



Research Article

Childbirth Experience during COVID-19 Pandemic: A Cross-Sectional Study

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Abstract

Objective: The aim of this study was to assess the impact of the COVID-19 pandemic on women's childbirth experience. It is a significant part of quality care which is affected by various factors. It may result in positive or negative short- and long-term effects on well-being, confidence and life in general. Exceptional circumstances like the COVID-19 pandemic have altered many different aspects of our lives and possibly also women's childbirth experience. **Design:** Single-center cross-sectional cohort study using a modified version of the Childbirth Experience Questionnaire (CEQ) as a validated instrument. **Setting:** Labour ward at the Department for Obstetrics and Gynaecology at the Medical University Graz, Austria. **Sample:** 230 women undergoing labour at the Medical University Graz were included in the study. **Methods:** Women received the CEQ during their stay at the labour ward and were asked to return it upon discharge. **Results:** No major difference in birth experience subscales was found between women giving birth during the COVID-19 pandemic and data collected in different countries in recent years. There was also no statistically significant difference between women having their partner absent or present at birth. **Conclusion:** Despite the COVID-19 pandemic being a time of global crisis, women rated their childbirth experience comparably to prepandemic data emphasizing good obstetric healthcare provided.

Keywords: COVID-19 Pandemic; Childbirth Experience; CEQ

Introduction

The exceptional circumstances of the COVID-19 pandemic made a major impact on health care systems worldwide. In particular obstetric units were challenged with a variety of uncertainties and physicians and midwives faced the task to find new strategies to guide women through the challenging late stages of pregnancy and postpartum care. In contrast/addition to the majority of clinical studies focusing on traditional outcomes such as caesarean delivery rates and perinatal morbidity or mortality, we were interested to evaluate mothers' individual experiences and wellbeing regarding maternity and especially childbirth experience [1].

Women remember a positive or negative childbirth experience their whole lives. It may result in positive or negative short- and long-term effects on well-being, confidence and life

in general. A positive childbirth experience can lead to personal growth, establish self-confidence and deepen self-awareness [2].

Dissatisfaction with the childbirth experience increases the risk for postpartum depression and posttraumatic stress disorder [3,4]. Furthermore, the overall experience of labour affects mother-child attachment, breastfeeding, subsequent abortions and the wish for caesarean section rather than vaginal delivery in following pregnancies [2,5,6]

The experience of labour and childbirth are multidimensional concepts. Major contributing factors are sense of security, perceived control, experienced level of labour pain, personal support, the midwife's care, experiences of earlier deliveries, intrapartum analgesia, provided information and involvement in decision-making. According to previous studies [7,8], a duration of labour of more than 12 hours, administration of oxytocin, unplanned medical intervention and non-elective caesarean section have a negative impact on childbirth experience.

The original childbirth experience questionnaire (CEQ) was developed and validated in Sweden in 2010 [7] measuring four main columns of the childbirth experience: Own capacity, Professional support, Perceived safety and Participation. A discrimination was found using the questionnaire between groups of women who are known to differ in their childbirth experience, i.e., those with a longer duration of labour had a significantly lower score on all scales than those with a shorter duration of labour [5].

Facing the challenges of the COVID-19 pandemic no visitor-access at all was allowed to the labour ward at the University Hospital in Graz, Austria until July 2020, followed by a period with limited access for partners during labour and very restricted access in the post-partum period all.

This unfortunate situation has presented us with an unprecedented opportunity to assess the impact of a worldwide crisis and the partner's absence during labour and early post-partum period on mother's wellbeing and childbirth satisfaction. The aim of our study was to evaluate the childbirth experience under Covid-19-pandemic conditions and to put it into relation to studies performed in a pre-pandemic period.

Methods

For the prospective cohort study performed during the first wave of the COVID-19 pandemic at the University Hospital Graz, Austria, 475 patients were approached in the delivery room after birth of their child and invited to report their childbirth experience by means of a structured questionnaire. The main objective of the project was to assess the impact of partner absence during childbirth as a consequence of the COVID-19 pandemic on the birth experience and to investigate obstetric outcome factors affecting the birth experience, respectively. Inclusion criteria (all women older than 18 years giving birth at $\geq 37+0$ weeks of gestation, good knowledge of the German language) and exclusion criteria (refusal to participate and vital risk to the child) were met by 230 patients who also provided written informed consent.

To measure the birth experience, a German version of the "Childbirth Experience Questionnaire" (CEQ) was applied for the study. [7] Validation of another German version was performed in a the study by Pedersen, Sieprath and Köhler, whose results were very promising. [9] The CEQ2 (1) consists of 25 items that capture four domains of birth experience. These include own capacities (eight items, e.g. "I felt strong during labour and birth"), professional support (five items, e.g. "The midwife conveyed an atmosphere of calm"), perceived safety (six items, e.g. "I have many positive memories from childbirth"), and participation (three items, e.g. "I received the information I needed during labour and birth."). In addition, questions were asked targeting the particular situation due to the coronavirus pandemic using a Visual Analog Scale (VAS, 0-100). The women were asked whether the

partner was missed during birth, whether the partner's absence was experienced as distress and contrarily, whether the presence of the partner during birth was helpful for the woman. A 4-point Likert scale (from strongly disagree (1) to strongly agree (4)) was used as the response format. VAS scores were categorized as in the original version: 0-40 (1), 41-60 (2), 61-80 (3), and 81-100 (4). Items whose response scales pointed in a different direction were re-pooled. As well, sociodemographic information of the women and the presence of their partner at birth were included from the complete questionnaire to characterize the population.

To examine whether there was a difference between the groups with presence and absence of the partner on women's birth experience, we comparatively calculated the means and Standard Deviations (SD) for all four CEQ domains. Consequently, the mean values ranged from one (i.e., good/positive experiences) to four (i.e., bad/negative experiences). The Shapiro-Wilk test revealed that the normal distribution assumption was violated in the values of all domains. Therefore, non-parametric two-sided independent-samples Mann-Whitney-U-tests were used to test whether the group differences were significant.

Obstetric outcome parameters such as parity, gestational age at delivery, mode of delivery (spontaneous vs. vacuum/forceps assisted vaginal vs. cesarean section) onset of labour (spontaneous vs. induced), labour duration (≤ 12 hours vs. >12 hours), oxytocin use, Neonatal Intensive Care Unit (NICU) admission, and increased postpartum hemorrhage were recorded to examine whether these endpoints had an association on the birth experience. Therefore, we calculated the mean and SD in these expression groups for each of the domains. In addition, we also calculated an overall CEQ mean score. To determine which group differences were significant, we again performed the Mann-Whitney-U-test. The significance level was set at five percent level. All analyses were performed using SPSS version 1.0.0.1406.

Translation procedure

There are many tools to measure women's experience of childbirth. We decided to use a psychometric approach implemented by means of a postpartum questionnaire representing a unique tool providing a standardized analysis as well as meaningful validation when comparing results obtained by different studies [1].

The Childbirth Experience Questionnaire (CEQ) was developed by Dencker et al. in 2010 in Swedish and has since been translated to other languages such as English and Spanish [1]. Because of the sudden appearance of COVID-19 and the consecutive shutdown it was of utmost importance to get a hold of a German version of the CEQ as soon as possible. The English version of the questionnaire was translated by two bilingual translators to German, whereby modifications had to be made during translation to maintain substantial and semantic meaning.

Another two bilingual translators who were unaware of the English version were used to perform a backwards translation to English which proved the German version to be appropriate. Due to a shortage of time and (while) being unaware of the duration of the pandemic, we were unable to consult the original authors of the Swedish questionnaire.

Statistical analysis

The planned sample size was 220 women based on the recommended sample size of ten times the number of observed variables, in case of the CEQ 22 items.

A small subgroup of postnatal women, midwives and clinical psychologists were given a German version of the CEQ and asked whether the questions were easy to understand and whether filling out the questionnaire was an acceptable task to them.

Domain	Items
Own capacity	Labour and birth went as I had expected
	I felt strong during labour and birth
	I felt capable during labour and birth
	I was tired during labour and birth
	I felt happy during labour and birth
	I felt that I handled the situation well
	As a whole, how painful did you feel childbirth was?*
	As a whole, how much control did you feel you had during childbirth?*
Professional support	My midwife devoted enough time to me
	My midwife devoted enough time to my partner
	My midwife kept me informed about what was happening during labour and birth
	My midwife understood my needs
	I felt very well cared for by my midwife
Perceived safety	I felt scared during labour and birth
	I have many positive memories from childbirth
	I have many negative memories from childbirth
	Some of my memories from childbirth make me feel depressed
	My impression of the team’s medical skills made me feel secure
	As a whole, how secure did you feel during childbirth?*
Participation	I felt I could have a say whether I could be up and about or lie down
	I felt I could have a say in deciding my birthing position
	I felt I could have a say in the choice of pain relief
* VAS-scale with anchors	

Table 1: Childbirth experience questionnaire (CEQ) domains and included items.

Reliability of the German version of the CEQ was measured using Cronbach’s alpha for the total scale as well as for each of the four subscales reaching >0.70 for all the subscales. Generally, a value of Cronbach’s alpha >0.70 is regarded adequate (as shown in table 2).

Domain	Number of Items	Cronbach's Alpha	Cronbach's Alpha from Walker et al.	Cronbach's Alpha from original Swedish study
Own Capacity	8	0.78	0.79	0.82
Professional Support	5	0.79	0.94	0.88
Perceived Safety	6	0.80	0.83	0.78
Participation	3	0.77	0.72	0.62

Table 2: Cronbach's Alpha for the domains of the CEQ and the overall scale.

As there was no normal distribution of the scale scores, a Mann Whitney U test was used to draw a comparison between subscales.

Results

Table 3 shows the characteristics of the study population. A total of 230 completed questionnaires were included in the final calculation. Mean age was 30.6 years (SD 4.7). In 49 (21.3%) women, the partner was not present in the delivery room at the time of delivery; of these, 11 partners (4.8%) were absent because of strict attendance rules or for personal reasons in the wake of the COVID-19 pandemic. For most women, it was their first birth (the median number of previous births was 1 [min-max 1-7]), and the most common time of delivery was after 40+2 weeks of gestation (min-max 30+0 - 41+5 weeks).

Study population	N=230	
Age, mean (SD)	30.6	(4.7)
Higher education, n (%)	83	(36.1%)
Austrian nationality, n (%)	195	(84.8%)
Austria as country of birth, n (%)	189	(82.2%)
Living with partner, n (%)	219	(95.2%)
No children in household, n (%)	222	(96.5%)
Working before maternity leave, n (%)	166	(72.8%)
Unsatisfactory financial situation, n (%)	68	(29.7%)
Absence of the partner at the birth, n (%)	49	(21.3%)
- COVID 19 related absence, n (%)	11	(4.8%)
Number of pregnancies, median (Min-Max)	1	(1-7)
Gestational week at birth (+ days), median (Min-Max)	40+2	(30+0 – 41+5)
Birth mode		
- spontaneous, n (%)	139	(60.4%)
- operative birth, n (%)	91	(39.6%)
o vaginal surgical delivery, n (%)	23	(10.0%)
o Cesarean section, n(%)	68	(29.6%)
Birth onset		
- spontaneous, n (%)	128	(55.7%)
- induced, n (%)	102	(44.3%)
Birth duration >12 hours, n (%)	8	(3.5%)
Oxytocin use during birth, n (%)	78	(33.9%)
Admission to NICU, n (%)	17	(7.4%)

Increased postpartum bleeding, n (%)	29	(12.6%)
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Table 3: Characteristics of the study population.

Considering the obstetric outcome parameters, spontaneous delivery occurred in 139 (60.4%) patients. The cesarean section frequency within the study population was 68 [29.6%] and the vacuum-assisted vaginal delivery frequency was 23 [10.0%], respectively. These numbers were equal to a matched group of pre-pandemic deliveries (data not shown). The onset of labour was spontaneous in 128 (55.7%) and induced in the remaining 102 (44.3%) patients. In 8 (3.5%) women, labour lasted longer than 12 hours. Labour was augmented by Oxytocin use in 78 (33.9%) deliveries.

As shown in Table 4, in all four CEQ domains, there was no significant difference between the scores of women whose partner was absent or present at birth.

As shown in Table 4, CEQ mean scores were very similar for presence and absence of partner at birth in both studies. Within groups, our results differed significantly from Zhu et al. with respect to all CEQ domains when the partner was present. The mean differences between the results of both studies ranged from 0.22 for own capacity to 0.73 for perceived safety. When the partner was absent, significant differences were observed in the CEQ domains of professional support (CEQ score 3.83 [SD 0.28] vs. 3.01 [0.44] in Zhu et al.) and participation (3.33 [0.84] vs. 2.56 [0.46]). While the difference in CEQ scores for own capacity was small within the groups with and without presence, it deviated downward between 0.64 and 0.77 points in the remaining domains in Zhu et al.

Domains of the birth experience CEQ score	Absence of the partner at the birth		Presence of the partner at birth	
	n (%)	mean (SD)	n (%)	mean (SD)
Own capacity				
- our results (Eisnecker et al.)	42 (18.3%)	2.68 (0.55)	176 (76.5%)	2.50 (0.61)
- Zhu et al. 2019	179 (10.1%)	2.75 (0.49)	1586 (89.9%)	2.89 (0.47)
Professional support				
- our results (Eisnecker et al.)	41 (17.8%)	3.83 (0.28)	174 (75.7%)	3.80 (0.34)
- Zhu et al. 2019	179 (10.1%)	3.01 (0.44)	1586 (89.9%)	3.13 (0.46)
Perceived safety				
- our results (Eisnecker et al.)	45 (19.6%)	3.14 (0.61)	178 (77.4%)	3.16 (0.63)
- Zhu et al. 2019	179 (10.1%)	2.40 (0.52)	1586 (89.9%)	2.43 (0.46)
Participation				
- our results (Eisnecker et al.)	38 (16.5%)	3.33 (0.84)	160 (69.6%)	3.36 (0.76)
- Zhu et al. 2019	179 (10.1%)	2.56 (0.46)	1586 (89.9%)	2.68 (0.48)

Table 4: Mean score in comparison with Zhu et al. (2019) on the four domains of the Childbirth Experience Questionnaire (CEQ), subdivided by the results of partner absence and presence at birth, Legend: bold marked = significant differences with p<0.05.

Mean (SD) Groups	N	Own Capacity	Professional support	Perceived safety	Participation	CEQ overall score
<p>Birth mode</p> <p>- <u>spontaneous delivery</u></p> <ul style="list-style-type: none"> ○ our results (Eisnecker et al.) 139 2.52 (0.57) 3.79 (0.34) 3.21 (0.58) 3.39 (0.71) 3.22 (0.41) ○ Dencker et al. 2010 764 2.67 (0.57) 3.72 (0.47) 3.37 (0.55) 3.63 (0.52) - ○ Soriano-Vidal et al. 2016 182 2.82 (0.57) 3.60 (0.55) 3.14 (0.59) 2.92 (0.82) 3.13 (0.47) ○ Walker et al. 2015 - 2.64 (0.57) 3.55 (0.63) 3.10 (0.65) 3.15 (0.86) 3.11 (0.52) ○ Zhu et al. 2019 1,625 2.89 (0.47) 3.12 (0.46) 2.44 (0.47) 2.67 (0.47) 2.83 (0.34) <p>- <u>operative delivery</u></p> <ul style="list-style-type: none"> ○ our results (Eisnecker et al.) 91 2.54 (0.67) 3.81 (0.36) 3.02 (0.71) 3.25 (0.90) 3.15 (0.49) ○ Dencker et al. 2010 156 2.25 (0.58) 3.55 (0.69) 3.00 (0.65) 3.33 (0.64) - ○ Soriano-Vidal et al. 2016 43 2.65 (0.57) 3.56 (0.50) 2.94 (0.59) 2.71 (0.84) 2.97 (0.47) ○ Walker et al. 2015 - 2.35 (0.53) 3.47 (0.69) 2.76 (0.69) 2.85 (0.73) 2.86 (0.47) ○ Zhu et al. 2019 122 2.70 (0.46) 3.04 (0.47) 2.21 (0.37) 2.64 (0.52) 2.69 (0.32) 						
<p>Birth mode when operative birth</p> <p>- <u>vaginal surgical delivery</u></p> <ul style="list-style-type: none"> ○ our results (Eisnecker et al.) 23 2.54 (0.65) 3.89 (0.28) 3.12 (0.66) 3.65 (0.59) 3.30 (0.40) ○ Boie et al. 2020 280 2.98 (-) 3.84 (-) - 3.19 (-) 3.25 (-) <p>- <u>cesarean section</u></p> <ul style="list-style-type: none"> ○ our results (Eisnecker et al.) 68 2.54 (0.68) 3.78 (0.38) 2.99 (0.73) 3.05 (0.97) 3.10 (0.52) ○ Boie et al. 2020 92 2.47 (-) 3.67 (-) - 2.89 (-) 2.85 (-) 						
<p>Birth onset</p> <p>- <u>spontaneous</u></p> <ul style="list-style-type: none"> ○ our results (Eisnecker et al.) 128 2.57 (0.62) 3.85 (0.27) 3.22 (0.62) 3.44 (0.73) 3.26 (0.42) ○ Soriano-Vidal et al. 2016 175 2.82 (0.57) 3.60 (0.53) 3.15 (0.59) 2.95 (0.82) 3.14 (0.48) <p>- <u>induced</u></p> <ul style="list-style-type: none"> ○ our results (Eisnecker et al.) 102 2.47 (0.58) 3.73 (0.41) 3.03 (0.65) 3.20 (0.83) 3.11 (0.47) ○ Soriano-Vidal et al. 2016 51 2.66 (0.52) 3.58 (0.56) 2.93 (0.57) 2.69 (0.83) 2.96 (0.44) 						

Birth duration						
- <12 hours						
○ our results (Eisnecker et al.)	222	2.54 (0.60)	3.79 (0.35)	3.14 (0.65)	3.32 (0.78)	3.19 (0.45)
○ Dencker et al. 2010	684	2.68 (0.57)	3.73 (0.47)	3.37 (0.55)	3.61 (0.54)	-
○ Soriano-Vidal et al. 2016	166	2.86 (0.56)	3.59 (0.55)	3.14 (0.59)	2.96 (0.83)	3.14 (0.48)
○ Walker et al. 2015	-	2.58 (0.57)	3.51 (0.68)	3.00 (0.68)	3.02 (0.84)	3.02 (0.52)
○ Ghanbari-Homayi et al. 2019	371	2.60 (0.70)	2.80 (0.80)	2.70 (0.80)	2.70 (0.80)	2.70 (0.60)
○ Zhu et al. 2019	1,226	2.91 (0.45)	3.12 (0.45)	2.45 (0.46)	2.68 (0.47)	2.84 (0.33)
○ Boie et al. 2020	275	2.94 (-)	3.84 (-)	-	3.18 (-)	3.22 (-)
- ≥12 hours						
○ our results (Eisnecker et al.)	8	2.06 (0.59)	3.98 (0.07)	3.12 (0.45)	3.92 (0.24)	3.27 (0.24)
○ Dencker et al. 2010	236	2.40 (0.60)	3.59 (0.63)	3.13 (0.64)	3.51 (0.55)	-
○ Soriano-Vidal et al. 2016	59	2.58 (0.55)	3.61 (0.50)	2.97 (0.58)	2.69 (0.81)	2.97 (0.43)
○ Walker et al. 2015	-	2.23 (0.51)	3.55 (0.51)	2.67 (0.68)	2.97 (0.57)	2.86 (0.44)
○ Ghanbari-Homayi et al. 2019	127	2.30 (0.80)	2.60 (0.90)	2.40 (0.90)	2.60 (0.90)	2.40 (0.70)
○ Zhu et al. 2019	512	2.77 (0.51)	3.12 (0.49)	2.38 (0.48)	2.65 (0.49)	2.78 (0.36)
○ Boie et al. 2020	102	2.62 (-)	3.72 (-)	-	2.97 (-)	2.95 (-)
Oxytocin use during birth						
- no						
○ our results (Eisnecker et al.)	144	2.58 (0.62)	3.78 (0.37)	3.16 (0.67)	3.22 (0.85)	3.18 (0.48)
○ Dencker et al. 2010	303	2.88 (0.53)	3.75 (0.44)	3.53 (0.47)	3.69 (0.47)	-
○ Walker et al. 2015	-	2.65 (0.56)	3.49 (0.64)	3.12 (0.60)	3.02 (0.83)	3.07 (0.49)
○ Ghanbari-Homayi et al. 2019	169	2.50 (0.70)	2.70 (0.80)	2.60 (0.80)	2.70 (0.70)	2.60 (0.60)
- yes						
○ our results (Eisnecker et al.)	78	2.42 (0.56)	3.83 (0.30)	3.09 (0.59)	3.54 (0.59)	3.21 (0.38)
○ Dencker et al. 2010	617	2.48 (0.58)	3.67 (0.55)	3.20 (0.60)	3.53 (0.57)	-
○ Walker et al. 2015	-	2.35 (0.54)	3.53 (0.68)	2.74 (0.72)	2.98 (0.78)	2.90 (0.51)
○ Ghanbari-Homayi et al. 2019	331	2.50 (0.80)	2.80 (0.90)	2.60 (0.80)	2.60 (0.80)	2.60 (0.70)
Admission to NICU						
- no [our results (Eisnecker et al.)]		2.54 (0.61)	3.80 (0.33)	3.16 (0.64)	3.34 (0.77)	3.21 (0.44)
- yes [our results (Eisnecker et al.)]		2.31 (0.59)	3.73 (0.51)	2.82 (0.61)	3.11 (0.89)	2.99 (0.51)

Table 5: CEQ total and domain scores by different medical factor groups compared with international study results. Legend: bold marked = significant differences with p-value <0.05.

Looking first at our results of obstetric outcome parameters on the domains and the overall CEQ score in Table 5, there was a significant difference for duration of labour longer than 12 hours based on own capacity. Of note, the mean CEQ score for birth durations ≤12 hours was higher at 2.54 (SD 0.60) than for >12 hours at 2.06 (SD 0.59). The highest CEQ scores were observed for professional support, which was significantly different for operative vaginal birth compared with cesarean birth (3.89 [SD 0.28] vs 3.78 [SD 0.38]). When comparing spontaneous versus induced onset of labour, there was a significant difference in CEQ scores for perceived safety (spontaneous 3.22 [SD 0.62] vs. induced 3.03 [SD 0.65]). There was also a significant difference in the same domain for whether a newborn had to be admitted to the NICU. Here, the mean score for perceived safety without intensive care was higher at 3.16 (SD 0.64) than with NICU admission at 2.82 (SD 0.61), respectively.

We observed significant differences among the obstetric outcome parameters in relation to participation. The largest differences were found for mode of delivery (operative vaginal delivery 3.65 [SD 0.59] vs cesarean delivery 3.05 [SD 0.97]) and duration of

delivery (≤ 12 hours 3.32 [SD 0.78] vs > 12 hours 3.92 [SD 0.24]). Similarly, there was a significant difference in whether labour was either spontaneous (mean participation score 3.44 [SD 0.73]) or induced (3.20 [SD 0.83]). Administration of oxytocin was related to participation and was associated with a higher CEQ score (with oxytocin administration, 3.54 [SD 0.59] vs. without, 3.22 [SD 0.85]). CEQ total scores averaged from all domains differed significantly if the birth was spontaneous (3.26 [SD 0.42]) or induced (3.11 [SD 0.47]), and if there was admission to the NICU (with admission, 2.99 [SD 0.51] vs. without admission, 3.21 [SD 0.44]).

Table 5 is not only showing our results but also includes a comparison to international studies. Most of the CEQ scores in the pre-pandemic studies were consistent with ours. The differences ranged from 0.02 to 0.71 points. However, there were partially different results regarding the significance of measured group parameters. In contrast to our CEQ score, differences between modes of delivery with respect to own capacity were significant in the studies by Dencker et al, Walker et al, and Zhu et al. The study by Boie et al. found a significant difference in the same domain for the types of operative deliveries. The studies by Dencker et al. and Walker et al. additionally reported a group effect for the use of oxytocin. Consistent with our results, the difference between duration of labour was significant in all six studies.

Unlike our results, the study by Decker et al found a significant difference in mode of delivery, oxytocin use and duration of labour in the domain of professional support. The group difference in duration of labour was also significant in the study by Boie et al. and – consistent with our results - they also observed a difference between vaginal and cesarean delivery.

Contrary to our results, all prepandemic studies showed differences in mode of delivery and duration of labour in the domain of perceived safety. Similarly, the results of the studies by Dencker et al. and Walker et al. recorded a measurable difference in the oxytocin group. Soriano-Vidal et al. supported our finding that there was a difference between spontaneous onset of labour and induction of labour, respectively.

In contrast to our results in participation, Dencker et al. and Walker et al. found differences between modes of delivery. Similar to our findings, Boie et al. also found a difference in operative deliveries, and Dencker et al. also noted a difference in oxytocin use and duration of labour (as did Soriano-Vidal et al.).

When the CEQ overall score was considered, differences were significant in almost all comparative studies (except for

oxytocin use) and almost all groups (except for the operative mode of delivery). A significant group comparison on the overall score in our data was found along with the study by Soriano-Vidal et al. regarding birth onset.

Discussion

To the best of our knowledge this is the first study evaluating Childbirth Experience during the COVID-19 pandemic. Overall, we could not show a major impairment in Childbirth Experience comparing to “pre-pandemic” data. Remarkably, professional support, perceived safety and participation were overall rated higher in our study population.

When the developers of the CEQ tested its validity using the method of known-groups validation they found that women with longer lasting labour, oxytocin augmentation and operative delivery had significantly lower scores for all subscales of the CEQ [7]. Our study during the COVID-19 pandemic failed to show statistically significant differences in the subscales professional support and perceived safety for labour duration lasting shorter or longer than 12 hours and, in the subscales own capacity, professional support and participation for spontaneous vs. operative delivery and also in the subscales professional support and perceived safety for oxytocin augmentation or no oxytocin augmentation. These results are rather similar to those of Walker et al. from the UK [5].

This study offers an adaptation of the Childbirth Experience Questionnaire (CEQ) in German language. In order to establish and enhance maternity health services, mothers’ experiences, views and also fears and expectations should be considered [1,10-12]. Using instruments such as the CEQ enables health care services to tailor women’s care to their needs and circumstances [1]. Despite the study being conducted during a very precarious period of time, we were able to achieve a study accrual of 230 completed questionnaires meeting the minimal calculated sample size.

The translation process was conducted systematically and properly despite inherent pressure of time using two forward and two backward translations by English and German native-speakers.

Women giving birth in Austria during the COVID-19 pandemic rated their own capacity lower than populations before this time of global insecurity reflecting very well the population’s general air of uncertainty. Nevertheless, as shown in figure 1, women answered questions in the context of participation, perceived safety and especially professional support rather high, thereby putting an emphasis on the good work health care personnel at the obstetrics ward has been providing even in times of a worldwide crisis [13].

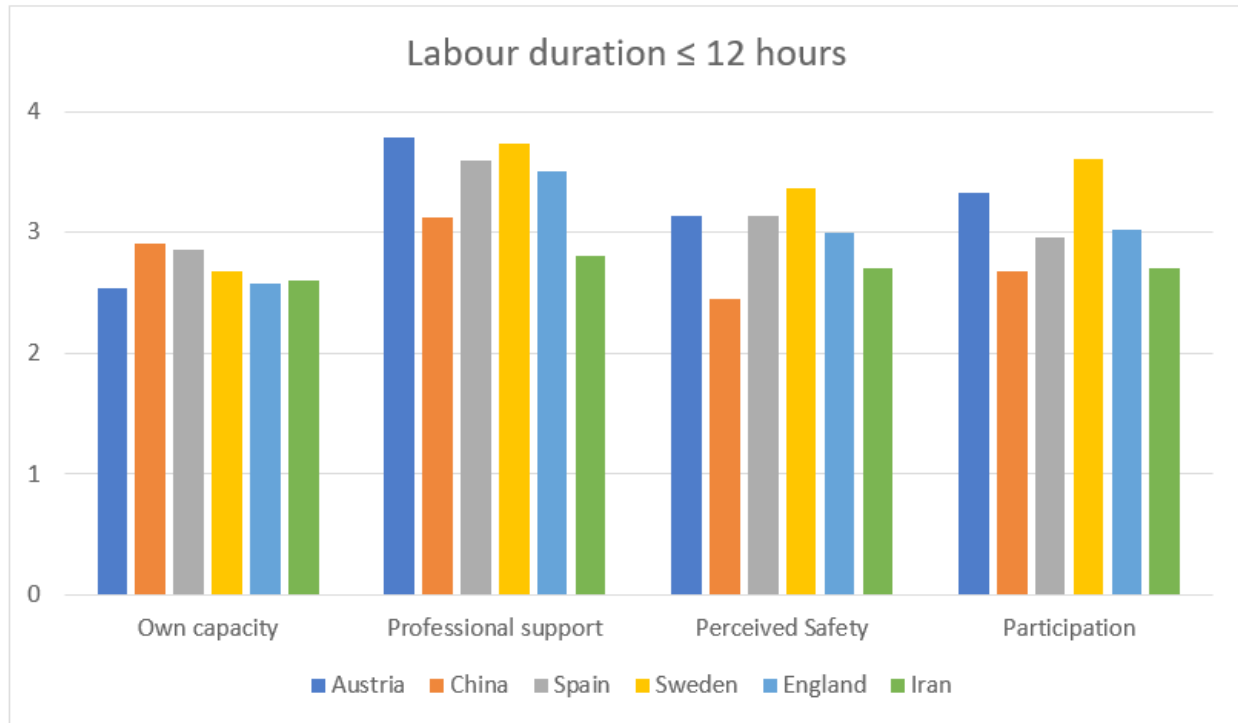


Figure 1: Comparison of subscale results for labour duration ≤ 12 hours.

Conclusions

This study offers an insight into women's experience of labour using a German version of the CEQ. As the CEQ has not been previously used in German, comparison of the subscales could only be made with data retrieved internationally and before the pandemic. Conducting another study in Austria after the pandemic should be considered using a validated German version of the CEQ.

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Contribution to Authorship

K.E.: Study design, Ethics Approval, handing out and collecting questionnaires, analyzing results, writing up the paper.

N.T.: Data collection, proof-reading.

H.S.: Entering data of questionnaires into SPSS-file.

E.G.: Planning of the study, introduction of the CEQ as a validated instrument to be used in this study.

W.S.: Conception of the study, analyzing results, proof-reading and mentorship.

Details of Ethics Approval

The study was approved by the local ethics committee in Graz, Austria on 21st April 2020 (reference number 32-356 ex 19/20).

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Consent to participate: Informed consent was obtained from all individual participants included in the study.

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