

The “Nightmare” of Childbirth: The Prevalence and Predominant Predictor Variables for Tokophobia in American Women of Childbearing Age

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Abstract: Tokophobia (fear of childbirth) may interfere with a woman’s occupational or academic functioning, domestic and social activities, and even relationships. This study introduced the concept of tokophobia into the American landscape, established a baseline prevalence of tokophobia among 174 American women between the ages of 17 and 45 who had not experienced childbirth, and identified tokophobic predictor variables and demographic variables for tokophobia. The study design was non-experimental, quantitative, survey design, using two self-report instruments: The Wijma Delivery Expectancy/Experience Questionnaire, version A and a researcher-designed demographics questionnaire. Results showed 34% of participants suffered severe tokophobia, 91% of predictor variables measured were statistically significant indicators for severe tokophobia, and demographic variables measured were not statistically significant predictors for tokophobia.

Keywords: tokophobia, childbirth, childbirth fear

For over thirty years Scandinavian researchers have studied the prevalence, characteristics, and impact of childbirth fear in Sweden, Finland, and Norway (Areskog, Kjessler, & Uddenberg, 1982; Melender, 2002; Saisto & Halmesmaki, 2003; Zar, Wijma & Wijma 2001). Areskog and colleagues conducted the first studies on fear of childbirth in Sweden in the early 1980s. The study found that 17% of the population suffered moderate fear of childbirth (FOC¹) and 6% suffered severe FOC (Areskog, Kjessler, & Uddenberg, 1981).”

Today, outside of Scandinavia, research on FOC is limited. Not until the introduction of the term *tokophobia* in 2000 by Hofberg and Brockington did research begin to emerge on women’s experience of FOC in other cultures. They defined tokophobia as intense anxiety that leads some women to dread and even avoid childbirth despite desperately wanting a baby (Hofberg and Brockington, 2000). To date, minimal research has been conducted among women who have never given birth to determine their fear of childbirth and practically no research has been performed on the prevalence of FOC among women in the United States.

Hofberg and Brockington (2000) and Hofberg and Ward (2004) classify tokophobia as either primary or secondary, with a third classification of tokophobia as a symptom of depression in pregnancy. Primary tokophobia is a dread of childbirth that pre-dates pregnancy,

¹ As the term tokophobia has only appeared in the literature in the last decade, the term *Fear of Childbirth* (FOC) will be used interchangeably with tokophobia as FOC is the term that has been used in over three decades of research.

that is, it occurs before conception (Hofberg & Brockington, 2000; Hofberg & Ward, 2004). The dread can begin as early as adolescence (Hofberg & Brockington, 2000) or early adulthood (Hofberg & Ward, 2004). These women's sexual relations may be normal, however, they are meticulous in contraception use (Hofberg and Ward, 2004). Pregnancy is avoided to prevent parturition. This fear can be so great that some will abort a desired pregnancy rather than experience childbirth, while others will secure an elective C-section with an obstetrician before conception. Some women never overcome their fears, so they choose to adopt or remain childfree, many women feel shame at their perceived inadequacy, and some women's suffering never ends. They enter menopause having never given birth to a baby and grieve this loss for the remainder of their lives (Hofberg & Ward, 2004).

Secondary tokophobia is a phobic avoidance of childbirth that is secondary to a traumatic obstetric event or due to depressive symptomology during pregnancy. PTSD is increasingly recognized as a consequence of childbirth and is associated with a pathological dread and avoidance of further pregnancy and childbirth experiences. Generally, this succeeds a distressing delivery, such as instrumental or operative delivery due to fetal distress, or having experienced severe pain or perineal damage. Secondary tokophobia may also occur after an obstetrically normal delivery, a miscarriage, a stillbirth, or even the termination of a pregnancy (Hofberg & Ward, 2004). Tokophobia can also be a symptom of prenatal depression as some women develop an irrational fear and avoidance of childbirth as a symptom of depression in the prenatal period. Intrusive beliefs that they are unable to deliver a baby, that they could die during delivery, or that their baby could die are common in these women (Hofberg & Brockington, 2000). Because of this trauma, they generally avoid a subsequent pregnancy, even when a baby is wanted desperately (Hofberg & Brockington, 2000).

The lack of an internationally accepted definition or standard criteria for tokophobia as a diagnosis, due in part to variations in cultural recognition, has prevented international acceptance of childbirth fear as a distinct syndrome (Haines, 2012).

The identification of FOC is often masked by more conventional treatment and diagnoses, such as cesarean section on maternal request, previous cesarean section, or suspected cephalopelvic disproportion (Saisto and Halmesmaki, 2003). Furthermore, the use of general anxiety measuring scales to assess pregnancy fears and worries lacks adequate validity (Huizink, Mulder, Robles de Medina, Visser & Buitelaar, 2004), and may cause FOC to be underestimated and untreated.

Lowe's 2000 study, "Self-efficacy for labor and childbirth fears in nulliparous pregnant women," has been the only American work discovered to date relative to the subject of FOC. Therefore, the findings

from a review of the FOC literature may not apply to American women. This current study was made possible by the development of the Wijma Delivery Expectancy/Experience Questionnaire, Version A (Wijma, Wijma, & Zar, 1998), a 33-item survey designed to measure FOC by means of women's cognitive appraisal of childbirth. Additionally, the use of this tool should contribute to consistent future research of childbirth fear cross-culturally.

Why Focus on Tokophobia?

Tokophobia might interfere with a woman's occupational or academic functioning, domestic and social activities, and even relationships (Hofberg & Ward, 2004; Saisto, 2001; Wijma, 2003). In some women the fear is specific and applies solely to the act of childbirth, while in others FOC exists in parallel with other types of anxiety problems (Wijma, 2003). Women with postpartum PTSD generally have already displayed PTSD-like symptoms during their pregnancy (Wijma, 2003). This finding challenges the DSM V PTSD diagnosis A-criterion, which requires that the event *has been* experienced, witnessed, or confronted (American Psychiatric Association, 2013). As most PTSD studies have been retrospective, researching tokophobia offers the possibility to study potential PTSD subjects before the trauma is experienced.

Characteristics of Women Who Fear Giving Birth

It is normal for women to have some degree of fear or apprehension about pregnancy, labor, delivery, and postpartum adjustment. Women typically report a number of fears of childbirth including pain during labor, their own health complications or death, health complications or death of the baby, painful injections, and losing control during labor (Areskog, Uddenberg, & Kjessler, 1983; Geissbuehler & Eberhard, 2002; Hofberg & Ward, 2004; Saisto, 2001).

Prior psychological morbidity, including general anxiety, low self-esteem, and depression, increase the likelihood of FOC in women (Zar, Wijma, Wijma, 2002). So, too, does partnership dissatisfaction and absence of support (Fisher, Hauck, & Fenwick, 2006). Personality has also been found to play a role in FOC. Women who are anxiety-prone, short-tempered, and less social are more likely to be tokophobic (Ryding, Wirfelt, Wangborg, Sjogren, & Edman, 2007). Women who have a sexual abuse history are also more likely to fear childbirth (Saisto, 2001). Research has shown that nulliparous women are more inclined to suffer severe FOC (Johnson & Slade, 2002), while multiparous women who have experienced a negative or traumatic birth are at equal risk (Saisto

& Halmesmaki, 2003). Age and employment status of women who experience FOC are potential mixed variables (Waldenström, Hildingsson, & Ryding, 2006).

Prevalence

More than 80% of pregnant women experience some FOC (Szeverenyi, Poka, Hetey, & Torok, 1998) and express common concerns about labor and delivery (Saisto & Halmesmäki, 2003). Yet, most commonly reported in Swedish and Finnish studies is a prevalence of fear negatively affecting up to 20 percent of pregnant women (Areskog et al., 1982; Zar et al., 2001). A study from Great Britain (Johnson & Slade, 2002) and another from Australia (Fenwick, Gamble, Nathan, Bayes, & Hauck, 2009) have found FOC prevalence to be higher than that reported in the Nordic countries (Haines, 2012). Women's pregnancy and childbirth fears are multidimensional and complex. Research indicates that there are many different factors that may explain fears associated with childbirth.

Etiology of Tokophobia

As women's empowerment in the West has grown, the cultural and female confidence in their capacity to give birth has declined, accompanied by increased and often debilitating levels of childbirth fear (Eriksson, Westman, & Hamberg, 2006). The research identifies this phenomenon as multifactorial, biological, psychological, socio-demographic, and cultural.

Biological Factors

Fear of pain and self-perceived low pain tolerance are among the most common causes of tokophobia (Saisto & Halmesmaki, 2003) and might drive women to request an elective c-section as pain-avoiding behavior (Melender, 2002).

Another common factor is women's fear of being incapable of giving birth, or the fear of doing something wrong, acting inappropriately during childbirth, or causing harm to the fetus (Melender, 2002). Fear of losing one's mind, losing touch with reality, or experiencing various emotions of hopelessness and helplessness were also common factors in tokophobic women. These fear types might be a reaction to childhood traumatic events such as abuse, abandonment, or neglect, particularly in regards to requests for help, or to negative experiences with health care professionals (Melender, 2002).

Hofberg & Ward's research shows that women who want a baby but suffer from tokophobia are generally unable to understand their own aversion to parturition so they may request termination of their pregnancy (2004).

Psychological Factors

Fear resulting from a sense of powerlessness is a recurrent theme in much of the tokophobia research examined and included: fear of the unknown, fear instilled by hearing horror stories, general fear for the well-being for the baby, fear of pain, fear of losing control and disempowerment, and uniqueness of each birth. Moreover, severe tokophobia is co-morbid with unplanned pregnancy, a history of childhood physical or sexual abuse, and domestic abuse (Horon & Cheng, 2001; Heimstad, Dahloe, Laache, Skogvoll, & Schei, 2006; Hatcher, 2011). Generally, neuroticism, vulnerability, depression, anxiety, and low self-esteem due to previous traumatic events and learned behaviors, were found to be personality variables that significantly correlate with a pregnant woman's tendency to fear childbirth (Waldenstrom et al., 2006).

Sociodemographic Factors

Women with the following socio-demographics tend to be affected by tokophobia: being young, being unemployed, having a low educational level, having a poor social network, expressing partner dissatisfaction, or not living with the father of the fetus (Waldenstrom et al., 2006). Like depression, partnership dissatisfaction has been found to be generational (Saisto, 2001). So too is FOC, a second-generation effect of a mother's own unresolved FOC experience has been identified in their children (Benoit and Parker, 1994). Uddenberg (1974) termed this *psychological heredity*, stating that a woman's reproductive adaptation will be similar to her mother's.

Cultural Factors

The escalation of labor intervention and surgical rates tell women that birth is dangerous, frightening, and needs to be managed medically (Davis-Floyd, 1992). Friends, family, and the media disseminate horror stories about birth to women, individually and collectively (Morris and McInerney, 2010). Further, healthcare professionals provide alarming information regarding clinical and epidemiological prenatal risks. All of this negative information contributes to the reframing of the birth

experience by women as frightening (Ryding, Persson, Onell, & Kvist, 2003).

Fear of becoming a parent is another cultural theme (Saisto and Halmesmaki, 2003). Because of the cultural changes in Western society, the significance and admiration of maternity have decreased at the expense of emancipation, work, and career. Also, the lack of actual models of how to be a mother in the 21st century increases a woman's doubt about her ability to care for a fetus, let alone a baby (Lowe, 2000).

Walsh (2002) calls tokophobia "a socially constructed phenomenon, largely fostered by modern obstetrics' obsession with all that can go wrong in labor" (p. 276). Kitzinger (2006), states that tokophobia is the result of institutionalized violence imposed by a "technocracy [that has] distort[ed] the birth experience" (p. 83). Obstetricians traumatized by their experience of handling labor complications, and their unresolved fears may resonate with and exaggerate women's fears (Bewley & Cockburn, 2002). The confidence level of the healthcare providers is passed on to the pregnant/laboring woman (Melander, 2002).

Prenatal and Perinatal Psychology

Today, none of the literature related to FOC or tokophobia includes study of the psychological and emotional experience of the baby during pregnancy or birth when a mother is riddled with dread and the desire to avoid childbirth.

As early as 1923, Rank stated unequivocally that birth was primal trauma and source material for all neuroses and character disorders (Rank, 1929/1993). Winnicott (1971) built on Rank's work and proposed that false and unhealthy emotional development can begin as early as conception. Fodor affirmed the import of birth on later development and the problems created by maternal prenatal habits (1949). His follower, Mott, introduced the *umbilical affect*, theorizing that the fetus feels what the mother feels (Mott in Moss, 1987). Grof (1985), a peer of Mott, held that the fetus faces birth with pre-labor remembrances that are positive and/or negative. The baby's confusion and bewilderment might be soothed away by the mother when fear is absent and she is well supported, or a sense of abandonment, loneliness, separation anxiety, or even dread might become the outcome for the baby possibly affecting him/her for life (Grof, 1985).

While this theory is not even remotely represented in tokophobia research, maternal and paternal fear of birth has become an accepted reality in the Nordic countries, (Eriksson et al., 2006; Haines, 2012; Saisto, 2001). It is important for tokophobia to be recognized in the United States of America and that consideration be given to the study of its effect on the fetus under its duress.

Methodology

This non-experimental, survey design, quantitative study was conducted using two self-report instruments; the W-DEQ Version A and a general socio-economic questionnaire designed by the researcher. The survey was cross-sectional with data collected during an interval of 12 weeks and commenced after receiving approval from The Chicago School of Professional Psychology (TCSPP) to proceed with data collection. The form of data collection was self-administered Internet survey questionnaires.

Inclusion criteria were: English-speaking, U.S. residency, willing to participate, 18 to 45 years old, not currently pregnant, and never have given birth. To reach the targeted population quickly, non-probability snowball sampling was used.

Three types of statistical analyses were performed to address the research questions of this study. Determination of prevalence of tokophobia in the population surveyed was addressed via a 2X1 contingency table analysis, similar to a chi-square test of independence. Predominate W-DEQ variables and the socio-economic demographics of the population surveyed were addressed via Spearman's rank order correlations and a hierarchical regression respectively. SPSS v22.0 was used for all descriptive and inferential analyses. A 99% level of significance, rather than the conventional 95% level of significance, was set for all inferential tests to control for a possible inflated Type I error rate due to multiple significance testing on the same dataset.

Measures

The participants completed the W-DEQ version A and a demographics questionnaire. The W-DEQ pre-test (version A) was used to determine the participant's level of fear of childbirth (ordinal) and general anxiety (ordinal). The questionnaire measured FOC by asking participants to rate their depth of feeling regarding 33 expectations and experiences about childbirth. Feelings were ranked on a six-point Likert scale with the end points marked "not at all" and "extremely."

The W-DEQ is a reliable tool for identifying, measuring, and predicting the psychological construct of childbirth fear because its construct and predictive validity have been tested in several studies (Fenwick et al., 2009; Wijma et al., 1998; Zar et al., 2001). The W-DEQ also has good psychometric properties, with high internal consistency and split-half reliability (>0.94 before and >0.87 after birth in both nulliparous and parous women; Wijma et al., 1998). To date this is the

only known survey to use W-DEQ as an instrument exclusively on women who have never given birth.

The second measurement tool collected demographic data (nominal) that included age, level of education, marital status, ethnicity, reproductive status (pregnant/not pregnant), and childbirth experience (yes/no).

Research Design

The prevalence of tokophobia in the participants was initially examined through descriptive statistics. The cumulative percentage feature was used to split the results in two categories, participants scoring 84 or lower and 85 or higher to determine the percentage of participants identified as severely tokophobic. A contingency table analysis was then performed to determine whether the difference in the proportions of women in the two groups were significantly differed from 50/50.

The participant ratings for each of the 33 item scores of the W-DEQ instrument were included in a series of Spearman's Rank Order Correlation analyses to address the predominated W-DEQ variables in the survey results. Each of the 33 ordinal level items of the W-DEQ were compared to a dichotomous variable, *Tokophobia*, that was derived from the total score of the W-DEQ instrument. The Tokophobia variable was coded as one if a woman's W-DEQ Total Score was ≥ 85 , and coded as 0 if a woman's W-DEQ Total Score was < 85 . Scores of one on the Tokophobia variable were representative of a woman being tokophobic, therefore, a direct correlation between the Tokophobic variable and an individual W-DEQ item score was indicative of higher values on the individual item being associated with the presence of tokophobia.

A hierarchical multiple regression was performed to address socio-economic demographics of the participants. The model included two steps. The variables representing the socio-economic indicators were entered into the model on the first step. The top five strongly correlated W-DEQ variables were entered into the model on the second step.

Results

The purpose of this quantitative study was to investigate the prevalence of tokophobia in reproductive age American women who have never given birth and to identify the FOC predictor variables, including socio-economic characteristics, common to participants identified as tokophobic.

Population and Demographic Findings

Table 1 presents the frequency and percentages of the demographic variables of the study. The majority of the women (81%) were White/Caucasian and 78% were 25 years of age or older.

Approximately 47% of the women had completed a high school education or less, and approximately 53% had completed a Bachelor's degree or higher. Over half of the women (55%) had never been married and 91% had never been pregnant.

Table 1
Frequencies and Percentages of the Independent Variable of Study (N = 174)

Variable	Frequency	Percent
Age		
18 to 24 years old	38	21.8
25 to 34 years old	77	44.3
35 to 44 years old	59	33.9
Ethnicity/race		
White or Caucasian	140	80.5
Black or African American	18	10.3
American Indian or Alaskan Native	1	0.6
Asian	12	6.9
Native Hawaiian or other Pacific Islander	1	0.6
Other	2	1.1
Highest level of education		
No high school degree	5	2.9
High school degree or GED	76	43.7
Bachelor's degree	66	37.9
Graduate degree	27	15.5
Current marital status		
Never married	95	54.6
Married	67	38.5
Divorced	10	5.7
Widowed	2	1.1
Have been, but not currently pregnant		
Yes	16	9.2
No	158	90.8

W-DEQ Reliability

The Cronbach's alpha coefficient the W-DEQ was $\alpha = .935$ and exceeded the .70 threshold. Therefore, the instrument was assumed reliable with the data collected for this study.

Inferential Analysis

Assumptions. The dataset was investigated for the inferential analysis assumptions of the absence of outliers, normality, linearity, homoscedasticity, and the absence of multicollinearity as related to the dependent variable W-DEQ Total Score.

Prevalence Results

Among the 174 women who participated in the study, 34% ($n = 60$) were identified as having a severe fear of childbirth, that is, their W-DEQ total score was ≥ 85 . Sixty-six percent of the women ($n = 114$) were identified as not having a fear of childbirth, that is, their W-DEQ total score was < 85 .

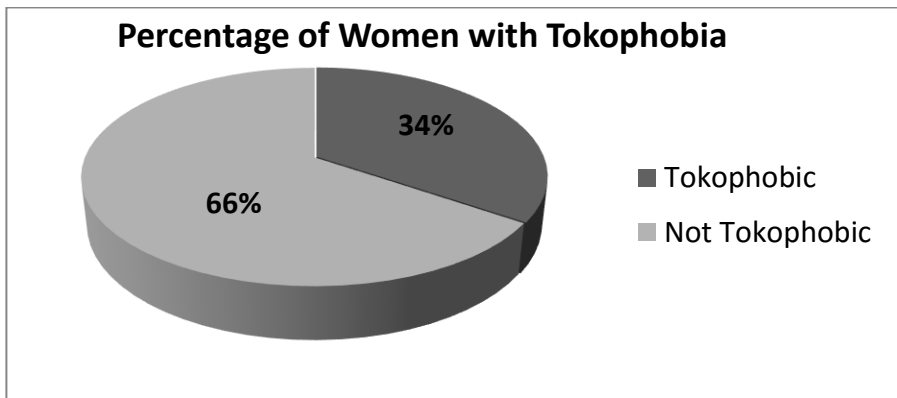


Figure 1. Representation of the percentages of tokophobic and non-tokophobic women.

Predictor Variable Results

Table 2 presents the ranking of the correlation coefficients for the bivariate relationships of each of the 33 W-DEQ items with the Tokophobia variable. The results returned many significant and direct correlations. To preserve brevity in reporting, only the strong correlations (above .50) are reported. Of the 33 items, 30 of the items were significantly correlated to women being tokophobic ($p < .01$).

Table 2
Spearman's Ranking of Correlation Coefficients, in Descending Order, Between Individual W-DEQ Items and Presence of Tokophobia ($N=174$)

Rank	W-DEQ Item #	Statement (represented by a value of 5)	ρ
1	5	During labor and delivery I will feel not at all confident .	.688**

Rank	W-DEQ Item #	Statement (represented by a value of 5)	<i>rho</i>
2	4	During labor and delivery I will feel not at all strong .	.680**
3	18	During labor and delivery I will feel not at all happy .	.616**
4	8*	During labor and delivery I will feel extremely weak .	.606**
5	22	During labor and delivery I will feel no self-confidence at all .	.594**
6	23	During labor and delivery I will feel no trust at all .	.528**
7	14	During labor and delivery I will feel not at all proud .	.512**
8	13	During labor and delivery I will feel not at all glad .	.507**
9	19*	During labor and delivery I will feel extreme panic .	.498**
10	2*	During labor and delivery I will feel extremely frightful .	.490**
11	28	The very moment I delivery the baby it will not be at all enjoyable .	.489**
12	17	During labor and delivery I will feel not at all relaxed .	.484**
13	16	During labor and delivery I will feel not at all composed .	.477**
14	29	The very moment I delivery the baby it will not be at all natural .	.460**
15	10	During labor and delivery I will feel not at all independent .	.454**
16	20*	During labor and delivery I will feel extreme hopelessness .	.452**
17	30	The very moment I delivery the baby it will not at all feel as it should be .	.449**
18	9	During labor and delivery I will feel not at all safe .	.438**
19	1	During labor and delivery I will feel not at all fantastic .	.436**
20	12*	During labor and delivery I will feel extremely tense .	.427**
21	27*	When labor is most intense I think I will totally lose control of myself .	.408**
22	6*	During labor and delivery I will feel extremely afraid .	.391**
23	24*	During labor and delivery I will feel extreme pain .	.381**
24	21	During labor and delivery I will feel no longing for the child at all .	.377**
25	31*	During labor and delivery I will feel extremely dangerous .	.366**
26	25*	When labor is most intense I think I will behave extremely badly .	.352**
27	15*	During labor and delivery I will feel extremely abandoned .	.344**
28	11*	During labor and delivery I will feel extremely desolate .	.310**
29	3*	During labor and delivery I will feel extremely lonely .	.291**
30	7*	During labor and delivery I will feel extremely deserted .	.290**
31	33	During labor and delivery, I fantasize very often that my child will be injured.	.163

Rank	W-DEQ Item #	Statement (represented by a value of 5)	<i>rho</i>
32	32	During labor and delivery, I fantasize very often that my child will die.	.151
33	26	When labor is most intense I think I will not allow my body to take control at all.	.114

Note. *rho* = Spearman's rho.

***p* < .01

A hierarchical multiple regression was performed to address the predominant socio-economic characteristics of the population studied. The dependent variable was the W-DEQ total score. The model included two steps. The variables representing the socio-economic indicators were entered into the model on the first step and included (a) Age, (b) Ethnicity/race, (c) Education level, (d) Current marital status, and (e) ever been pregnant. The top five strongly correlated items from Hypothesis 2, (a) "During labor and delivery I will feel not at all confident" (Q5), (b) "During labor and delivery I will feel not at all strong" (Q4), (c) "During labor and delivery I will feel not at all happy" (Q18), (d) "During labor and delivery I will feel extremely weak" (Q8), and (e) "During labor and delivery I will feel "no self-confidence at all" (Q22), were entered into the model on the second step. Table 3 presents the findings.

Table 3

Hierarchical Multiple Linear Regression Analysis of W-DEQ Scores Regressed on the Socio-Economic Predictor Variables (Step 1) and Five Predominant Tokophobic Predictor Variables (N = 174)

Step/Variable	<i>B</i>	<i>SE B</i>	β	<i>T</i>	<i>P</i>	95% CI for <i>B</i>	
						Lower	Upper
Step 1							
Age = 35 to 44 year old	-3.44	4.22	-0.07	-0.82	.416	-11.78	4.89
Ethnicity = other	3.92	4.86	0.06	0.81	.422	-5.68	13.51
Education level = college degree	-0.43	3.76	-0.01	-0.11	.910	-7.85	7.00
Current marital status = other than "never married"	-3.41	3.99	-0.07	-0.86	.393	-11.28	4.46
Ever been pregnant = yes	-0.75	6.57	-0.01	-0.11	.909	-13.73	12.23
Constant	78.46	3.55	---	---	---	---	---
Model Summary <i>F</i> = 0.64 <i>R</i> ² = .019 <i>Adj. R</i> ² = -.011 <i>Sig.</i> = .673							
Step 2							
Age = 35 to 44 year old	-0.34	1.89	-0.01	-0.18	.858	-4.07	3.40
Ethnicity = other	2.18	2.16	0.04	1.01	.314	-2.08	6.45
Education level = college degree	-0.43	1.64	-0.01	-0.26	.792	-3.67	2.81
Current marital status = other than "never married"	2.05	1.81	0.04	1.14	.258	-1.52	5.62
Ever been pregnant = yes	-2.14	2.86	-0.03	-0.75	.456	-7.78	3.51
Not at all confident	2.84	1.08	0.16	2.63	.009	0.71	4.96
Not at all strong	1.96	1.19	0.11	1.65	.101	-0.39	4.32
Not at all happy	6.46	0.72	0.38	8.91	<.0005	5.02	7.89

Step/Variable	<i>B</i>	<i>SE B</i>	β	<i>T</i>	<i>P</i>	95% CI for <i>B</i>	
						Lower	Upper
Extremely Weak	4.61	0.87	0.25	5.28	<.0005	2.89	6.34
No self-confidence at all	4.61	0.84	0.25	5.47	<.0005	2.95	6.28
Constant	22.54	2.64	---	---	---	---	---
Block Summary R^2							
Change = .801 Sig. R^2							
Change < .0005							
Model Summary $F =$							
74.28 $R^2 = .820$ Adj. $R^2 =$							
.809 Sig. < .0005							

The first step, social economic variables only, suggested that none of the socio-economic variables significantly contributed to the W-DEQ Total Score.

The second step full regression model included the social economic variables from step one and the top five strongly correlated items of the W-DEQ as relates to the Tokophobic variable. Four of the five W-DEQ items were significant for the second step. The squared semi-partial correlation coefficient of Q5, “During labor and delivery I will feel not at all confident” indicated that 1% of the variance in the outcome of W-DEQ total score was uniquely predicted by Q5 and indicated that for each one unit increase in the severity rating of Q5, the W-DEQ Total Score increased by 2.8 points.

The squared semi-partial correlation coefficient of Q18, “During labor and delivery I will feel not at all happy” indicated that 9% of the variance in the outcome of W-DEQ total score was uniquely predicted by Q18 and indicated that for each one unit increase in the severity rating of Q18, the W-DEQ Total Score increased by 6.5 points.

The squared semi-partial correlation coefficient of item Q8, “During labor and delivery I will feel extremely weak” indicated that 3% of the variance in the outcome of W-DEQ Total Score was uniquely predicted by Q8 and indicated that for each one unit increase in Q8, the score for the W-DEQ increased by 4.6 points.

The squared semi-partial correlation coefficient of item Q22, “During labor and delivery I will feel “no self-confidence at all” indicated that 3% of the variance in the outcome of W-DEQ Total Score was uniquely predicted by Q22 and indicated that for each one unit increase in Q22, the W-DEQ Total Score increased by a factor of 4.6 points.

Socio-Economic/Demographic Results

None of the socio-economic factors contributed significantly to the dependent variable of W-DEQ Total Score. There is not sufficient evidence to indicate that there are predominant socio-economic characteristics in reproductive age tokophobic American women who have never given birth.

Limitations

The lack of demographic diversity is recognized as a limitation of the study and as a limitation to generalize the results. The limitations of the W-DEQ test instrument must also be recognized. The instrument was designed for pregnant women. This is the first known survey to use W-DEQ version A as an instrument for a study of women who have never given birth. Furthermore, prior to this study the W-DEQ has never been used in the United States, so the issue of whether the questions were good predictors for FOC in American women is a limitation.

Discussion

The results of this study correlate with the results discovered in international studies meaning a severe tokophobia prevalence rate that is less than than 50%. Nonetheless, a comparison of the results to the international statistics reveals that the 34% prevalence rate of severe tokophobia discovered in this United States study is 4.5% to 24.9% higher than the rate found in previous international research since 2011 (Table 4). The results are clinically significant as one in three of the participants were identified as severely tokophobic; that is, to suffer a condition that is an invisible phenomenon in the U.S. birth landscape today.

Table 4
International FOC prevalence rated in pregnant women

International FOC prevalence rates in pregnant women		
Country	Prevalence	Study
Sweden	10%	(Waldenstrom et al., 2006)
Finland	20%	(Saisto, 2001)
Denmark	11%	(Kjærgaard, Wijma, Dykes, & Alehagen, 2008)
Canada	9.1%	(Spice, Jones, Hadjistavropoulos, Kowalyk, & Stewart, 2009);
Australia	29.5%	(Haines, Pallant & Hildingsson, 2011)

These statistics identify a crisis of confidence among American women. The struggle of the cultural norms of fear and anxiety around childbirth are being made manifest in women's bodies. Social processes are not just defeating American women's belief in their agency to birth naturally; a 33% c-section rate verifies that, but worse is that it appears that women's efficacy to experience pregnancy is also being affected. One in five American women today choose childlessness, rejecting their capacity to give birth.

Additionally, the W-DEQ mean score (mean 76.21) for women in the present study was higher than Johnson & Slade's (2002) study in Great

Britain (mean 65.41) and Fenwick's et al. (2009) Australian study (mean 62.43), all of which were higher than the Ryding, Wijma, Wijma, and Rydstrom (1998) Swedish study (mean 54.1). Beyond the fact that the U.S. mean was higher than all international studies to date, it is important to acknowledge that the U.S. mean score is only 8.79 points below the W-DEQ score indicating *severe* tokophobia, revealing that the populace examined possesses a level of fear only slightly below a phobic level.

It must be mentioned that these international studies were conducted with pregnant women. Therefore, the distinction of this study's exclusion of pregnant women and women who have given birth is important. In 2001, British researchers Hofberg and Brockington asked pregnant women if their FOC predated their conception. From this question, they found that 13% of non-gravid women reported FOC sufficient to postpone or avoid pregnancy. The results of this pioneering research, that 34 percent of women who have never experienced childbirth are severely tokophobic, represents a 21% increase in the primary tokophobia rate. According to Livingston and Cohn's 2010 study, one in five American women ends her childbearing years without having borne a child, compared with one in ten in the 1970s. Thus, it can be speculated that as childbearing decreases, tokophobia is on the increase.

Historically, it has generally been assumed that FOC does not rise to a phobic level until women conceive (Melender, 2002; Otley, 2011; Saisto, 2001), and that pregnant women generally experience hypochondriac fears more commonly than non-pregnant women (Saisto & Halmesmaki, 2003). The findings of this study refutes these current theories that women do not experience tokophobia at severe levels until they are pregnant and confirms researchers identification of voluntary infertility or childlessness (Hofberg & Ward, 2003; Johnson & Slade, 2002; Ryding et al., 2003; Waldenstrom et al., 2006) as an outcome related to primary tokophobia.

Of the 33 variables on the W-DEQ survey, 30 of the variables were significantly correlated to American women with scores indicating severe tokophobia. These results reinforce the conclusion of Lowe's (2000) U.S. study, which found that the American sociocultural climate erodes women's authoritative knowledge regarding pregnancy and childbirth. The *strongest* and most *directly* correlated W-DEQ variables to severely tokophobic American women in this study were: "During labor and delivery I will feel not at all confident," "not at all strong," "not at all happy," "extremely weak," "no self-confidence at all," "no trust at all," "not at all proud," and "not at all glad."

The statistical significance of these variables suggest that American women have lost faith in the American system of birth, in themselves,

and in their ability to give birth even *before* conceiving. As the study participants were childfree, the results support Jones's (2012) conclusion that the loss of normalization around pregnancy and birth discourages women from becoming active participants in pregnancy and birth. The results suggest that future mothers are detaching from childbirth as a natural event and are filled with intense feelings of incompetence. These conclusions support those of Scollato and Lampasona (2013) who view the increase of tokophobia in women as a trend.

The fearful state of the population studied is not only due to our medical system. The results are also a reflection of the state of American culture on the subject of childbirth. The trauma and drama in American storytelling regarding pregnancy and labor is evident in the participants' responses to the W-DEQ version A in general. The results suggest that the American attitude toward pregnancy and childbirth reinforces the notion of labor as risky and an uncontrollable event that requires medical intervention (Scollato & Lampasona, 2013). Today, stories about traumatic childbirth have become part of American women's culture and family systems, and are revenue generators for all types of media. These stories are transmitted from generation to generation, leading women to the conclusion that they are not capable of giving birth. To impact the culture of fear percolating in America on the subject of childbirth, Americans must shift their storytelling to embrace themes that foster a culture that empowers U.S. women to conceive, gestate, and birth.

That 30 of the 33 variables of the W-DEQ were found to be significant in the responses of the women who identified as severely tokophobic in this study confirms that American women align with the conclusions of Saisto and Halmesmaki that the meaning, the importance, and the admiration of motherhood have decreased considerably in Western society (2003). There were 580,000 childless women between the ages of 40-44 in 1976, compared with nearly 1.9 million in 2008 (Livingston & Cohn, 2010). This is an 80% increase in childlessness. This *lack of confidence* in childbirth, the variable with the greatest statistical significance in this survey, can be considered a contributing factor to the trend toward childlessness. The other predominate variables, such as *not feeling happy, proud, or glad* during labor speaks to the lack of real and concrete models that can help women prepare for motherhood in the 21st century. The women who identified as tokophobic in this study can be thought to embody the consequences of the drama and risk depicted around childbirth in American culture and media programming supporting Hill's (2005) conclusions that women trust the information they receive in real people stories and reality television programs rather than documentaries. The statistical significance of 30 out of 33 W-DEQ predictor variables in this study reflects the reproductive disempowerment among American women. It

speaks to women's acceptance of the American establishment's point of view, the denial of their own knowing, and a deference to the way pregnancy and birth are accomplished in the United States of America. The escalation of labor interventions and surgical rates support the belief that pregnancy and birth is dangerous, frightening, and needs to be managed medically (Davis-Floyd, 1992). These realities foster the profound presence of tokophobia in the United States of America as revealed by this study.

Three predictor variables were *not* statistically significant in this study. Two of the variables spoke to the childbirth fantasies of the participants. The third variable that was not statistically significant was: "When labor is most intense I think I will not allow my body to take control at all." This predictor variable was the least fearful to the tokophobic participants surveyed. This may allude to a comprehension, conscious or otherwise, by participants for a need to surrender physically during childbirth, although this possibility is rarely present in today's American birth landscape. Western obstetric practices cause women to experience bodily alienation that is a passive state of being *delivered* in childbirth (Young, 1990). It is important for women to distinguish between the processes of being delivered and giving birth (Welton, 1998). When birth as an active embodied practice is exercised, women's focus is directed to being in the body and on patterns of movement and intentionality such that they engage in the process of active surrender (Young, 1990). So it is not surprising that the loss of mental control during childbirth is a recurrent theme in FOC research.

Loss of control is a theme for five of the predictor variables of statistical significance in this study. Specifically: "During labor and delivery I will feel not at all composed" and "not at all independent." "The very moment I deliver the baby it will not at all feel as it should be." "When labor is most intense I think I will totally lose control of myself" and "behave extremely badly." Loss of control during delivery is a pervasive fear in most FOC studies (Alehagen, Wijma, & Wijma, 2001; Cheung, Ip, & Chan, 2006; Eriksson et al., 2006; Geissbuehler & Eberhard, 2002; Fisher, Hauck, & Fenwick, 2006; Hofberg & Ward, 2004; Lowe, 2000; Melender, 2002; Saisto & Halmesmaki, 2003; Sjogren & Thomassen, 1997). The statistically significant results on the subject of control alludes to a challenge in the severely tokophobic participants to distinguish between the inert material body and the lived, experienced body. This distinction is essential when envisioning birth (Ruddick, 1994).

These variables illuminate how the consciousness of a tokophobic American woman is embedded with meaning that shapes her thoughts about physiological functioning during birth in complex ways. What appears to be misunderstood by the participants is that labor is directly

affected by social interactions and unconscious emotional responses, which in turn affect the complex role of oxytocin and the ability of this hormone to integrate the woman's mind and body during birth (Ruddick, 1994). The results of this study regarding women's resistance to loss of control in labor would indicate an innate struggle to integrate mind/body processes associated with childbirth.

Emotional response is another theme underlying seven statistically significant predictor variables. Namely, "During labor and delivery I will feel extreme panic," "extremely frightful," "not at all safe," "not at all fantastic," "extremely tense," and "extremely afraid." It can be speculated that the women identified as severely tokophobic in this study do not comprehend birth as a form of women's agency as gendered subjects, performed willingly, and with varying levels of emotional investment depending upon the circumstances (Ruddick, 1994). Dread of childbirth as a process has crippled these women's ability to envision their capacity to be fully present in their bodies and actively give birth. FOC makes it impossible for these women to consider the mind-body split and allow processes that are not amenable to rational control yet are necessary for childbirth. It can be speculated that FOC has become entrenched in American culture and American social relationships. The dilemma is manifest in the bodily performances of laboring American women today. The fear in American birth culture is reinforced, not just by medicine, but also in practices and interactions between a woman and her caregivers, and in interactions with those within her social network. American women birth socially, that is, they do not birth alone nor without help (Trevathan, 1987), so the role of support is crucial to sustain self-efficacy to give birth.

Social support is another theme pervading four statistically significant predictor variables. Specifically, those responses were, "During labor and delivery I will feel extremely abandoned," "extremely desolate," "extremely lonely," and "extremely deserted." A lack of or challenges with social support has been identified as a predominant variable in many FOC studies (Laursen, Hedegaard, & Johansen, 2008; Melender, 2002; Nielsen Forman, Videbech, Hedegaard, Dalby Salvig, & Secher, 2000; Ryding et al, 2007; Saisto, 2001; Waldenstrom, 2006), yet little research exists about the relationship between women's need for emotional support during pregnancy and the stress involved in childbirth.

As 55% of the participants in this study have never been married, it is possible that the potential lack of a partner contributed to their feelings of abandonment, aloneness, and related feelings, which they projected upon their experience of labor and delivery, yet according to Child Trends Data Bank (2014) in 2013, 41% of babies were born to unmarried women in the U.S., and have been since 1996. Regardless,

the results could portray disbelief by participants in their ability to manifest the caring, supportive caregivers that research has shown to play a large role in women overcoming FOC (Lyberg & Severinsson, 2010).

This distrust could threaten an American woman's right to ownership of her pregnancy, birth, and postpartum care. Lyberg and Severinsson (2010) identified ownership of the prenatal and perinatal experience as necessary for women to discover the reasons for and barriers around their FOC. The participant's perceived lack of support may also speak to the scanty understanding of women's personal attitudes, philosophies, or wishes regarding giving birth exhibited by caregivers. Mander (2000) found it necessary for the birth team to understand a woman's relationship to labor and labor pain in order to support her achievement of a satisfying birth experience. Yet, Verny (1986) proposes that obstetrical nurses and doctors are being labeled insensitive when their job obligations limit their ability to support women during labor. Typically, a scenario of too few nurses supporting too many women occurs in American hospitals today, leaving the average laboring woman's emotional needs unmet (Verny, 1986). Introduction of pain management is thus an attempt to succor unsupported women. The error, according to Uvnas Moberg (2003), is the tendency of the medical establishment to erroneously label childbirth as simply physiological when it is a relational process.

"During labor and delivery I will feel extreme pain" is another significant predictor variable, yet ranked 23rd in the list of 30 predominate factors. Thus, while pain is expected in childbirth, it also seems to evoke fear in the population studied. This would confirm Monk's (1996) conclusion that the predominant mind set of American culture is to fear childbirth as it represents unbearable pain and suffering and, thus, is considered a dangerous process. This, in fact, was another statistically predominate predictor variable ("During labor and delivery I will feel extremely dangerous.").

Thus, the political meaning of labor pain becomes apparent. Dick-Read (1959) was the first to portray labor pain as a reflection of a woman's sense of coherence and her interpersonal relationships. Childbirth educators struggle to affect how women relate to their bodies in labor to impact their perception of pain. Yet, on a societal level, the widespread impression of pain and, especially labor pain, is negative. These impressions are fostered by medical organizations and their practitioners (Illich, 1976). To the medical community pain is an evil that must be eradicated (Leriche, 1935). The result, per Illich (1976), is a "cultural iatrogenesis"—a society that is driven by the medical establishment to an inability to cope with or to endure pain (p. 127). The results of this survey suggest that the imaginations of women are being

fueled with warlike imagery of fighting and battle as they contemplate labor pain, and this, according to Dick-Read (1959), can become a self-fulfilling prophecy. These dominant, masculine, medical, and confrontational analogies appear to be convincing women that labor pain needs to be eradicated (Mander, 2000). Today's cultural context blurs the purposefulness and productiveness of the contraction pain. As the results of the survey show, women are afraid to confront their labor, fearing the pain will be overwhelming. The results demonstrate that tokophobic American women do not trust themselves, their bodies, nor their support people on the subject of childbirth.

None of the socio-economic factors surveyed contributed significantly to the dependent variable of W-DEQ Total Score. This leads to the conclusion that tokophobia knows no boundaries; that is, age, race, education, and marital status did not contribute to FOC in the American landscape for the population studied.

The lack of demographic diversity (81% White/Caucasian) is a limitation of this study and affects the ability to generalize the results. The results of this study did not replicate the sociodemographics factors found to affect tokophobia in international research, which were being young, having a low educational level, or experiencing marital dissatisfaction (Saisto & Halmesmaki, 2003; Waldenstrom et al., 2006). The study of gravid versus non-gravid populations may be an explanation, but the demographic results of Lowe's (2000) U.S. research reject that argument. Like this study, Lowe's participants were predominately white, well-educated, and middle-class women. Therefore, it is valid to query whether fear of childbirth is a luxury for well-educated white women to ponder. Regardless, there is a need for additional research to validate the results in more culturally and socioeconomically diverse populations than have been performed to date in the United States. This also raises the role of culture in tokophobia in America, because in the international review of the literature, culture definitely plays a role.

Cultural factors

If, where, how, with whom, and even when American women give birth are being culturally determined (Barfield, 1996; Kitzinger, 1978). According to Davis-Floyd (1992), where women are highly regarded, nurturing birth traditions and thriving babies tend to be the result; where the opinion of women is low, the opposite occurs.

The opposite is occurring in the American birth landscape. American maternal mortality rates have risen over the last 20 years at a rate that places the U.S. in the company of war-torn countries such as Afghanistan and impoverished nations such as Chad and Swaziland

(Kassebaum et al., 2014). According to *The Lancet* (Kassenbaum et al., 2014), the U.S. ranks 60th in maternal mortality globally, falling behind every other industrialized nation.

Poor American women and American women of color are by far the hardest hit by this crisis. There are consequences for maternal stress. The repercussions are not limited to women; they impact children as well as society, and shape culture. Pearce (1992) concluded that the emotional state of the mother produces lasting effects on her fetus. Thus, from a PPN perspective, it can be speculated that FOC results in sub-optimal emotional neurodevelopmental hardwiring in which fight/flight/freeze tendencies are maximized and, thereby, contribute to a fear-based society.

The emotional life of a country is greatly influenced by the quality of motherhood in that nation (deMause, 2002). Fearless women result in fearless children, which in turn means a fearless society. This concept opens the door for speculation that tokophobia effects sabotage the possibility for peace in future generations in the United States of America for, ultimately, the emotional environment in which our children are contemplated, conceived, gestated, and born has an arc of influence beyond the individual or the family concerned; it is foundational to the collective thinking of our society as a whole.

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