

Fear of Childbirth in Chinese Pregnant Women and Their Preferred Mode of Delivery: Validation Study of the Chinese Version of Wijma Delivery Expectancy/experience Questionnaire Version A

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Research article

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Abstract

Background

Fear of childbirth causes significant distress and impact on women's wellbeing. It also contributes to the rising trend of non-medically indicated Caesarean sections worldwide. The Wijma Delivery Expectancy/Experience Questionnaire (Version A) (W-DEQ-A) is a comprehensive instrument for the assessment of fear of childbirth among antenatal women.

Methods

Hong Kong Chinese women at the antenatal booking clinic completed the translated questionnaire, Edinburgh Postpartum Depression Scale, State-trait Anxiety Inventory and indicated their preferred mode of delivery. The validity and reliability of the translated questionnaire were analysed using Cronbach's alpha coefficient and intraclass correlation coefficient respectively. The subscales of the questionnaire were determined using exploratory factor analysis. The relationship between demographic data, preferred mode of delivery and the W-DEQ-A score were analysed using student's t test, Mann-Whitney test or Pearson's correlation.

Results

One hundred and fifty women completed the study. The Cronbach's alpha coefficient and test-retest reliability of the Chinese version were 0.907 and 0.867 respectively. Convergent validity was demonstrated with other psychological measures at expected levels. The mean W-DEQ-A score among the Hong Kong Chinese population is 65 out of 165, which is negatively correlated with gravidity, parity and partner support. Using a standard cut-off of 85, 11.3% women were found to suffer from fear of childbirth and it is associated with a history of psychiatric history. 72% and 22.7% women preferred vaginal delivery and Caesarean section respectively. Nulliparous women who preferred a vaginal delivery have a significantly lower score than those who preferred a Caesarean section, with mean (SD) W-DEQ-A scores of 67.1 (14.8) compared to 75.9 (15.9) ($p = 0.036$).

Conclusion

The Chinese version of Wijma Delivery Expectancy/Experience Questionnaire (Version A) is a reliable and valid instrument to measure antenatal fear of childbirth among Chinese women. Clinicians can use this measure to assess the severity of women's fear over the course of their pregnancy, and to monitor the success of any medical or psychological interventions for women with fear of childbirth in the future.

Background

Globally, the rate of Caesarean section is increasing in both developed and developing countries. In a secondary analysis of the two World Health Organization multi-country surveys, a rising trend of Caesarean section rates up to an overall of 31.2% was noted (1), even though Caesarean section rates above 10-15% are known to not be associated with reductions in maternal and neonatal mortality rates (2). Caesarean section can be associated with short and long term complications for the women and their children(3). Non-medically indicated Caesarean sections, i.e. for social reasons, maternal request or maternal anxiety, have been viewed as one of the top contributory factors for the high rates of Caesarean sections at term in China (4), where the rate of Caesarean section rates is increasing by 1.0% annually (1). This is also a serious problem in Hong Kong, where the rate of Caesarean section for social reasons have increased from 9% to 15.1% between 2004 and 2014 (5). In an analysis of 1302 nulliparous women who wished to undergo a Caesarean section, fear of childbirth (FOC) is the only statistically significant predictor for women's wish on multivariable analysis (6). Therefore, FOC could be the root cause for the increased Caesarean delivery rate(3).

Childbirth is a common and normal physiological phenomenon, but can imaginably evoke a wide spectrum of positive and negative emotions(7). Because of the likelihood of pain and possible problems that may arise during labour and delivery, FOC is common among expectant mothers. Up to 20% of women experience some degree of FOC (8), though the rate is known to vary geographically.

FOC deserves attention as it can be disabling, by affecting the women's personal and social relationships, occupation (9) and overall quality of life(10). FOC can intensify labour pain (11) and result in a prolonged labour duration with a lengthier active labour(12, 13). Even after the delivery, FOC can lead to postpartum depression or anxiety (14), impair the mother-infant attachment (13) and hinder the sexual interaction or desire with their partners(15, 16). Women with FOC are also found to have a longer interval to their subsequent pregnancy, and a higher likelihood of undergoing a subsequent Caesarean section (17).

Few studies have been conducted among the Chinese population, but preliminary evidence shows that even women regarded as having a "low risk" pregnancy commonly exhibit FOC manifestations. However, different instruments were used in the assessment of FOC with no or arbitrary cut-off values taken, rendering standardised comparison with other cohorts difficult or impossible. (18, 19) Nonetheless, Chinese women who have FOC should also have similar distress and impact on their quality of life.

Of the variety of questionnaires available to evaluate FOC, The Wijma Delivery Expectancy/Experience questionnaire (W-DEQ) (20) is considered gold standard and is most often adopted. (21-23). It is a comprehensive self-report instrument for assessment of the severity of FOC in terms of the women's cognitive appraisal of delivery. W-DEQ is a reliable, valid and condition-specific instrument for women with FOC. W-DEQ has been proven to be internally consistent and reproducible. (24) Versions A and B of the W-DEQ (W-DEQ-A and W-DEQ-B) are designed to measure their antenatal expectations and their experience of fear during childbirth respectively. It has 33 items in total, with a scoring system ranging from 0 to 165. A higher score indicates a greater level of fear. A score ≥ 85 indicates FOC, whereas a

score of ≥ 100 indicates severe FOC(25, 26). The continuous scale is also helpful in measuring an individual's level of fear over time.

Among Chinese, the lack of such scales has led to insufficient knowledge on the psychological aspects of childbirth and the clinical impact from FOC. A Chinese version of W-DEQ-A has yet been available, and if developed, it can act as an invaluable instrument for Chinese speaking individuals worldwide. Therefore, the aim of this study is to translate and validate the W-DEQ-A in Hong Kong Chinese women. This would provide a standard and reproducible tool, whilst minimizing the obstetrician's factor in varying the assessment. Furthermore, a validated questionnaire for FOC would also later serve as an objective instrument when different antenatal interventions for FOC requires evaluation.

Methods

Translation process

Written approval to use and translate the W-DEQ-A was obtained from the original author.

The W-DEQ-A was independently evaluated by two bilingual obstetrics researchers, with all items deemed appropriate. Forward translation of the W-DEQ-A to Chinese was then performed separately. The two translated questionnaires were reviewed in a meeting, and a single version was reached after going through items of inconsistency. Back-translation was performed by another bilingual professional who had no access to the original questionnaire. The original and back-translated versions were compared for any issues regarding accuracy and understanding in the Chinese cultural context by another researcher. A panel consisting of the researchers was held to review and settle on the finalised Chinese version.

After ensuring that there were no major discrepancies, the questionnaire was then distributed to a pilot group of 20 women at the obstetric ward for feedback. The group found the questionnaire items appropriate, and they were able to comprehend and fill in the translated W-DEQ-A without problems.

Recruitment and study phase

Recruitment of participants occurred between March and June 2020. All Chinese women attending antenatal booking visit at Tsan Yuk hospital in Hong Kong were invited to join the study to validate the W-DEQ-A.

Exclusion criteria included those under 18 years old, those with intellectual or mental impairment making completion of questionnaire challenging, refusal by women, incomplete questionnaires, and women who had a test-retest interval beyond 20 days. Women were recruited by the research team and dedicated research assistants. Written consents were obtained, and all women were given verbal and written explanations.

The state-trait anxiety inventory state (STAI) and Edinburgh postpartum depression scale (EPDS) were used as assessments of the validity of the Chinese version of the W-DEQ-A. Hong Kong Chinese versions

are already available for both tools and validated for use (27, 28).

The STAI consists of 2 subscales with 20 items each on a 4-point Likert scale, which examines 2 dimensions of anxiety, namely state and trait anxiety. It is one of the most frequently utilised self-report measures to assess anxiety during pregnancy (29). It has demonstrated high validity and reliability among Asian countries including Hong Kong (30, 31). The score can range from 20-80 for each subscale, with higher scores corresponding to a higher level of anxiety.

The EPDS is the most widely adopted screening tool for both antenatal and postnatal depression worldwide (29, 32). It consists of 10 self-reported questions, where each item is rated from 0 (normal) to 3 (severe), totalling to a maximum score of 30. It demonstrates satisfactory psychometric properties (28). The Chinese version of EPDS is currently utilised among public hospitals in Hong Kong.

The Chinese versions of the W-DEQ-A, STAI and EPDS were distributed for completion by participating women. Basic demographics and the preferred mode of delivery in their current pregnancy were collected. They were required to fill in the same questionnaires via an online platform about 2 weeks after initial completion to establish test-retest reliability.

Basic demographics including age, educational and marital status, past psychiatric history and social history, were obtained from their medical records. Women who had stable antenatal course before the repeat test were used in the analysis of the test-retest reliability. Those who had received psychiatric interventions in between were excluded from the test-retest reliability analysis.

Statistical analysis and sample size calculation

The subject-to-item ratio of any measurement scale was suggested to be 5:1 (33, 34). As there were 33 items in W-DEQ-A, a sample size of 165 (33×5) was required to fulfil the criteria. A sample size of 165 pregnant women would be sufficient to fulfil the aforementioned criteria and to assess the correlation of the other questionnaires with the W-DEQ-A.

Statistical analysis was performed by using SPSS Statistics (Version 26.0. Armonk, NY: IBM Corp). W-DEQ-A score ≥ 85 at their first visit was defined as women having FOC, while score of ≥ 100 indicated severe FOC. Data were presented as mean and standard deviation (SD) for continuous data or n and percentage for categorical data. Differences according to demographic or obstetric characteristics were analysed by student's t test or Mann-Whitney test for continuous data and chi-square test for categorical data. Exploratory factor analysis was conducted to analyse the factor validity. Principal component analysis with varimax rotation was performed on 33 items, and the number of factors were defined by the use of scree plots.

Internal consistency of W-DEQ-A and its subscales was assessed using Cronbach's alpha test, and the scores from their first visit was used. A Cronbach's alpha coefficient of >0.7 was considered as adequate internal consistency (35). The test-retest reliability was assessed by Intraclass Correlation Coefficient (ICC). An ICC value of 0.4 or less was considered as poor to fair agreement, 0.41 to 0.6 as moderate

agreement, 0.61 to 0.8 as good agreement and 0.81-1.0 as excellent agreement (36). The convergent validity of W-DEQ-A was estimated by Pearson's correlation with STAI and EPDS. A p value <0.05 was considered statistically significant.

Results

Demographics and patient characteristics

A total of 301 pregnant women were invited into this study. One woman declined to join, while 121 had not completed the second set of questionnaires. The remaining 179 women filled in the re-test questionnaire online. The interval between the first and second test ranged from 14-42 days. Eight women were excluded from the study as the time gap between the test and retest was beyond 20 days. Twenty-one women were further excluded from the study due to incomplete questionnaires. Upon review of all medical records, none were noted to have circumstantial changes or have received psychiatric interventions. 150 women were finally included in the study and had their results analysed (Figure 1). There were no significant differences in terms of demographic or obstetric characteristics (Supplementary table 1) and the W-DEQ-A scores between those who were excluded and included in this study; the mean W-DEQ-A scores were 66.4 (SD 17.43) and 65.0 (SD 18.6) respectively ($p=0.537$).

Table 1 showed the demographic data of women with and without FOC, using W-DEQ-A score of 85 as cut off. All participants were of Chinese ethnicity with a mean age of 32.8 (SD 3.8, range 24-45). The mean gestational age at recruitment was 13.6 weeks. 88(58.7%) women were nulliparous.

Overall, 108 (72%) intended to deliver via vaginal route, while 34 (22.8%) preferred to have a Caesarean section for delivery. Eight (5.3%) women remained undecided on their preferred mode of delivery. Among the 88 nulliparous women, in particular, 63 (71.6%) and 18 (20.5%) preferred vaginal delivery and Caesarean delivery respectively. 7 (7.9%) preferred not to say. For multiparous women, 45 (72.6%) preferred vaginal delivery, 16 (25.8%) preferred Caesarean section, and 1 (1.6%) had not decided yet.

W-DEQ-A scores

The participants had an average W-DEQ-A score of 65.0 (SD 18.6). 17 (11.3%) were found to have FOC using the cut-off of ≥ 85 . Women with FOC were found to be significantly associated with a history of psychiatric disorder. Other demographics and their intended mode of delivery were not associated with FOC (Table 1).

Table 2 showed the mean W-DEQ-A scores according to various demographic and obstetric characteristics. Nulliparity, primigravida, and insufficient partner support were significantly associated with a higher W-DEQ-A score ($p<0.05$) (Table 2).

Concerning the relationship between FOC and the preferred mode of delivery, women who preferred vaginal delivery tended to have lower W-DEQ-A score, although it was not statistically significant. However, among nulliparous women specifically, those who preferred a vaginal delivery had a

significantly lower score than those who preferred Caesarean section, with mean (SD) W-DEQ-A scores of 67.1 (14.8) compared to 75.9 (15.9) ($p = 0.036$).

Exploratory factor analysis

32 of the translated W-DEQ-A items was further divided into 4 factors based on the exploratory factor analysis results (Table 3). The factors were extracted after visual assessment of the scree plot. Together these 4 factors would explain a cumulative variance of 51.2%. The 4 factors were defined as sense of isolation, moment of birth, negative emotion, and lack of positive self-evaluation, which was similar to previous studies. Question 26 ("allow my body to take total control") was removed from the factor analysis, as its factor loading was less than 0.3.

Reliability

The internal consistency and test-retest reliability were computed (Table 4). The Cronbach's alpha for the total score of W-DEQ-A was 0.907, with the subscales of W-DEQ-A ranging from 0.777-0.828, demonstrating excellent internal consistency. The test-retest reliability of each item and the subscales as reflected by the intraclass correlation coefficient ranged from 0.633 to 0.821. The test-retest reliability of the total score of W-DEQ-A was 0.867, which was an acceptable level.

Convergent validity

The convergent validity was measured by the Pearson's correlation of W-DEQ-A score with STAI-S, STAI-T and EPDS scores, which showed a positive correlation with the total W-DEQ-A score (Table 5). The Pearson's r values for STAI-S, STAI-T and EPDS were 0.583, 0.608 and 0.459 respectively, indicating that the higher the score of W-DEQ-A, the more severe the symptoms of anxiety and depression. Significant association was found between the total score and scores of each W-DEQ-A subscale with STAI-S, STAI-T and EPDS ($p < 0.01$).

Discussion

FOC has been gaining increasing attention in the recent decade, particularly among Western countries. Due to the potential detrimental impact on the women's life, it is necessary to identify pregnant women with FOC in order to design interventions to improve their childbirth experience. Specific instruments should be used, which would be crucial to better understand and measure FOC, and to fully assess its impact on women. Fear-avoidance beliefs and behaviour can then potentially be modified; recent studies have shown that antenatal education and counselling may be helpful in reducing FOC and is associated with a higher rate of vaginal delivery (37). W-DEQ-A enables a more detailed assessment of the severity and specific concerns related to antenatal FOC. The differences in language, culture and religious practices may affect the use of such instruments, thus necessitating adjustments and validation. Our current study demonstrates that the Chinese version of W-DEQ-A is reliable for use in pregnant women.

An exploratory factor analysis was performed to test the construct validity, which displayed satisfactory factor loadings for all except one item (question 26). Question 26 was excluded due to low factor loading, in order to achieve a satisfactory solution. This is one of the frequently removed items from the W-DEQ-A during factor analysis(38, 39). Similar to prior studies, our translated version also demonstrates four dimensions (39, 40).

Our studydemonstrates comparable psychometric properties to other translated versions of W-DEQ-A. A high internal consistency is seen, comparable to the Cronbach's alpha of 0.93 in the original W-DEQ-A. Given the similar internal reliability estimate toothertranslated versions of W-DEQ-A, our study gives further support for a consistent reliability of this instrument across various languages and cultures(41, 42).

A 2-week interval was adopted between the two tests, allowing up to a delay of 6 days. This is an appropriate time interval to assess test-retest reliability, which is short enough to prevent circumstantial changes over the course of the pregnancy, but long enough to prevent recall of answers from memory. ICC values are interpreted as excellent when exceeding 0.81(36), thus confirming a good test-retest reliability of our translated W-DEQ-A.

The validity of this translated questionnaire is supported by a positive correlation with STAI-S, STAI-T and EPDS. There is a knownsignificantassociation between FOC and anxiety (43)or depression(8). Despite being classified under anxiety disorders in pregnancy (44), FOC is known to be distinct from anxiety in terms of its neurological mechanism, thus should be considered separately (45). The moderate correlations between W-DEQ-A and these assessments echo this finding, and suggestthat women with FOC may not necessarily be anxious or depressed.

Our results also paint a preliminary picture on the condition of FOC in expectant mothers in Hong Kong. In this study population, 11.3% women were found to have FOC, which is similar in incidence to other countries(8). W-DEQ-A scores were found to be lower in women with increasing parity in this study, which is in line with other developed countries(46).Prior delivery experience is known to have a significant impact on subsequent amount of fear. It is reasonable that among nulliparous women, the element of uncertainty would increase the fear and anxiety related to childbirth. In our study, up to 20.5%nulliparous women had hoped to have a Caesarean section for delivery. This is found to be much higher than other Western countries such as the United states of America and Norway, where only 3.5% and 3.1% nulliparous women voiced a preference for Caesarean delivery antenatally. (47, 48). In contrast, up to 17% primigravida women in China wished to undergo Caesarean section for childbirth, which is more comparable to the results of our study(49). The apparent differences may be related to the difference in cultural beliefs, clinical practices and government policies(50). Previous studies have shown that Hong Kong Chinese women have a lower perceived level of control during natural labour than women in Western countries(51), which in turn relates to a higher level of maternal anxiety. They also tend to be less confident in their ability to cope with labour pain (52).Our validated Chinese version of W-DEQ-A would definitely serve as a tool to prospectively correlate FOC and the mode of delivery. This in turn helps to

assess interventions aiming to alter their anxiety and fear during pregnancy, especially in the climate of a rising Caesarean section rate in China and Hong Kong. In like manner, our study shows that nulliparous women who had preferred Caesarean delivery share a significantly higher W-DEQ-A score.

Psychosocial factors such as women's perception of partner availability during the course of pregnancy was found to be significantly related to the level of FOC. Culturally, Chinese women has a high expectation on their spouses' emotional support throughout pregnancy and during childbirth (52). Our current study also affirms the negative correlation between partner support and FOC. While studies have shown that partner adjustment and the partner's life satisfaction may influence FOC (53), further research is required to delineate the exact relationship and whether partner involvement in antenatal counselling would be useful to reduce FOC.

Strengths

This is the first Chinese version of W-DEQ-A, which was produced after a rigorous translation process in accordance to recommendations by international organisations (54). Our participants were recruited at the general antenatal booking visit to avoid selection bias. Both nulliparous and multiparous women were included in the study. Going forward, it would be worthwhile to use this questionnaire to assess the FOC in selected populations such as teenage pregnancies, those with more complex medical histories or hospitalised pregnant women.

Limitations

There are limitations to this study. Only two questionnaires were used for analysis of the convergent validity, as there have been limited validated questionnaires available in the Chinese version; nonetheless, both validated questionnaires are widely used in the literature to assess anxiety during pregnancy and our data exhibited good correlation. Secondly, we have not looked into the responsiveness of the study, as there is currently no standardised treatment available to women with FOC in Hong Kong. Further studies may be conducted to test the psychometric properties of this questionnaire pre- and post-interventions. Thirdly, all patients had been recruited at a public hospital in Hong Kong, where Caesarean sections based on maternal request or social reasons are not available. Thus, it is possible that patients with FOC who have decided to have a Caesarean delivery might have opted for private obstetric care instead and would not have been invited to participate in this study. Fourthly, the data available for final analysis did not reach the calculated sample size. We tried to overcome this by recruiting more subjects, but a significant portion of women had not completed the second questionnaire. As our analysis showed good validity and reliability, the final interpretation should not be affected. Finally, while W-DEQ-A is useful for the antenatal assessment of FOC, another assessment tool would be required for FOC post-delivery. A validation study of the Chinese version of W-DEQ-B is currently underway for postpartum individuals.

Conclusion

The Chinese version of W-DEQ-A is a valid and a reliable condition-specific questionnaire for women with fear of childbirth. The mean W-DEQ-A score among the Hong Kong Chinese population is 65 out of 165. 11.3% women were found to have FOC. 72% and 22.7% women preferred vaginal delivery and Caesarean section respectively. Obstetricians should be mindful that expectant mothers, especially nulliparous women, may be troubled or have specific worries relating to the delivery. These concerns should be appropriately dealt with to allow a smooth delivery and transition to motherhood. Particular attention should also be given to their partners in view of the potential impact of partner support on women's FOC. With the availability of this validated Chinese version of W-DEQ-A, clinicians can use this measure to assess the severity of one's FOC over the course of her pregnancy, and to monitor the success of any medical or psychological interventions. It remains hopeful that further research in this area would help to reduce FOC among women worldwide.

List Of Abbreviations

FOC: Fear of childbirth

W-DEQ-A/B:Wijma Delivery Expectancy/Experience questionnaire Version A / Version B

STAI-T/S: State-Trait Anxiety Inventory- Trait / State

EPDS: Edinburgh Postpartum Depression Scale

SD: standard deviation

ICC: Intraclass correlation coefficient

Declaration

Ethics approval and consent to participate – Written informed consent was obtained from all participants. The study has been approved by the Institutional Review Board (IRB) of the Joint the University of Hong Kong-Hospital Authority (Hong Kong West Cluster). (IRB number: UW 20-098).

Consent for publication – not applicable

Availability of data and materials – The authors declare that the data supporting the findings of this study are available within the article. We do not have consent from participants or the Institutional Review Board to share the data collected for the study. Any inquiries can be made to the corresponding author.

Competing interests – The authors declare that there are no competing interests.

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Author's contributions – T.H.T.L. developed the study proposal, managed the research implementation, assisted in data analysis and wrote the manuscript. S.T.K. participated in the development of the study

protocol, participated in research team meetings, and reviewed the manuscript. W.W. participated in the development of the study protocol, analysed the data and reviewed the results of the study. M.T.Y.S. participated in research team meetings, supervised the development of the study, and reviewed the final manuscript. K.W.C. supervised the development of the study protocol, monitored the study progress, reviewed the results and reviewed the final manuscript. All authors have read and approved the manuscript.

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Tables

Table 1. Demographic and clinical characteristics

	Overall (n=150)	No fear of childbirth (n=133)	Fear of childbirth(n=17)	P value
	mean (SD) or n (%)	mean (SD) or n (%)	mean (SD) or n (%)	
Age (year)	32.8 (3.8)	32.7 (3.8)	33.7 (3.9)	0.610
Gestational age (week)	13.6 (1.0)	13.6 (1)	13.5 (0.5)	0.694
Drinking				0.744
· Non-drinker	119 (79.3%)	105 (78.9%)	14 (82.4%)	
· Occasional drinker	31 (20.7%)	28 (21.1%)	3 (17.6%)	
Gravida	2.0 (1.2)	2 (1.2)	1.7 (1)	0.378
Parity	0.6 (1.9)	0.6 (1.9)	0.3 (0.6)	0.350
Primigravida	61 (40.7%)	51 (38.3%)	10 (58.8%)	0.106
Nulliparity	88 (58.7%)	75 (56.4%)	13 (76.5%)	0.113
Psychiatric disorder	11 (7.3%)	7 (5.3%)	4 (23.5%)	0.007
In-vitro fertilization pregnancy	10 (6.7%)	7 (5.3%)	3 (17.6%)	0.054
Previous miscarriage	30 (20%)	29 (21.8%)	1 (5.9%)	0.122
Previous termination of pregnancy	20 (13.3%)	17 (12.8%)	3 (17.6%)	0.578
Education				0.333
· Secondary	51 (34%)	47 (35.3%)	4 (23.5%)	
· Tertiary or higher	99 (66%)	86 (64.7%)	13 (76.5%)	
Family income (Hong Kong dollar)				0.289
· <20,000	24 (16%)	23 (17.3%)	1 (5.9%)	
· 20,000 – 50,000	47 (31.3%)	43 (32.3%)	4 (23.5%)	
· >50,000	75 (50%)	64 (48.1%)	11 (64.7%)	
· unknown	4 (2.7%)	3 (2.3%)	1 (5.9%)	
Marital status				0.494
· Married	142 (94.7%)	127 (95.5%)	15 (88.2%)	
· Single	4 (2.7%)	3 (2.3%)	1 (5.9%)	
· Separated	1 (0.7%)	1 (0.8%)	0 (0%)	

· Engaged	3 (2%)	2 (1.5%)	1 (5.9%)	
Religion				0.058
· None	114 (76.5%)	103 (78%)	11 (64.7%)	
· Buddhism	6 (4%)	6 (4.5%)	0 (0%)	
· Catholicism	7 (4.7%)	7 (5.3%)	0 (0%)	
· Christianity	22 (14.8%)	16 (12.1%)	6 (35.3%)	
Partner support				0.233
· Severely deficient	1 (0.7%)	1 (0.8%)	0 (0%)	
· Deficient	3 (2%)	3 (2.3%)	0 (0%)	
· Acceptable	24 (16%)	19 (14.3%)	5 (29.4%)	
· Sufficient	69 (46%)	60 (45.1%)	9 (52.9%)	
· Very sufficient	49 (32.7%)	47 (35.3%)	2 (11.8%)	
· Unknown	4 (2.7%)	3 (2.3%)	1 (5.9%)	
Preferred delivery mode				0.081
· Vaginal delivery	108 (72%)	100 (75.2%)	8 (47.1%)	
· Caesarean section	34 (22.7%)	28 (21.1%)	6 (35.3%)	
· Undecided	8 (5.3%)	5 (3.8%)	3 (17.6%)	

Table 2. Mean W-DEQ-A scores according to demographic and obstetric characteristics

	Yes	No	P value
	W-DEQ-A Score (SD)	W-DEQ-A Score (SD)	
Primigravida	70.8 (15.1)	61.0 (19.7)	<0.001
Nulliparity	69.5 (15.9)	58.6 (20.4)	<0.001
Psychiatric disorder	74.5 (24)	64.2 (18)	0.080
In-vitro fertilization pregnancy	75.5 (23.4)	64.2 (18.1)	0.065
Previous miscarriage	63.8 (16.9)	65.3 (19.1)	0.688
Previous termination of pregnancy	60.8 (21.4)	65.6 (18.2)	0.281
Tertiary or higher education	66.2 (19.3)	62.6 (17.1)	0.261
Sufficient or very sufficient partner support	63.3 (18.8)	72.4 (15.9)	0.020
Preferred mode of delivery	Vaginal delivery 62.8 (18.3)	Caesarean section 69.9 (18.1)	0.051

Table 3. Exploratory factor analysis of W-DEQ-A

Question number	Item description	Subscale 1	Subscale 2	Subscale 3	Subscale 4
		Sense of isolation	Moment of birth	Negative emotions	Lack of positive self-evaluation
7	Deserted	0.791			
11	Desolate	0.783			
15	Abandoned	0.770			
20	Hopelessness	0.709			
3	Lonely	0.633			
8	Weak	0.568			
13	Glad*	0.564			
18	Happy*	0.500			
27	Lose control	0.451			
2	Frightful	0.442			
1	Fantastic*	0.419			
6	Afraid	0.346			
29	Natural*		0.726		
28	Enjoyable*		0.680		
21	Longing for the child*		0.679		
33	Child will be injured		0.651		
32	Child will die		0.650		
30	As it should be*		0.608		
23	Trust*		0.584		
31	Dangerous		0.425		
12	Tense			0.752	
19	Panic			0.668	
16	Composed*			0.660	
24	Pain			0.539	

17	Relaxed*	0.533
25	Behave extremely badly	0.440
14	Proud*	0.637
9	Safe*	0.621
10	Independent*	0.617
4	Strong*	0.593
5	Confident*	0.588
22	Self-confidence*	0.560

*Reversed item

Table 4. Reliability of W-DEQ-A

	Internal consistency (Cronbach's α reliability)	Test-retest reliability (Intraclass correlation coefficient)
Total	0.907	0.867
Subscale 1: sense of isolation	0.828	0.808
Subscale 2: moment of birth	0.821	0.715
Subscale 3: negative emotions	0.791	0.821
Subscale 4: lack of positive self-evaluation	0.777	0.633

Table 5. The Pearson's correlation between W-DEQ-A and STAI-S, STAI-T and EPDS

	STAI-S	STAI-T	EPDS
Total	0.608	0.583	0.459
Subscale 1: sense of isolation	0.446	0.482	0.325
Subscale 2: moment of birth	0.563	0.519	0.440
Subscale 3: negative emotions	0.440	0.442	0.352
Subscale 4: lack of positive self-evaluation	0.450	0.351	0.313

Figures

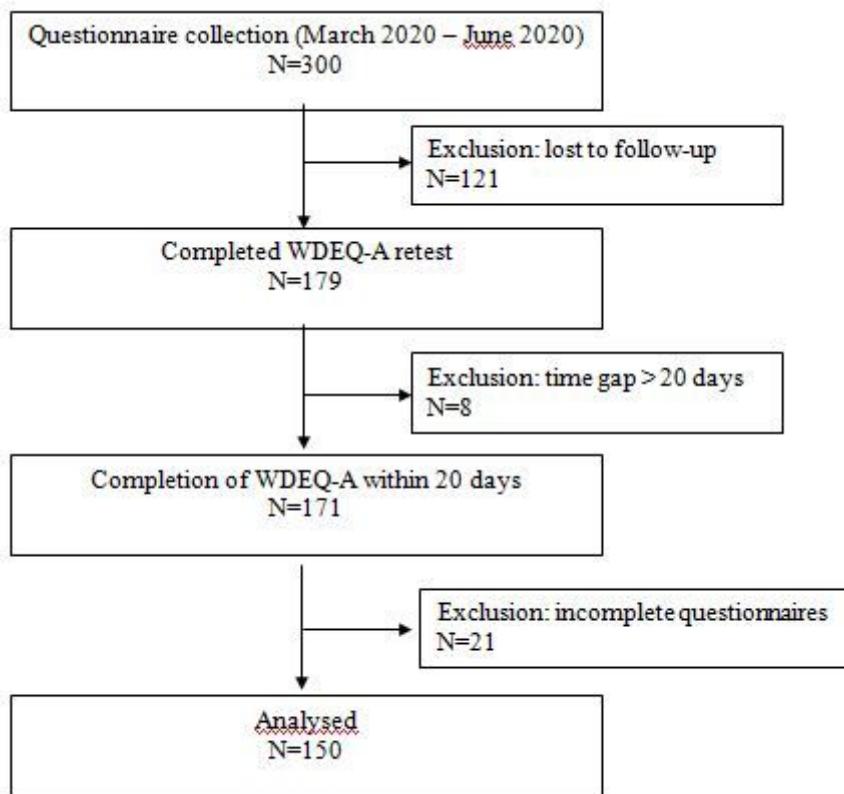


Figure 1

Consort flow diagram

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Supplementarytable1.docx
- WDEQversAEngl.March2005pdf.pdf