured interviews to examine women's experiences of VBAC in Cyprus reflected women's dissatisfaction with the high levels of childbirth medicalization, characterizing the childbirth culture as "a culture of CSs". Overall, national obstetric guidelines and protocols for perinatal care are absent, while perinatal mental health remains even more neglected (Motrico et al., 2022). At the same time, there are no national policies regarding the screening, treatment, and prevention of a traumatic birth experience (Thomson et al, 2021). It is worth noting that a recent survey conducted with 634 women by the Association for the Prevention and Handling of Violence in the Family indicated that one in three women who had given birth in the Republic of Cyprus during the last decade had experienced some form of obstetric violence by health professionals (Association for the Prevention and Handling of Violence in the Family, 2023).

The Babies Born Better survey conducted in Cyprus (Hadjigeorgiou et al, 2023) provided further insights into the women's experience of perinatal care. Almost a fourth of the 360 mothers who participated (24.2%) rated their experience as "bad" and 13.3% as "very bad". At the other end, only 11.1% and 13.9% of the participants rated their experience as "good" and "very good" respectively. Two of the factors that significantly affected the mothers' dissatisfaction with their perinatal care were health professionals' failure to elicit consent for any intervention and a lack of respect for women's values and wishes, including the right to choose how to give birth and the right to breastfeed. The lack of maternal involvement in decision-making around the mode of birth and labour care was also highlighted by the participants. Other aspects of a perceived negative experience were a perceived lack of humanity, support, bonding, and safety with their healthcare providers; abuse of authority and psychological manipulation; an insufficient presence of the doctor; a feeling of being simply a source of money; and being exploited while in a vulnerable situation. Similarly, a recent qualitative study highlighted that women often navigate an "unsupportive system" with limited informational support during pregnancy and their transition to parenthood (Koliandri et al., 2023). An ethnographic study on classes for new parents in Cyprus found that while these classes are valuable, participants' expectations often remain unfulfilled due to the lack of a standardized national curriculum for childbirth education and insufficient practical information on critical topics like breastfeeding, among other reasons (Hadjigeorgiou et al., 2024).

Overall, birth satisfaction levels have received little attention in Cyprus. More research is needed to explore whether the maternity care currently provided meets women's values, needs, and expectations in relation to childbirth. To the best of our knowledge, this is the first study that utilizes BSS-R to examine women's birth satisfaction, including quality of care provision, women's attributes,

and stress levels during labour and birth in Cyprus. The analysis and findings presented in this paper are in line with the international recognition of the centrality of childbirth experiences to women's psychological health (Simkin, 1991; Walsh, 2007).

Aim

To examine birth satisfaction levels in a sample of new mothers in Cyprus through the Greek version of BBS-R (G-BSS-R).

METHODS

The data utilized for this article were collected in the framework of the INTERSECT study (ResearchRegistry.com Identifier: 6439), an international, cross-sectional survey examining postpartum PTSD, depression, trauma exposure, birth satisfaction, as well as demographic and obstetric details. The study population included 238 women over the age of 18 who had given birth in Cyprus a maximum of two years prior to participation. The study was approved by the Cyprus Bioethics Committee (EEBK ΕΠ 2022.01.195) and all data were anonymized in accordance with the Helsinki Declaration of Research with Human Beings.

The objective of this article is to examine women's birth satisfaction levels in the Republic of Cyprus and to investigate potential associations between birth satisfaction, socioeconomic factors, and obstetric parameters, including mode of birth, complications, presence of a birth partner, and the perception of labour as traumatic. In addition, the thematic analysis of an open-ended question asking women "If there is anything else you would like to tell us or comment on regarding your birth or how you are feeling, please add it here" was conducted to provide a more detailed, in-depth understanding of women's experiences.

Measures

The questionnaire consisted of the City Birth Trauma Scale (City BiTS; Ayers et al., 2018), the Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987), the Birth Satisfaction Scale-Revised (BSS-R; Hollins Martin & Martin, 2014), as well as obstetric details (e.g. time since birth, number of

children, type of birth, exposure to trauma) and demographic information (e.g. age, marital status, education level, perceived socioeconomic status, and history of psychiatric treatment).

Birth experience and satisfaction was assessed by the BSS-R, which consists of 10 items, each scored on a 5-point Likert scale, with 0 being “strongly disagree” and 4 being “strongly agree”. Possible scores for the total scale range from 0 to 40, with higher scores indicating higher levels of birth satisfaction. Besides the higher-order factor (experience of childbirth), the BSS-R contains three lower-order factors: Quality of Care Provision, Women's Personal attributes, and Stress experienced during Labour). The subscale Quality of Care Provision (BSS-QC) consists of four items assessing shared decision-making, support and effective communication with staff, as well as hygienic considerations (exemplary item “The delivery room staff encouraged me to make decisions about how I wanted my birth to progress”). The Women’s Personal Attributes (BSS-WA) subscale consists of two items assessing anxiety and feeling out of control (exemplary item “I felt out of control during my birth experience”, reverse scored) and the Stress experienced during Labour (BSS-SL) subscale consists of four items assessing physical or psychological harm, perception of labour as excessively long, and giving birth as a distressing experience (exemplary item “I came through childbirth virtually unscathed”). Possible scores for each of the subscales range from 0 to 16, 0 to 8, and 0 to 16 respectively. The BSS-R has been validated for use in other English speaking countries, besides the UK where it originated, such as the United States (Barbosa-Leiker et al. 2015) and Australia (Jefford, Hollins Martin & Martin, 2018), while it has been translated and validated in multiple non-English languages and settings including Spain (Romero-Gonzalez et al. 2019), Slovakia (Škodová et al. 2019), Israel (Skvirsky et al. 2020), Iran (Nasiri, Kariman & Ozgoli, 2020), Italy (Nespoli et al., 2021), and Greece (Vardavaki et al. 2015) among others. In this study, the Greek version of BBS-R was used (G-BSS-R). An assessment of G-BSS-R’s factor structure, internal consistency, divergent validity and known-groups discriminant validity showed the instrument to be a valid and reliable measure of birth satisfaction in Greek postpartum women (Vardavaki et al., 2015).

Data Collection

The data collection took place between September 2022 and May 2023 across five healthcare settings in Cyprus. Participants were recruited through one public and one private maternity clinic, two midwives registered in GESY and through the Center for Preventive Paediatrics “Americos Argyriou”, a charitable organization established in 1988 that provides free screening programs to pregnant women and newborns across Cyprus. With branches in all cities across Cyprus, the Center was selected as a recruitment site due to its extensive reach to women during pregnancy and early

postpartum periods and its mandate to serve the entire population of Cyprus regardless of socioeconomic status. Women were provided printed information leaflets, which included the aim of the study, as well as the link to the online questionnaire via a shortened URL and a QR code. Women who were interested in participating could choose between a Google Forms survey, or a paper and pencil questionnaire, both requiring approximately 15 minutes to complete. After an overview of the study, participants were asked to confirm the set of eligibility criteria and provide their informed consent in order to access the study. The consent form provided a clear explanation of how anonymity, confidentiality and protection of data would be safeguarded. Contact information for the lead research team was made available in case participants wished to request additional information.

Data analysis

Survey data were manually checked for accuracy and consistency before analysis. From an initial number of 287 respondents, we identified and removed 49 invalid records (i.e. women who did not fulfil the inclusion criteria), leaving a sample of 238 participants for analysis. All analysis was conducted using records without missing values. The statistical package SPSS v26.0 was used. Descriptive data analysis was performed to report frequencies and percentages for categorical data and means and standard deviations for numerical variables. Cronbach's α was calculated for the subscales of the BSS-R to measure internal consistency. The Kolmogorov Smirnov test of normality was used, due to the relatively large sample size, to assess numeric data before proceeding with inferential statistics. As the null hypothesis of normality was rejected ($p < 0.01$) for all numeric variables, we proceeded with non-parametric tests. For calculating correlations between two numeric variables we used the Spearman's Correlation which is the non-parametric equivalent of Pearson's correlation. Differences between two independent groups were investigated using the Mann Whitney U test for independent groups which is the non-parametric equivalent of the t test for independent groups, whereas differences between three or more independent groups were investigated using the Kruskal Wallis test for independent groups which is the non-parametric equivalent of ANOVA. In cases where significant differences were found using the Kruskal Wallis test, pairwise comparisons were performed and adjusted using Bonferroni's correction for multiple testing. Multiple linear regression models were constructed for the data; however, the assumption of normality was rejected for the residuals. Subsequently, it was also attempted to perform two-way ANOVA analysis after performing Rank Transformations (RT) on the dependent variables, as a form

of bridge into Nonparametric Statistics. Despite these adjustments, no interactions were identified between the independent variables. Finally, multiple Linear regression analysis was performed again after data were forward and backward transformed to assist in normality of residuals with Kolmogorov Smirnov test of normality performed on the residuals to assess normality, the Durbin-Watson Test was performed to check for independence of residuals and the Variance Inflation Factor (VIF) was used to determine collinearity of the predictor variables.

The qualitative analysis of written, unstructured responses provided by participants to the open-ended question "If there is anything else you would like to tell us or comment on regarding your birth or how you are feeling, please add it here" was performed by two researchers trained in qualitative research methods (E.H., A.C.). Responses were mainly provided in the Greek language with either Greek or Latin characters and ranged from a phrase to a paragraph of text. The answers to the open-ended question were extracted through SPSS into a Word document and were translated into English by the two researchers who are native Greek speakers and fluent in oral and written English. To ensure that the translation did not deviate from the original meaning, a third researcher (I.K.) who is bilingual (native English and Greek speaker) performed quality control on the translation. The participants' answers were then analyzed simultaneously by the two researchers following the deductive approach. A priori topic codes were developed based on the items of the three BSS-R subscales, that is, (1) quality of care provision, (2) women's personal attributes, and (3) stress experienced during labour and then applied to data (Bingham & Witkowsky, 2022). The codes reflected the broad categories of interest. Data that were not relevant to birth satisfaction were filtered out. The coding was performed by the two researchers, who also highlighted quotes that provided an in-depth understanding of the women's views. The coding was then compared and discussed by both parties until consensus was reached. Doubts were discussed with another researcher (I.K.), who is familiar with the topic and the context under investigation. Although individual responses to open-ended questions might have been brief, they nonetheless provided richness and depth in their entirety (Braun et al., 2020).

RESULTS

The study population consisted of 238 women with a mean age of 32.88 years ($SD=4.29$). The sample size was determined a priori by the INTERSECT team, following the study protocol (available at <https://www.intersectstudy.org/>). According to the protocol, a sample of 250 women per country was required for inclusion in the international dataset. This decision was based on established sample size guidelines for psychometric analysis, pragmatic considerations and the overall size of the

international sample. Most participants were Greek Cypriots (81.9%), married/ in civil partnership (85.7%) or cohabitating with a partner (11.3%), living in an urban area (61.9%), university graduates (92.4%), and of average perceived socioeconomic status (57%). More than half of the women were first-time mothers (59.2% while) 31.5% had one previous child (59.2%), and 9.3% had two or more children. The vast majority of the women (94.1%) had singleton pregnancies.

Regarding the birth mode, 45% of women gave birth vaginally (37.8% vaginal birth, 7.1% assisted vaginal birth), with the remaining 55% giving birth through caesarean section (20.2% emergency CS, 23.9% planned CS for medical reasons, and 10.9% planned elective CS). Most women (71.4%) and babies (84.4%) did not experience any complications during childbirth, with only 5.9% of women and 3.8% of babies experiencing major complications during childbirth (Table 1).

Table 1: Obstetric Information (N=238)

		N (%)
Birth Mode	Vaginal birth	90 (37.8)
	Assisted vaginal birth	17 (7.1)
	Emergency CS	48 (20.2)
	Planned CS (medical reasons)	57 (23.9)
	Planned Elective CS	26 (10.9)
Complications (Mother)	Minor complications	54 (22.7)
	Major complications	14 (5.9)
	No complications	170 (71.4)
Complications (Baby)	Minor complications	28 (11.8)
	Major complications	9 (3.8)
	No complications	200 (84.4)

Satisfaction with birth

Descriptive statistics for the BSS-R and its subscales are presented in Table 2. The mean birth satisfaction (BSS-R) was 25.45 (SD=6.69). The mean score of BSS-QC, which measures shared decision-making, support, effective communication with staff, and hygienic considerations, was 12.58 (SD=3.71). The mean score of BSS-WA, which measures anxiety and feeling out of control, was 3.71 (SD=2.21), while the mean score of BSS-SL, measuring physical or psychological harm, perception of labour as excessively long, and giving birth as a distressing experience, was 9.16 (SD=3.36).

Table 2: Descriptive Statistics for BSS-R

	Mean	SD	Range
BSS-R Total	25.45	6.69	5-40
BSS-QC	12.58	3.71	2-16
BSS-WA	3.71	2.21	0-8
BSS-SL	9.16	3.36	0-16

Cronbach's α of the BSS-R in this study was 0.77 whereas, Cronbach's α of the subscales BSS-QC (Quality of Care), BSS-WA (Women's Attributes), and BSS-SL (Stress during Labour) were 0.77, 0.62 and 0.60 respectively. Based on the sample size and items for each dimension, indicate a Good internal consistency for the Quality of Care dimension, a Moderate to Good internal consistency for the BSS-R Total, and a Fair internal consistency for the Attributes and Stress dimensions (Ponterotto, & Ruckdeschel, 2007). The null hypothesis of normality was rejected ($p < 0.01$) for all numeric variables through the Kolmogorov Smirnov test of normality.

Factors associated with birth satisfaction

In terms of demographics, there was a statistically significant positive correlation between age and women's attributes (BSS-WA) ($r=.18$, $p<0.01$). There were not any statistically significant relations between BSS-R or any of its subscales with nationality, relationship status, residence area, education level, perceived socioeconomic status, or type of pregnancy (singleton or twins). The Kruskal Wallis test of independent groups shows that there were some statistically significant differences for women with previous children in the BSS-R Total, BSS-WA, and BSS-SL (Table 3).

Table 3: Differences with respect to previous children

Number of Children	p value	p value*
BSS-SL	0.011	
0 vs 1	0.020	0.123
0 vs 2	0.006	0.036
BSS-WA	0.034	
0 vs 1	0.015	0.093
0 vs 2	0.034	0.207
BSS-QC	0.756	
BSS-R Total	0.040	
0 vs 2	0.011	0.064

*With Bonferroni correction

In terms of obstetric factors, an analysis was performed in relation to the mode of birth, complications affecting the mother, and complications affecting the infant. In terms of mode of birth, the Kruskal Wallis test of independent groups shows that there were some statistically significant differences across different groups in the BSS-R Total, BSS-WA, and BBS- SL (Table 4).

Table 4: Differences with respect to mode of birth

Mode of Birth	p value	p value*
BBS-SL	<0.001	
Emergency CS vs planned CS (medical reasons)	0.002	0.017
Emergency CS vs planned CS (personal Choice)	0.004	0.041
Emergency CS vs vaginal birth	<0.001	<0.001
BSS-WA	<0.001	
Emergency CS vs vaginal birth	<0.001	<0.001
Planned CS (medical reasons) vs vaginal birth	<0.001	0.003
BSS-QC	0.060	
Planned CS (personal Choice) vs vaginal birth	0.020	0.200
Planned CS (personal Choice) vs planned CS (medical reasons)	0.028	0.282
BSS-R Total	<0.001	
Emergency CS vs planned CS (personal Choice)	0.043	0.430
Emergency CS vs planned CS (medical reasons)	0.004	0.042
Emergency CS vs vaginal birth	<0.001	<0.001

*With Bonferroni correction

In terms of complications affecting the mother, the Kruskal Wallis test of independent groups shows that there were some statistically significant differences across different groups in the BSS-R Total and BBS- SL (Table 5).

Table 5: Differences with respect to complications affecting the mother

Complications for the mother	p value	p value*
BBS-SL	<0.001	
Major complications vs No complications	<0.001	0.001
Minor complications vs No complications	0.001	0.003
BSS-WA	0.022	
Major complications vs No complications	0.027	0.082
BSS-QC	0.036	
Major complications vs No complications	0.033	0.098
BSS-R Total	<0.001	
Major complications vs No complications	<0.001	0.001
Minor complications vs No complications	0.004	0.011

*With Bonferroni correction

The analysis for complications affecting the infant showed statistically significant differences in BSS-R Total and BSS-SL (Table 6).

Table 6: Differences with respect to complications affecting the infant

Complications for the baby	p value	p value*
BSS-SL	0.003	
Major complications vs No complications	0.021	0.064
Minor complications vs No complications	0.009	0.026
BSS-WA	0.065	
Minor complications vs No complications	0.026	0.079
BSS-QC	0.094	
BSS-R Total	0.003	
Major complications vs No complications	0.016	0.049
Minor complications vs No complications	0.010	0.030

*With Bonferroni correction

The majority of women (76.5%) had their partner present during labour. Almost 20% of the women reported not having anyone with them during labour besides health professionals, while only a few women had a friend, relative or other person with them. The Kruskal Wallis test of independent groups shows that there are differences in BSS-R Total and BSS-WA in terms of those present during labour.

Table 7: Differences with respect to those present at birth

Present at birth	p value	p value*
BBS-SL	0.277	
BSS-WA	0.003	
Relative vs Partner	0.028	0.282
Relative vs Friend	0.031	0.308
No one vs Partner	0.003	0.029
BSS-QC	0.129	
Other vs Partner	0.021	0.206
Other vs No one	0.014	0.135
Other vs Relative	0.019	0.187
Other vs Friend	0.033	0.334
BSS-R Total	0.044	
Other vs Partner	0.021	0.207
Other vs Friend	0.008	0.081

*With Bonferroni correction

Out of those women who reported having at least a birth partner with them during labour, half (50.8%) reported feeling “very much” supported and about a fourth (23.9%) reported feeling “much” supported. Fewer women reported receiving “medium” support, “little” support, and no support (9.2%, 4.6% and 6.3% respectively). The Kruskal Wallis test of independent groups across the level of

support received by those present (excluding healthcare professionals) during labour shows significant differences in BSS-R Total and the three subscales.

Table 8: Differences with respect to level of support

Level of Support	p value	p value*
BBS-SL	0.008	
Little vs Very Much	0.011	0.114
Little vs Much	0.004	0.040
None vs Very Much	0.046	0.463
None vs Much	0.017	0.165
BSS-WA	0.008	
None vs Very Much	0.007	0.073
None vs Much	0.002	0.022
Medium vs Much	0.026	0.263
BSS-QC	0.001	
Little vs Much	0.022	0.220
Little vs Very Much	0.002	0.021
Medium vs Very Much	0.003	0.027
BSS-R Total	<0.001	
Little vs Very Much	<0.001	0.005
Little vs Much	<0.001	0.003
None vs Very Much	0.004	0.040
None vs Much	0.003	0.028
Medium vs Very Much	0.026	0.260
Medium vs Much	0.018	0.176

*With Bonferroni correction

To the question asking “Overall, how traumatic did you find your birth?” (0 = not at all traumatic, 10 = exceptionally traumatic) the mean was 3.14 (SD= 3.3). The analysis revealed a negative correlation between birth satisfaction BSS-R Total and traumatic birth ($r=0.653$, <0.001), as well as negative correlations with all three subscales. The strongest correlation of traumatic birth was with BSS-SL ($r=-0.611$, <0.001), followed by BSS-WA (-0.558 , <0.001) and BSS-QC ($r=-0.348$, <0.001).

Multiple linear regression analysis indicated that the multiple linear regression model including method of delivery, baby complications and mother complications, was significant $F(3,234) = 12.66$, $p < 0.001$. The adjusted R^2 was 0.129, indicating that method of delivery, baby complications and mother complications explained approximately 13% of the variance in Total Satisfaction. Method of delivery, baby complications and mother complications were all significant predictors ($\beta = -4.032$, $p<0.001$; $\beta = -3.000$, $p=0.011$; $\beta = -2.320$, $p=0.015$) indicating that emergency caesarean section decreased total satisfaction by 4.032 points, baby complications decreased Total Satisfaction by 3

points and mother complications decreased Total Satisfaction by 2.32 points. The Kolmogorov Smirnov test of normality, performed on the residuals, did not reject normality ($p = 0.055$), whereas the mean value of the standardized residuals was equal to zero, at 16 decimal points, the Standard Error of Skewness was equal to 1.84, all of which supported the normality of the residuals and thus the normality assumption of the model. The Durbin-Watson Test was equal to 1.905 supporting independence of residuals and the VIF was equal to 1.017 – 1.096 supporting lack of collinearity of the predictor variables.

Qualitative data

The qualitative analysis of open-ended responses provided deeper insights into women's experiences, complementing the quantitative findings and providing deeper contextual understanding of satisfaction determinants.

Quality of Care

The attitudes and behaviors of healthcare professionals emerged as crucial factors in shaping satisfaction. Participants consistently emphasized the significance of provider attitudes, behaviors, and communication approaches in shaping their overall experience. Women who reported positive birth experiences frequently attributed these to healthcare providers who demonstrated continuous presence, supportive attitudes, and advocacy for their birth preferences. As one participant expressed:

“My [female] gynaecologist and my [female] midwife were exceptional and they offered me a great experience of labour. They were present during the whole duration of labour, [they were] supporters of natural childbirth and of breastfeeding. I feel blessed that I came across them and I chose them” (Participant #195)

“The positive experiences and feelings concerning my labour are due to my [female] doctor, who made me feel safe during the whole time of labour” (Participant #162)

On the contrary, women who perceived their experience as indifferent or detached, reported lower satisfaction, even in the absence of medical complications. One participant described her experience:

“My doctor did a good job, just it was soul-less, like in a slaughterhouse, soul-less. No real assistance before and during labour to make it better” (Participant #229)

Another woman explicitly attributed her negative experience to interactions with staff:

“The negative feelings in relation to labour are exclusively due to the nursing staff”
(Participant #200)

Autonomy and shared decision-making emerged as fundamental components of quality care. Women who felt included in the decision-making process reported more positive experiences. As one multiparous participant reflected:

“From my experiences (4 kids) the support in the hospitals in Cyprus is improving but [it is] still not at the level where it should be. It is crucial for a mother to get the support and choice from the very start” (Participant #220)

Women feeling not having a say in the process (e.g. method of delivery, presence of others in the delivery room, and the practice of staying with the newborn) perceived the experience in negative terms:

Non-choice of caesarean section, it was done compulsorily and with very little information, without a serious reason (Participant #156)

They didn't let my partner be in the labour room the whole time. They granted me two shots, so the birth was almost painless. I learned about their usefulness later on. The child was not left with me for long when I gave birth (Participant #14)

These narratives collectively demonstrate that women reported more positive birth experiences when they were recognized and treated as individuals with unique values, expectations and needs within the maternity care system.

Women's Personal Attributes

The qualitative data also highlighted how women's personal characteristics, coping mechanisms and psychological resources influenced their birth experiences. Several participants reflected on how their internal resources shaped their perception and management of the birth process. One woman highlighted the importance of faith as a coping mechanism:

“My trust in God helped me during my previous traumatic births because I lost a lot of blood but in my last pregnancy I was thinking positive and that helped me” (Participant #238)

Another participant offered a detailed comparison between two contrasting birth experiences, emphasizing how preparation and knowledge significantly transformed her second birth:

“The first delivery I had lasted 24 hours because there was no dilation of the cervix and a caesarean section was performed and what followed was quite traumatic for my mental health as well as physical exhaustion. My second delivery was normal (vbac) and the experience I had was very different - both during and after delivery. There was knowledge on

the topic of childbirth, breathing-positions, support from a childbirth teacher outside the clinic staff for about 6 months before, the constant updating of the status of the delivery and the trust/relationship with the staff and doctor". (Participant #67)

Stress experienced during Labour

Perceived control and pain management emerged as significant factors within women's narratives about stress during labour. Participants frequently mentioned how their sense of control—or lack thereof—over pain relief methods and labor progression influenced their overall experience. Some women described choosing to forego pain relief but subsequently experiencing their births as traumatic due to pain intensity:

I consider both my births traumatic in the sense that I suffered all the pain at every stage until the time of delivery (by choice I did not have an epidural) and while I thought the second birth would not be as painful, I may have given birth from the time they admitted me within 2 hours but during those 2 hours I personally suffered and I would not like to experience it again (Participant # 55)

Another participant similarly described the distress of prolonged labor:

The traumatic event of my birth was the long wait until I dilated... I suffered a lot and was exhausted but I don't regret it because I finally gave birth vaginally (Participant #12)

Beyond physical pain, psychological stress was identified as profoundly impacting birth experiences. One woman explicitly linked premature delivery to psychological distress: "

"I gave birth prematurely because I had a lot of stress. I gave birth in Athalassa hospital because of my mental health problem. The people were good but the stress made the experience traumatic" (Participant #239)

Recommendations for the improvement of birth satisfaction

Participants offered substantive recommendations for enhancing birth satisfaction, focusing primarily on three domains: antenatal education, intrapartum care, and postpartum support. Regarding antenatal education, women emphasized the need for comprehensive information about birth and postpartum experiences:

There should be more information about the whole birth experience and the weeks following the birth for both natural and c-section option (Participant #212)

I missed the care of my health provider, such as explaining the birth, asking if I need epidural, or the midwife to recommend childbirth course or preparation (Participant #229)

Another participant specifically noted insufficient preparation for cesarean birth and its implications:

The caesarean section was one of the most painful experiences of my life. I think I was unprepared. I didn't know what to expect and what I was about to experience. I believe the midwives should train the [postpartum] mother on how to get off the bed and how to use the toilet before the caesarean section. Then I had such negative and bad feelings that I was diagnosed with postpartum depression. I'm still struggling to find some joy in my life. I still think that I pushed myself to breastfeed, to take care of my child and I forgot that first I had to help him recover from the shock of the caesarean section (Participant #151)

As the previous quote suggests, postpartum care is also important in shaping the childbirth experience. Other women commented on the need for community postpartum care, a factor that seems to influence the whole experience of becoming a parent:

I find that women who become mothers for the first time need some guidance and support when they return home because it is new to them to be mothers. I believe it would be good if health professionals such as midwives visit mothers at home and show them how to care for the newborn and how to breastfeed properly. A new mother does not know all this, she learns some things in the maternity hospital but that is not enough. A little help from someone who knows all this would be the shield for the psychological integrity of the new mother and her lifeline in times of despair (Participant #127)

Mental health support was particularly emphasized, with participants noting significant gaps in available services and information regarding perinatal mental health:

More psychological help, breastfeeding help and help at home with the baby (Participant #79)

Free and regular psychological support for the postpartum woman is essential (Participant #158)

Several participants described profound psychological impact of childbirth that persisted into the postpartum period, including emotional distress, and feelings of isolation:

After my first birth [...] I had gone through the so-called "baby blues" which, although I had attended many seminars on pregnancy and birth etc, no one ever mentioned and I didn't even know such a thing existed. I found this out in the process of looking into whether I had

postpartum depression. [...] I would like to invite mental health professionals to do more to "prepare" a pregnant woman for the intense psychological changes she may face after giving birth. It is a very big change, although we think we are ready for what awaits us! And if you know that it is possible to go through something like this, that it happens very often and that it is something that will go away, then maybe women will go through it more calmly and not be so afraid! (Participant #29)

Indeed, for some women the whole experience of giving birth had a detrimental effect on their wellbeing:

I'm not the same person I was. I don't have the same interests, and I don't know when I will feel myself again. When I go to the hospital ward I gave birth in, my heart races (Participant # 15)

I really think, especially in the first weeks, that no one understood me. Also, even now that the baby is 4 months old, my anger and tiredness is translated by those around me very differently from what really causes me these feelings. No one can understand the changes I go through physically and psychologically until today and the main emotion I feel is loneliness, especially in the hours when I am alone and breastfeeding. (Participant #196)

Discussion

This study aimed to explore birth satisfaction among new mothers in Cyprus, using both quantitative and qualitative methods. The quantitative analysis revealed significant associations between birth satisfaction and factors such as age, mode of birth, complications during labor, and the presence of a birth partner. Qualitative insights provided a deeper understanding of these associations, highlighting the importance of personal and systemic factors in shaping childbirth experiences.

Birth satisfaction is a multifactorial concept defined as a mother's retrospective evaluation of the childbirth experience and is often associated with implications for both mothers and children (Sawyer et al. 2013) as it can affect breastfeeding, adaptation to the maternal role, mother-infant bonding, and mental health (Baxter 2020; Hinic 2016; Staneva 2013). Birth satisfaction also serves as a reflection of the available intrapartum care in a given setting. Although a multitude of factors can influence the childbirth experience, the BSS-R along with other data collected, can help identify areas for improvement or issues to be addressed through further research (Martin et al., 2020).

The findings of the present study show two significant associations between birth satisfaction and sociodemographic variables. Our analysis revealed a weak but statistically significant positive correlation between age and women's attributes, with older women reporting higher satisfaction levels than younger women. This finding aligns with previous research by Al Ahmar & Tarraf (2014), who also found that age influences childbirth satisfaction. This finding may suggest that older women are more likely to take a proactive role in pregnancy and labour and therefore experience less anxiety and feelings of "losing control", compared with younger women. Secondly, the analysis showed significant differences in the Stress during Labour subscale between women who had no previous children and women who already had two children, suggesting that prior childbirth experience plays a role in birth satisfaction. . Similar findings have been reported in other studies, with multiparous women reporting higher birth satisfaction than primiparous women (Conesa-Ferrer et al., 2016; Hodnett, 2002; Rijnders et al., 2008; Waldenström et al., 2004). However, these findings do not correspond to Stylianides et al.'s (2016) research in the Greek-Cypriot context, which suggested that marriage and educational status are associated with the perception of childbirth experience and quality of perinatal care.

In terms of obstetric factors, satisfaction levels differed based on the mode of birth, complications for both the mother and the baby and the perception of birth as traumatic. More specifically, there were significant differences in birth satisfaction between women who had an emergency CS, those who had planned CS for medical reasons and those who had a vaginal birth. A significant difference was also found between emergency CS and vaginal birth in the Women's Attributes subscale. This finding aligns with qualitative narratives where women explicitly tied their dissatisfaction to unplanned interventions. For example, one participant described feeling 'compulsorily' subjected to a CS with 'very little information'. In terms of Stress during Labour, statistically significant differences were found between emergency CS and planned CS (either for medical reasons or as a personal choice), as well as vaginal birth. These findings support research indicating that the influence of the mode of birth on women's satisfaction with childbirth remains unclear (Spaich et al., 2013), although there is some evidence that unplanned/emergency CSs is a primary risk factor for lower levels of birth satisfaction (Falk et al., 2019; Konheim-Kalkstein & Miron-Shatz, 2019). The results of the present study suggest that interventions aimed at reducing stress during labor—such as improving pain management and minimizing perceived harm—may have a significant impact on improving birth satisfaction. Similarly, enhancing maternal coping strategies through prenatal education could play a crucial role in fostering a sense of control and agency.

Beyond mode of birth, there were statistically significant differences in birth satisfaction between women who had no complications and those who had experienced complications during labour. These differences were also statistically significant in the Stress during Labour subscale, while no significant differences were found in Quality of Care and Women's Attributes subscales. Significant differences were also found between women whose baby had no complications and those whose baby had either minor complications or major complications. In the Stress during Labour subscale, significant differences were observed between no baby complications and minor complications. It is important to acknowledge here that as the study protocol did not establish predefined criteria, women's perceptions and classification of complications as major or minor were subjective.

As expected, the findings suggest a negative correlation between birth satisfaction (BSS-R Total) and the experience of a traumatic birth, with negative correlations across all three BSS-R subscales. The strongest correlation of a traumatic birth was with Stress during Labor, followed by Women's Attributes and Quality of Care provision. These findings are consistent with Hollins et al's (2011) findings that identifies personal attributes (e.g. ability to cope during labour, feeling in control) and stress experienced during labour and birth as key factors related to childbirth satisfaction. Poor "quality of provider interactions" have also been identified in the literature as a major risk factor for experiencing birth as traumatic (Simpson & Catling, 2016). Women's perceptions of interpersonal difficulties with doctors and midwives significantly impact their birth experience. Even when doctors and midwives perceive a birth as uncomplicated, a woman may still find the experience traumatic if she feels disrespected, ignored, or unsupported (Denis et al., 2010; Ford et al., 2010; Harris & Ayers, 2012).

This resonates with our findings, as women's experiences were significantly influenced by how healthcare professionals engaged with them, reinforcing the critical role of provider attitudes and behaviors in shaping birth experiences. Women who felt heard and involved in decision-making reported more positive experiences, whereas those who felt ignored or dismissed described their experience as disempowering. Our findings highlight the significant role of communication in shaping women's experiences and satisfaction. Many participants emphasized that their ability to voice their needs and concerns during labor directly influenced their experience. Similarly, women in Koliandri et al.'s (2023) study also expressed a desire for more effective communication with healthcare professionals and emphasized the importance of being well-informed to actively participate in decision-making about their pregnancy and childbirth. Enhancing trust and effective

communication between women and healthcare providers is critical in shaping birth experiences. Overall, the findings highlight gaps in antenatal education, fragmented sources of information and the need for healthcare providers to guide women toward reliable resources while fostering shared decision-making.

Statistically significant differences in satisfaction, and more specifically in the Women's Attributes subscale, were also found between those women who had their partner with them during labour and those who had no one. These results align with previous research highlighting the importance of receiving continuous support from a birth partner (Conesa-Ferrer et al., 2016). Furthermore, significant differences were found between women reporting different levels of support from those accompanying them during labour (excluding healthcare professionals). For example, in the Quality of Care subscale there was a significant difference between those women reporting receiving little support and those reporting much support by those present during labour. In Women's Attributes, only the difference between women who reported no support and those who reported much support was significant, while in the subscale Stress during Labour the only statistically significant difference was between those reporting receiving little and those reporting receiving much support.

The current study provides a unique contribution to the field of birth satisfaction by examining the experiences of women in Cyprus, a country where maternity care practices and cultural expectations have been underrepresented in the literature. While previous studies have largely focused on Western European or North American contexts, our findings offer new insights into how systemic factors, such as access to birth support and healthcare provider communication, influence satisfaction levels in a different healthcare setting. Furthermore, our results reinforce existing research on the importance of autonomy and informed decision-making during childbirth while also highlighting potential gaps in the provision of emotional and psychological support.

Strengths and Limitations

The main strengths of this study include the use of a standard protocol with prespecified methods and the non-disclosure of the questionnaire to social media so as to avoid systematic selection error. However, the study presents several limitations that need to be taken into consideration. First, the study utilized a convenience sample, which resulted in the over-representation of privileged populations (i.e. university graduates of average socioeconomic status) and the under-representation of vulnerable populations. The lack of information about non-respondents also deems the sample susceptible to potential biases and therefore claims about generalizability cannot

be made. To address this, future research should adopt strategies to obtain a more representative sample, ensuring diverse participation from various socioeconomic and educational backgrounds.

Another limitation is that the time since birth might be a confounding variable in the assessment of birth satisfaction since the inclusion criteria allowed for women at 2 years postpartum to participate in the study. This could introduce bias in the assessment of birth satisfaction assessments especially since there is still an ongoing controversy within the academic community over the appropriate time point to assess birth satisfaction (Donate-Manzanares et al., 2019; Nakić Radoš et al., 2023). While most studies validating the BSS-R involve women giving birth within a few weeks, Nakić Radoš et al.'s (2023) study with women at one year postpartum indicates a non-significant correlation between BSS-R and time since childbirth. Evidence from longitudinal studies suggests that assessments of birth satisfaction within weeks or months after childbirth may be overly optimistic due to feelings associated with “relief that labor is over” (Waldenström, 2004) and “assuming a new maternal role” (Donate-Manzanares et al., 2019) and that later evaluations might provide more realistic evaluations of the birth experience. Further longitudinal research is necessary to examine the scale's test-retest reliability and stability over time.

The Cronbach's alphas of BSS-R were not excellent, particularly for the BSS-WA (0.62) and BSS-SL (0.60) subscales. As alpha levels are influenced by the number of items, it is not surprising that the two-item BSS-WA performed suboptimally. A higher alpha level, however, was expected for the 4-item BSS-SL, particularly in comparison with Vardavaki et al. (2015) who found satisfactory internal consistency (0.76) for the subscale in the Greek BSS-R scale. The poor but acceptable internal consistency of this particular subscale might be attributed to socio-cultural factors, suggesting further work is necessary for the interpretation of this finding. While the validation of the Greek version of BSS-R in the Greek Cypriot context was beyond the scope of this paper, future research should address whether the scale is an appropriate tool for continuous assessment of birth satisfaction. Researchers, healthcare professionals, policymakers, and other stakeholders could potentially utilize BSS-R to assess and improve the quality of intrapartum care in the Greek Cypriot context.

Implications

The findings have a number of implications for perinatal care in Cyprus that could improve women's experiences. An assessment utilizing the BSS-R could form the basis for the development of national guidelines for quality of care provision, along with recommendations from international

organizations such as WHO. Additionally, the findings of this study could guide the development of context-specific training for maternity healthcare professionals, focusing on addressing women's experiences, concerns, and needs (Thomson et al., 2021). Support from health professionals during labour - in the form of good communication, provision of information, shared decision-making and informed consent, as well as emotional support - is a strong predictor of birth satisfaction (Conesa-Ferrer et al., 2016; Domingues et al., 2004; Hodnett, 2002; Kranenburg et al., 2023).

As highlighted by Hadjigeorgiou et al. (2024), midwives play a crucial role in perinatal education, and a standardized curriculum integrating diverse pedagogical methods is essential for effective childbirth preparation. This aligns with our findings, which suggest that redesigning antenatal education classes to address women's specific needs could enhance birth satisfaction. While further research is needed to map the current situation in the context under investigation, women's accounts show that there are unmet needs in the preparation for labor, birth, and the postpartum period. Specifically, birth preparation can influence both the Women's Attributes subscale and the Stress During Labour subscale of BSS-R (Martin et al., 2020). The literature shows that women who feel well prepared for childbirth and women who feel a sense of control and agency during labour report higher birth satisfaction (Hinic, 2017; Howarth et al., 2011; Miron-Shatz & Konheim-Kalkstein, 2020). Additionally, the bibliography confirms a relationship between expectations and childbirth satisfaction (Christiaens & Bracke, 2007; Hodnett, 2002; Goodman et al., 2004). The ways in which women envision their labour may create a discrepancy between expectations and satisfaction. Future research should address women's antenatal expectations regarding childbirth (Bell & Anderson, 2016). Similarly, the expectations should be taken into consideration at a more practical level, that is, during antenatal education where midwives can provide accurate information, the women's options, as well as discredit popular myths surrounding childbirth. While the available antenatal education classes are currently provided by midwives, who are considered by WHO the most appropriate type of HP to support women and their families throughout the perinatal period (WHO, 1996), policymakers alongside professional bodies of HPs are urged to review the existing provision of services and re-design the classes based on recent research, with a focus on women's best interests. As the study of Conesa-Ferrer et al. (2016) suggests, the humanised model of maternity care, where midwives play the most important role, can result in higher ratings of women's childbirth satisfaction compared with the biomedical model of care. This was also evident in Stylianides et al.'s (2016) study, where women in Cyprus were more satisfied with midwives' services ($\mu=9.03\pm1.45$) compared to OBGYNs' services ($\mu=8.52\pm1.68$).

At the same time, the provision of community midwifery could fill the gap that is observed between women's needs and the provision of mental health education. Beyond the development of perinatal mental health services, regular screening, provision of services, and prevention strategies, midwives could play a key role for psychoeducation. Importantly, the lack of psychoeducation during pregnancy leads many women to feel unprepared for the "baby blues" or other symptomatology that may appear during the perinatal period, including depression and anxiety symptoms. Despite Cyprus being a high income country, the mental health needs of women in the perinatal period remain unmet and this was the case even during the COVID-19 pandemic (Costa et al., 2024). In order to reduce the negative effects of perinatal mental health issues on women and their families, the development of measures in terms of mental healthcare become urgent and imperative.

Conclusion

Birth satisfaction is a complex and multifaceted concept that can be influenced by a wide range of factors before, during, and after childbirth. It is an important aspect of maternal well-being and can have implications for postpartum recovery and bonding with the newborn. This study brought new insights about new mothers' birth satisfaction in Cyprus. The overall picture emerging is that women's birth satisfaction levels in Cyprus can be enhanced by a number of actions, including assessment of birth satisfaction, development of national guidelines for the provision of quality care, re-design of antenatal education, and training of HPs so that they can meet women's needs. Such changes are urgent and necessary, given their effect on women's experiences, and consequently the effects on the child and the rest of the family.

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