



## Cross-cultural development and psychometric evaluation of a measure to assess fear of childbirth prior to pregnancy



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### ABSTRACT

**Background:** Assessment of childbirth fear, in advance of pregnancy, and early identification of modifiable factors contributing to fear can inform public health initiatives and/or school-based educational programming for the next generation of maternity care consumers. We developed and evaluated a short fear of birth scale that incorporates the most common dimensions of fear reported by men and women prior to pregnancy, fear of: labour pain, being out of control and unable to cope with labour and birth, complications, and irreversible physical damage.

**Methods:** University students in six countries (Australia, Canada, England, Germany, Iceland, and the United States,  $n = 2240$ ) participated in an online survey to assess their fears and attitudes about birth. We report internal consistency reliability, corrected-item-to-total correlations, factor loadings and convergent and discriminant validity of the new scale.

**Results:** The *Childbirth Fear – Prior to Pregnancy (CFPP)* scale showed high internal consistency across samples ( $\alpha > 0.86$ ). All corrected-item-to total correlations exceeded 0.45, supporting the uni-dimensionality of the scale. Construct validity of the CFPP was supported by a high correlation between the new scale and a two-item visual analogue scale that measures fear of birth ( $r > 0.6$  across samples). Weak correlations of the CFPP with scores on measures that assess related psychological states (anxiety, depression and stress) support the discriminant validity of the scale.

**Conclusion:** The CFPP is a short, reliable and valid measure of childbirth fear among young women and men in six countries who plan to have children.

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### Background

Childbirth fear is reported by 2.5%–78% of pregnant women, depending on the instrument used to measure fear and the level of severity [1–6]. Severe fear of childbirth affects 2.5% of nulliparous and 4.5% of multiparous women [6] and is characterized by nightmares, physical complaints, and difficulties concentrating on work or family activities. Common childbirth fears include worries about the health and safety of the baby, and fear of intolerable

pain, prolonged labour, an inability to cope with labour and unsupportive hospital staff [5–8].

While numerous studies about women's childbirth fear have been published over the past 5 years, less is known about men's childbirth fear. Male partners have described emotionally challenging experiences with supporting their partners during childbirth, particularly when there were complications, when medical care was deemed to be unsatisfactory and they felt excluded from decision-making [9]. Feelings of stress, panic, fear and helplessness are experienced by some men during pregnancy and birth [10]. In one study, it was estimated that 13% of men are fearful of birth [4]; another study with 762 Swedish men found that 11% suffered from childbirth fear [11]. A literature review by Hanson et al. identified the following paternal fears: harm to the mother or newborn baby,

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partners' pain, feelings of helplessness (especially when fathers were not involved in decision-making), lack of knowledge, and concern about high-risk interventions. The most common fear reported by fathers was fear that their partner would have to endure intolerable pain and suffering [12].

Partners' childbirth fear and mode of delivery preferences have been linked to birth outcomes. Based on her Swedish study with 1074 pregnant women and their partners, Hildingsson reported that partners' attitudes were important in predicting actual mode of birth [13]. Concordance between pregnant women and their partners' caesarean section (CS) preferences resulted in 72.7% of couples having a planned CS. If a woman preferred a CS, but her partner preferred a vaginal birth, only 42.9% had a planned CS. Planned CS rates were highest when both parents expressed fear of birth (50%). These findings indicate that it is important to include men in studies that assess the link between childbirth fear and birth outcomes, so that interventions can be developed that target the dyad, not just the pregnant woman. Likewise, it is beneficial to understand the attitudes and fears of young men and women who plan to have children in the future, to identify and address modifiable factors that might predispose them to fear of childbirth.

Recent studies of young women and men planning to have children show that attitudes towards pregnancy and birth are well developed in this population [11–15] and the same positive association between prenatal preferences for elective interventions and fear of childbirth is seen among men and women who plan to have children and pregnant women [14–18]. These findings suggest that addressing fear of birth during pregnancy might be too late, and earlier intervention is necessary. This could be achieved by developing educational modules for secondary school students that address common fears and misconceptions about pregnancy and birth, are aligned with best practice guidelines for the care of low risk women and contribute to international efforts to reduce rates of elective interventions in high resource countries.

High childbirth fear in the pre-pregnant Canadian population is estimated at 13.6% among young women and 3.5% among young men [14]. These estimates are based on a survey that included a 6-item fear of birth scale and a mixture of open-ended and pre-defined Likert type questions. High fear was defined as scores greater than one standard deviation above the mean and low fear as scores greater than one standard deviation below the mean. Criterion sampling was used to select a subsample of young women with high and low fear of birth ( $n = 461$ ) [14].

Thematic analysis of Canadian women's comments revealed that participants with high fear of birth expressed feeling vulnerable and afraid when thinking about labour and birth, because of the potential for physical damage (e.g., vaginal tearing and stretching) and intolerable pain [14]. Young women with high fear tended to describe pregnancy and birth as unpredictable and risky, whereas respondents with low fear regarded these processes as normal and natural. Complications during pregnancy, labour and birth were expected and considered unavoidable by women with high fear. While women in both groups believed labour to be painful, women with low fear expected to be able to manage the pain, whereas women with high fear were frightened by the prospect of pain and concerned about their ability to cope with pain. Some women with high fear expressed fears about panicking and being out of control and not knowing what to do [14].

A subset analysis of male students revealed that 77% considered birth to be risky and unpredictable and ~40% were worried about physical changes to the female body as a result of childbirth. Elevated risk perceptions were associated with increased fear of birth among men [15]; when asked why young men and women preferred Caesarean section over vaginal birth, 56% of women and 32% of men chose CS to avoid labour pain and/or because they are afraid of pain [19].

This body of literature informed the development of a fear of childbirth measure for young women and men who plan to have children in the future. We report on the development of the new measure, the *Childbirth Fear – Prior to Pregnancy (CFPP)* scale, and report the reliability and validity of the measure in young adults from six countries.

## Methods

### *Design and sample*

Data were collected in six countries between March 2014 and March 2015 using an online survey. Young men and women who were already parents, experiencing pregnancy at the time of data collection, or did not plan to have children in the future were excluded. Ethics approval was obtained at the institution of the primary author and at participating institutions.

### *Sample 1 (Australia)*

At a large university in Western Australia, 8000 domestic students were invited to participate in the survey in March 2014. One reminder email was sent out two weeks after first contact.

### *Sample 2 (Canada)*

At a small university in Northern British Columbia the survey was disseminated to all students ( $N = 4300$ ) in September 2014. Despite reminder e-mails and a draw for a \$250 gift card, we received only 59 completed responses. To increase the Canadian sample size, we added a mid-sized Ontario university and contacted individual departments and faculties to disseminate the survey to their students in January 2015.

### *Sample 3 (England)*

A link to the online survey was posted on a central messaging board on the website of a university in North-West England (total student body at the time of posting was 32,499). The link was reposted 6 times between April 2014 and May 2014. Students within the Schools of Health, Social Work, and Psychology were also sent a direct email invitation/link to the survey ( $n = \sim 6300$ ).

### *Sample 4 (Germany)*

An invitation to complete the survey was sent to all students at a small medical university in Northern Germany in October/November 2014 ( $N = 3130$ ). Several reminder e-mails were sent out to encourage participation.

### *Sample 5 (Iceland)*

An e-mail invitation was sent to all students at the largest university in Iceland in early November 2014 ( $N = 9805$ ). A reminder e-mail was sent out one week after first contact.

### *Sample 6 (USA)*

An e-mail invitation to complete the online survey was sent to a random sample of 4547 undergraduate students at a private college in the North-eastern United States (50% of the undergraduate student body) in October 2014. A reminder was sent out one week after the initial invitation.

The Australian university and the American college are located in large urban centres. The German, Icelandic and English university and one of the Canadian universities are located in

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