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## Partners of nulliparous women with severe fear of childbirth: a longitudinal 1 study of psychological well being

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1 **Partners of nulliparous women with severe fear of childbirth: a longitudinal**  
2 **study of psychological well being**

3

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5 Tokola, M., & Saisto, T.

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10 **ABSTRACT: Background:** Little is known about the psychological status of  
11 partners of women with severe fear of childbirth (FOC). In this longitudinal study  
12 from Helsinki University Central Hospital, we investigated FOC, depression and post-  
13 traumatic stress in the partners of women with severe FOC, and possible effects of  
14 group psychoeducation and mode of birth. **Methods:** During pregnancy, 250 partners  
15 of nulliparous women with severe FOC participated, 93 in the intervention group and  
16 157 in the control group. At three months postpartum 52 partners in the intervention  
17 group and 93 in the control group participated. Both the partners and the childbearing  
18 women filled in the Wijma Delivery Expectancy Questionnaire and the Edinburgh  
19 Postnatal Depression Scale mid-pregnancy as well as three months postpartum, when  
20 they also filled in the Traumatic Event Scale.

21 **Results:** Partners of women with severe FOC reported less antenatal and postnatal  
22 FOC and fewer depressive symptoms than the childbearing women. No partner  
23 reached the threshold of severe FOC. No partner reported a possible post-traumatic  
24 stress disorder. Group psychoeducation with relaxation was not associated with better

1 or worse psychological well being of the partners. An emergency cesarean section  
2 was associated with a more fearful delivery experience in the partners.

3 **Conclusion:** Partners of nulliparous women with severe FOC neither seem to suffer  
4 from severe FOC nor reported post-traumatic stress symptoms after childbirth. They  
5 reported better psychological well being than the mothers both during pregnancy and  
6 after delivery. An unexpected cesarean may be a negative experience even for  
7 partners of childbearing women.

8

9 **Keywords:** Fear of childbirth, partners, group psychoeducation, post-traumatic stress  
10 disorder

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12

1 **Introduction**

2

3 Childbirth is a significant event in life. Although joy and positive expectations of the  
4 coming birth are common, some people are troubled by fear of childbirth (FOC)  
5 during pregnancy. The prevalence of intense FOC in expectant fathers has been  
6 reported at 5-13% (1,2,3). In women, about 10% report a fear of getting pregnant or  
7 giving birth vaginally, or the fear disturbs her normal life and activities (4-7). FOC in  
8 women is associated with depressive symptoms (8,9), and with post-traumatic stress  
9 postpartum (10). Women with severe FOC more often want a planned cesarean  
10 section (4,5). FOC in fathers has been associated with parental stress and with poor  
11 physical and mental health (11). The relationship between pregnant women's FOC  
12 and their partners' FOC is not sufficiently known. Hildingsson (1) reported few  
13 couples (6/821) with mutual FOC in a non-selected sample. Another study about  
14 couples' mental well being showed that pregnant women and their partners seemed to  
15 resemble each other concerning depression and dissatisfaction with life (12).

16       The possible effect of treatment in partners of women with a severe FOC has  
17 not been evaluated. We do know that treatment of FOC may lower the need for  
18 cesarean section and improve the mental health of the women (13,14). In a previously  
19 published randomized controlled study of group psychoeducation with relaxation for  
20 nulliparous women with very severe FOC, a positive effect was shown on the  
21 obstetric outcome (15) as well as on the childbirth experience and maternal  
22 adjustment of the women (16). Even so, post-traumatic stress symptoms were  
23 common postpartum, especially following emergency cesarean section (16). In the  
24 present study, the partners of the participating women are investigated.

1           The aim of this longitudinal study was to examine antenatal and postnatal  
2 FOC, and depressive and post-traumatic stress symptoms after childbirth in the  
3 partners of nulliparous women with severe FOC, as well as possible effects of the  
4 group psychoeducation with relaxation, and the association between mode of birth  
5 and postnatal FOC.

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## Methods

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10 Between October 2007 and August 2009, 371 nulliparous women participating in  
11 routine ultrasound screening at Helsinki University Central Hospital were randomized  
12 to group psychoeducation with relaxation for severe fear of childbirth ( $n = 131$ ) or to  
13 a control group with conventional care ( $n = 240$ ). Severe FOC in the pregnant women  
14 was diagnosed by a score  $\geq 100$  in the Wijma Delivery Expectancy/Experience  
15 Questionnaire A (W-DEQ A), screened at the time of routine ultrasound before mid-  
16 pregnancy (mean at  $14 \pm 4$  gestational weeks). The partners in both groups separately  
17 received an invitation and gave their informed consent if they wanted to participate in  
18 the study. Two questionnaires were posted, one mid-pregnancy (at  $20 \pm 2$  gestational  
19 weeks), and another three months after delivery.

20           The intervention method, group psychoeducation followed by relaxation with  
21 a mindfulness based guided exercise, is described in detail in a previous publication  
22 (17). Six group sessions during pregnancy started at about gestational week 28, and  
23 one session was held six to eight weeks postpartum. The leaders were one of two  
24 psychologists with specialization in group therapy. Not more than six pregnant  
25 nulliparous women participated in each group. The partners were invited to one of the

1 six group sessions during pregnancy. During that session the focus was on the  
2 emotions, especially wishes and fears regarding the forthcoming childbirth,  
3 parenthood and becoming a family. The participants were supported in sharing their  
4 emotions and thoughts within the couple and within the intervention group. Those  
5 randomized to the control group had conventional antenatal care, which is **community**  
6 **based and** free of charge in Finland. Pregnant nulliparous women are scheduled for 10  
7 visits to a **district nurse**. Partners are welcome to attend. Complications are treated by  
8 obstetricians **and midwives** at a hospital clinic. Virtually all births take place in a  
9 hospital with hospital-based staff. The couples in the intervention group also had  
10 access to conventional antenatal care.

11 In all, 257 partners (three female) sent in their informed consent form and  
12 completed questionnaires during mid-pregnancy. For the purpose of the current  
13 analysis, we only used those couples that reported living together ( $n = 250$  couples).  
14 Of these, 93 were in the intervention group and 157 in the control group. At three  
15 months postpartum 145 (only male) partners returned the questionnaire (58%), 52  
16 (56%) in the intervention group and 93 (59%) in the control group. In one case we  
17 could not trace mode of birth.

18 Fear of childbirth was assessed using the Wijma Delivery  
19 Expectancy/Experience Questionnaire Man (W-DEQ Man), version A (prenatal FOC)  
20 and version B (postnatal FOC, describing the degree of fear during the recent  
21 childbirth). The W-DEQ is a 6-point, 33-item self-assessment rating scale for a  
22 minimum score of 0 and a maximum of 165. It has been used extensively in various  
23 countries and demonstrated good validity (18). It has also been used in male subjects  
24 (2). In this study, the Cronbach's alpha reliability coefficient was 0.92 for W-DEQ  
25 Man A and 0.89 for W-DEQ Man B in the partners. The corresponding Cronbach's

1 alpha reliability coefficients for the childbearing women were 0.75 and 0.95. For the  
2 purpose of this study, having a “higher postnatal fear” was defined as having a W-  
3 DEQ sum score in the upper quartile (W-DEQ>47).

4 The Edinburgh Postnatal Depression Scale (EPDS), developed to assess  
5 postnatal depressive symptoms, was used during pregnancy and three months after  
6 childbirth (19). It has been validated for pregnancy (20,21) and for new fathers (22).  
7 Each item is rated on a scale of 0 to 3 and all items are added to give an overall score.  
8 The chosen cut-off score was  $\geq 11$  for depression, which has shown a sensitivity of  
9 78.9 and a specificity of 84.7 (18). Cronbach’s alpha coefficient was 0.84 and 0.83 for  
10 partners and 0.88 and 0.89 for the childbearing women in the two waves.

11 The Traumatic Event Scale (TES) was used to measure post-traumatic stress  
12 symptoms related to childbirth, three months after delivery (23). The scale was  
13 developed in line with the Diagnostic and Statistical Manual of Mental Disorders,  
14 Fourth Edition criteria for post-traumatic stress disorder and comprises the stressor  
15 criterion (criterion A) and all symptom criteria for post-traumatic stress disorder  
16 including criteria E (time criterion) and F (influence on life). TES includes four  
17 statements about criterion A (stressor) and 17 statements concerning post-traumatic  
18 stress disorder criteria B, C and D (i.e. intrusive thoughts, avoidance/numbing and  
19 arousal). The subjects were asked to report the frequency of each symptom described  
20 on a scale of 1 (never/not at all) to 4 (often). A TES F criterion is the reported  
21 influence of the symptoms on the person’s life, on a scale of 0–10. For a post-  
22 traumatic stress disorder profile (very probable diagnosis, but an interview is always  
23 needed) according to the Diagnostic and Statistical Manual of Mental Disorders,  
24 Fourth Edition criteria were fulfilled if items A, B, C, D and E were fulfilled and the  
25 degree to which they influenced life was 6–10 for at least one of the symptoms. The



1 at  $\alpha = 0.05$ . The Statistical Package of Social Sciences (SPSS) 22 was used to perform  
2 all these analyses.

3

4

## 5 **Results**

6

7 The distributions of socio-demographic factors, FOC, depressive symptoms, and post-  
8 traumatic stress symptoms are shown in Table 1.

9 The average ages of the partners and the pregnant women were 31 and 29  
10 years, respectively, at the start of the study. One third of the partners and nearly half  
11 of the pregnant women had a university degree. Prenatal FOC was high with low  
12 variance in the pregnant women as W-DEQ A  $\geq 100$  was the criterion for  
13 participation. For the partners, prenatal FOC was considerably lower (mean of W-  
14 DEQ A was about 45). No partner scored  $\geq 100$ , the cut-off point for the women to  
15 participate in the intervention study. Only one partner scored  $\geq 85$ , another commonly  
16 used cut-off point for severe fear of childbirth (2). Three months postpartum, the W-  
17 DEQ B mean score was about 35 for the partners and 65 and 70 for the women in the  
18 intervention and control groups.

19 Depressive symptoms were lower in the partners (mean score of EPDS about 4  
20 before and after the childbirth) compared to the childbearing women (mean score of  
21 EPDS about 8 before childbirth and about 7 after the childbirth). Before childbirth, 12  
22 partners (4.9% of the available sample) and after childbirth, six partners (4.1% of the  
23 available sample) had an EPDS score  $\geq 11$  indicating risk of depression.

24 Three months postpartum, post-traumatic stress symptoms score (TES) was  
25 about 19 in the partners and 34 in the childbearing women. No man reported a post-



1 partners with FOC may have other needs than pregnant women (24). Further research  
2 around optimizing partner input within this intervention model might be of interest.

3         The partners reported less FOC, fewer depressive symptoms, and fewer post-  
4 traumatic stress symptoms than the women with a severe FOC (Table 1). This might  
5 be due to different experiences and expectations related to childbirth, but perhaps also  
6 to differences in understanding of the questions posed. It is also possible that partners  
7 with a severe FOC did not want to take part in the study, even when their  
8 wife/girlfriend did. The rate of elective cesarean section in the present study is lower  
9 than that in the larger study of all childbearing women (15), which suggests that  
10 partners of women who wanted a cesarean might have been less motivated to  
11 participate in a longitudinal study. Those partners may have been more frightened of  
12 birth and may have wished to avoid filling in questionnaires about feelings and  
13 symptoms. It is however evident that the partners who did participate in this study had  
14 virtually no severe FOC during pregnancy.

15         Most of the few studies of FOC in men have used other ways of measurement  
16 than the W-DEQ (1,25). According to a study that used a modified W-DEQ A, 12%  
17 of 672 Swedish fathers-to-be reported a serious FOC mid-pregnancy corresponding to  
18 a W-DEQ score of  $\geq 85$  (2). In our study of partners of women with a very serious  
19 fear, hardly anyone reported such a high score. It is possible that couples where both  
20 partners suffer from severe FOC do not choose to have children. The association  
21 between FOC in both parents and elective cesarean section should be investigated in  
22 the future. We did find an association between higher levels of FOC during their  
23 partner's pregnancy and a higher level of postnatal FOC (or frightening experience of  
24 childbirth) just as in the other Swedish study (2).

1           Other studies about new fathers' depressive symptoms have reported various  
2 mean EPDS scores, from antenatal and postnatal scores of 5.3 and 6.5 (26) to 2.89  
3 and 2.49 (27), compared to our results of 3.5 and 3.9. One study using the same cut-  
4 off point for possible paternal depression reported a prevalence of 5.4 and 5.9 percent  
5 from birth to six months postpartum (28) compared to our results of 4.1 percent three  
6 months postpartum. The partners participating in the present study do not seem more  
7 depressed than new fathers with spouses with unknown levels of FOC.

8           The impact of emergency cesarean section on new fathers' frightening  
9 experience of childbirth has been shown previously (29). However, no partner in our  
10 sample seemed seriously harmed since we found no probable PTSD following birth.  
11 The fact that an emergency cesarean may be traumatic for a childbearing woman is  
12 well known (30). A previous Finnish study showed that anxiety during pregnancy was  
13 a predictor of parental stress in obstetrically low-risk mothers up to three years  
14 postpartum, but not in the partners (31).

15           Our study has certain limitations, which must be taken into consideration  
16 before generalizing the results. In another cultural context partners of women with  
17 severe FOC may report differently about their psychological status. Compared with  
18 another model of standard care, the results of the intervention may have been  
19 different. The participation rate was under 60% in the postnatal follow-up. Only  
20 Finnish and Swedish speaking couples could participate. The measure for depressive  
21 symptoms (EPDS) may also be less suitable for new fathers than for new mothers  
22 (32). However, the lower level of depressive symptoms in the partners compared to in  
23 the childbearing women was to be expected according to previous research (33).

24           Women with severe FOC are vulnerable, and may suffer from post-traumatic  
25 stress disorder following childbirth even after treatment during pregnancy (16). It is

1 reassuring that the partners in these families seem to feel well postpartum, which  
2 should be beneficial to the early infant-parent interaction (34).

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## 5 **References**

6

7 1. Hildingsson I. Swedish couples' attitudes towards birth, childbirth fear  
8 and birth preferences and relations to mode of birth – A longitudinal cohort study. *Sex*  
9 *Reprod Healthc* 2014;5:75-80.

10

11 2. Bergström M, Rudman A, Waldenström U, Kieler H. Fear of childbirth  
12 in expectant fathers, subsequent childbirth experience and impact of antenatal  
13 education: subanalysis of results from a randomized controlled trial. *Acta Obstet*  
14 *Gynecol Scand* 2013;92:967-73.

15

16 3. Hildingsson I, Johansson M, Fenwick J, Haines J, Rubertsson C.  
17 Childbirth fear in expectant fathers: findings from a regional Swedish cohort study.  
18 *Midwifery* 2014;30:242-7.

19

20 4. Rouhe H, Salmela-Aro K, Halmesmäki E, Saisto T. Fear of childbirth  
21 according to parity, gestational age, and obstetric history. *BJOG* 2009;116(1):67-73.

22

23 5. Nieminen K, Stephansson O, Ryding EL. Women's fear of childbirth  
24 and preference for cesarean section--a cross-sectional study at various stages of  
25 pregnancy in Sweden. *Acta Obstet Gynecol Scand* 2009;88(7):807-13.

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25

6. Laursen M, Hedegaard M, Johansen C. Fear of childbirth: predictors and temporal changes among nulliparous women in the Danish National Birth Cohort. *BJOG* 2008;115(3):354-60.

7. Lukasse M, Schei B, Ryding EL; Bidens study group. Prevalence and associated factors of fear of childbirth in six European countries. *Sex Reprod Healthc* 2014;5:99-106.

8. Räisänen S, Lehto SM, Nielsen HS, Gissler M, Kramer R, Heinonen S. Risk factors for and perinatal outcomes of major depression during pregnancy: a population-based analysis during 2002-2010 in Finland. *BMJ Open* 2014;4:e004883. Doi: 10.11236/bmjopen-3014-004883.

9. Pazzagli C, Laghezza L, Capurso M, Sommelia C, Lelli F, Mazzaschi C. Antecedents and consequences of fear of childbirth in nulliparous and parous women. *Infant Ment Health J* 2015;36:62-74.

10. Söderquist J, Wijma B, Thorbert G, Wijma K. Risk factors in pregnancy for post-traumatic stress and depression after childbirth. *BJOG* 2009;116:241-9.

11. Hildingsson I, Haines H, Johansson M, Rubertsson C, Fenwick J. Childbirth fear in Swedish fathers is associated with parental stress as well as with poor physical and mental health. *Midwifery* 2014;30:248-54.

- 1 12. Saisto T, Salmela-Aro K, Nurmi JE, Halmesmäki E. Psychosocial  
2 characteristics of women and their partners fearing childbirth. *BJOG*  
3 2001;108(5):492-8.  
4
- 5 13. Saisto T, Salmela-Aro K, Nurmi J-E, Könönen T, Halmesmäki E. A  
6 randomized controlled trial of intervention in fear of childbirth. *Obstet Gynecol*  
7 2001;98:820-6.  
8
- 9 14. Nerum H, Halvorsen H, Sörlie T, Öian P. Maternal request for caesarean  
10 section due to fear of birth: can it be changed through crisis-oriented counselling?  
11 *Birth* 2006;128:1388-91.  
12
- 13 15. Rouhe H, Salmela-Aro K, Toivanen R, Tokola M, Halmesmäki E,  
14 Saisto T. Obstetric outcome after intervention for severe fear of childbirth in  
15 nulliparous women – randomised trial. *BJOG* 2013;1201:75-84.  
16
- 17 16. Rouhe H, Salmela-Aro K, Toivanen R, Tokola M, Halmesmäki E,  
18 Ryding EL, Saisto T. Group psychoeducation and relaxation for severe fear of  
19 childbirth improves maternal adjustment and childbirth experience – a randomised  
20 controlled trial. *J Psychosom Obstet Gynecol* 2014;24:1-9.  
21
- 22 17. Salmela-Aro K, Read S, Rouhe H, Halmesmäki E, Toivanen RM,  
23 Tokola MI, Saisto T. Promoting positive motherhood among nulliparous pregnant  
24 women with an intense fear of childbirth: RCT intervention.. *J Health Psychol.*  
25 2012;17:520-34.

- 1
- 2 18. Wijma K, Wijma B, Zar M. Psychometric aspects of the W-DEQ; a new  
3 questionnaire for the measure of fear of childbirth. *J Psychosom Obstet Gynaecol*  
4 1998;19:84-97.
- 5
- 6 19. Cox J, Holden J, Sagovsky R. Detection of postnatal depression.  
7 Development of the 10-item Edinburgh Postnatal Depression Scale. *Br J Psychiatry*  
8 1987;150:782-6.
- 9
- 10 20. Kozinszky Z, Dudas RB. Validation studies of the Edinburgh Postnatal  
11 Depression Scale for the antenatal period. *J Affect Disord* 2015;176:95-105.
- 12
- 13 21. Rubertsson C, Börjesson K, Berglund A, Josefsson A, Sydsjö G. The  
14 Swedish validation of Edinburgh Postnatal Depression Scale (EPDS) during  
15 pregnancy. *Nord J Psychiatry* 2011;65:414-8.
- 16
- 17 22. Edmondson OJ, Psychogiou L, Vlachos H, Netsi E, Ramchandani PG.  
18 Depression in fathers in the postnatal period: assessment of the Edinburgh Postnatal  
19 Depression Scale as a screening measure. *J Affect Disord* 2010;125:365-8.
- 20
- 21 23. Wijma K, Söderquist J, Wijma B. Post-traumatic stress disorder after  
22 childbirth: a cross-sectional study. *J Anxiety Disord* 1997;11:587-97.
- 23
- 24 24. Hanson Z, Hunter LP, Bormann JR, Sobo EJ. Paternal fears of  
25 childbirth: A literature review. *J Perinat Educ* 2009;18:12-20.

1

2 25. Eriksson C, Westman G, Hamberg K. Experiential factors associated  
3 with childbirth-related fear in Swedish women and men: a population based study. *J*  
4 *Psychosom Obstet Gynecol* 2005;26:63-72.

5 26. Top ED, Cetisli NE, Cuclu S, Zengin EB. Paternal Depression Rates in  
6 Prenatal and Postpartum Periods and Affecting Factors. *Arch Psychiatr Nurs*  
7 2016;30:747-52.

8 27. Gurber S, Baumeler L, Grub A, Surbek D, Stadlmayr W. Antenatal  
9 depressive symptoms and subjective birth experience in association with postpartum  
10 depressive symptoms and acute stress reaction in mothers and fathers: A longitudinal  
11 path analysis. *Eur J Obstet Gynecol Reprod Biol* 2017 May 30;215:68-74. doi:  
12 10.1016/j.ejogrb.2017.05.021. [Epub ahead of print].

13 28. Anding J, Röhrle B, Grieshop M, Schücking B, Christiansen H. Early  
14 Detection of Postpartum Depressive Symptoms in Mothers and Fathers and Its  
15 Relation to Midwives' Evaluation and Service Provision: A Community-Based Study.  
16 *Front Pediatr* 2015 Jul 8;3:62. doi: 10.3389/fped.2015.00062. eCollection 2015.

17

18 29. Johansson M, Rubertsson C, Rådestad I, Hildingsson I. Childbirth – an  
19 emotionally demanding experience for fathers. *Sex Reprod Healthc* 2012;3:11-20.

20

21 30. Olde E, van der Hart O, Kleber R, van Son M. Post-traumatic stress  
22 following childbirth: a review. *Clin Psychol Rev* 2006;26:1-16.

23

- 1 31. Saisto T, Salmela-Aro K, Nurmi J-E, Halmesmäki E. Longitudinal study  
2 of predictors of parental stress in mother and fathers of toddlers. *J Psychosom Obstet*  
3 *Gynecol* 2008;29:213-22.  
4
- 5 32. Massoudi P, Hwang P, Wickberg B. How well does the Edinburgh  
6 Postnatal Depression Scale identify depression and anxiety in fathers? A validation  
7 study in a population based Swedish sample. *J Affect Disord* 2013;149:67-74.  
8
- 9 33. Sundström Poromaa I, Comasco E, Georgakis MK, Skalkidou A. Sex  
10 differences in depression during pregnancy and the postpartum period. *J Neurosci Res*  
11 2017;95:719-30.
- 12 34. Matvienko-Sikan K, Murphy G, Murphy M. The role of prenatal,  
13 obstetric, and post-partum factors in the parenting stress of mothers and fathers of 9-  
14 month old infants. *J Psychosom Obstet Gynecol* 2017,  
15 <http://dx.doi.org.proxy.kib.ki.se/10.1080/0167482X.2017.1286641>. [Epub ahead of  
16 print].  
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1

2 Table 1. Age, educational level and psychological symptoms in women who had  
3 severe FOC in pregnancy and their partners (percent or mean  $\pm$  SD) by intervention  
4 and control group.

5

6

7

	Partners Intervention group	Partners Control group	Childbearing women Intervention group	Childbearing women Control group
<i>Mid-pregnancy</i>				
Age	32.7 $\pm$ 5.4 (n = 85)	31.1 $\pm$ 5.0 (n = 143)	29.8 $\pm$ 4.4 (n = 93)	29.3 $\pm$ 4.4 (n = 157)
Educational level	(n = 87)	(n = 151)	(n = 93)	(n = 156)
Comprehensive school	11.5	13.9	6.5	6.4
Vocational school	19.5	19.2	10.8	16.0
Polytechnics	17.2	18.5	11.8	11.5
Lower university degree	18.4	15.9	25.8	26.3
Higher university degree	33.3	32.5	45.2	39.7
Prenatal FOC (W-DEQ A)	44.6 $\pm$ 20.5 (n = 88)	45.0 $\pm$ 19.1 (n = 152)	112.5 $\pm$ 12.9 (n = 93)	109.6 $\pm$ 12.3 (n = 157)
Depressive symptoms (EPDS)	4.2 $\pm$ 4.1 (n = 89)	3.8 $\pm$ 3.7 (n = 152)	7.6 $\pm$ 5.3 (n = 93)	8.8 $\pm$ 5.2 (n = 157)

<i>Three months after childbirth</i>				
Postnatal FOC (W-DEQ B)	34.2 ± 18.5 (n = 51)	35.2 ± 18.8 (n = 93)	64.9 ± 32.0 (n = 71)	70.4 ± 28.1 (n = 114)
Depressive symptoms (EPDS)	3.5 ± 3.0 (n = 52)	3.9 ± 3.9 (n = 93)	6.3 ± 5.3 (n = 71)	8.0 ± 5.8 (n = 114)
Post-traumatic stress symptoms (TES)	18.2±1.8 (n = 28)	19.5 ± 3.8 (n = 65)	34.1 ± 10.7 (n = 71)	35.3 ± 9.7 (n = 114)

1 Note. The paired sample t-tests comparing the age, educational level (continuous),  
2 prenatal and post-natal FOC and depressive symptoms, and post-traumatic stress  
3 between the mothers and their partners in intervention and control groups are all  
4 significant at  $p < 0.001$ .

5  
6

1 Table 2. Delivery variables and postnatal FOC in 144 partners of women with severe  
 2 FOC.

Delivery variable	Number (percent)	Postnatal FOC W-DEQ mean $\pm$ SD	Comparison to spontaneous vaginal birth (P)*
Spontaneous vaginal birth	84 (58.3)	31.6 $\pm$ 17.2	NA
Instrumental vaginal birth	22 (15.3)	36.6 $\pm$ 13.8	0.352
Elective cesarean section	16 (11.1)	33.3 $\pm$ 18.5	0.707
Cesarean section for fear of birth	10 (6.9)	31.1 $\pm$ 13.2	0.971
Emergency cesarean section	22 (15.3)	46.5 $\pm$ 23.9	0.002

3 \*Independent samples t-test

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