

Psychological consequences of termination of pregnancy for fetal anomaly: similarities and differences between partners

Retrospective study in both partners

M.J. Korenromp¹, G.C.M.L. Christiaens¹, J. van den Bout²,
E.J.H. Mulder¹, J.A.M. Hunfeld³, C.M. Bilardo⁴, J.P.M. Offermans⁵
G.H.A. Visser¹

¹ Department of Perinatology and Gynaecology, University Medical Centre Utrecht, The Netherlands

² Department of Clinical Psychology, Utrecht University, The Netherlands

³ Department of Medical Psychology & Psychotherapy, Erasmus Medical Centre Rotterdam, The Netherlands

⁴ Department of Obstetrics and Gynaecology, University Centre Amsterdam, The Netherlands.

⁵ Department of Obstetrics and Gynaecology, University Centre Maastricht, The Netherlands.

ABSTRACT

Objective: We examined the psychological responses to termination of pregnancy (TOP) for fetal anomaly from both men and women. The aim was to find risk factors for poor psychological outcome both for the individuals and for the couple.

Methods: A cross-sectional study was performed in 151 couples 2-7 years after TOP. We used standardized and validated questionnaires to investigate grief, symptoms of posttraumatic stress, somatic complaints, anxiety, and depression.

Results: Most couples adapted well to their loss, although several patients had pathological scores on posttraumatic stress symptoms and depression. Differences between men and women were slight. Higher education, good partner support, earlier gestational age and life-incompatibility of the disorder positively influenced the outcomes, more for women than for men. Men and women with pathological scores rarely had such scores simultaneously.

Conclusion: We emphasize the importance of equally involving both parents in the counselling because the outcomes of grief and posttraumatic stress symptoms between men and women only moderately differ and post-TOP psychopathology occurs in men as well. Good adjustment to TOP in women seems dependent on the level of support that they perceive from their partners. The intracouple results of the study suggest a mutual influence in the process of grieving between the partners.

INTRODUCTION

Nearly all research on the psychological consequences of termination of pregnancy (TOP) for fetal anomalies focuses on the mother, thereby neglecting the father. In reality the decision to terminate pregnancy is taken jointly by both parents in a majority of couples and for either of them TOP is a life event. In the few studies in which the responses of men and women to TOP were assessed, fathers did show distress compared to mothers, but less severe and less prolonged¹⁻³. Only the study of White-van Mourik used standardised and validated methods. Far more studies have addressed the reactions of both parents to spontaneous perinatal demise. In these studies, fathers again showed less-severe and less-prolonged distress than mothers⁴⁻⁶. Support of the partner and/or significant others is known to be of crucial importance in adjustment to serious life events including TOP⁷⁻¹⁰. If we aim at giving good care to women, we cannot neglect their partners and their partners' needs. We therefore assessed the psychological consequences of TOP for women and men, 2-7 years after the event in a cross-sectional study. Responses from the women have been described in more detail elsewhere¹¹. The women's adjustment to TOP was strongly dependent on the perceived support of their partners. In the present study, we examined psychological responses to TOP in both men and women in order to find risk factors for poor psychological outcome in both partners and to explore their interaction.

METHODS

Two hundred and fifty-four couples, who underwent pregnancy termination because of fetal anomaly before 24 weeks of gestation, were asked to participate in a retrospective questionnaire study. There were three participating hospitals: the University Medical Centres of Utrecht, Amsterdam and Maastricht, all in the Netherlands. The ethical committees of the hospitals approved the study design. The assessments were carried out between 2–7 years after the event. At the time of TOP, the attending gynaecologist or head of the unit of prenatal diagnosis sent a request for participation to the woman and her partner. After written informed consent, anonymous but coded questionnaires were mailed.

Standardized and validated questionnaires on the socio-demographic situation, medical and obstetric history, and psychological outcomes were used. Maladaptive symptoms of grief were measured by the Inventory of Traumatic Grief (ITG)^{12, 13}, and symptoms of post traumatic stress by the Impact of Event Scale – revised (IES-r) with the subscales intrusion, avoidance, and arousal¹⁴⁻¹⁷. The presence of psychological and somatic maladaptive symptoms were assessed by three subscales of the Symptom Checklist-90 (SCL-90): somatic complaints, anxiety and depression^{18, 19}. The following cut-off points were indicative of pathologic outcome: ITG ≥ 90 ^{12, 13}; IES ≥ 39 (R. Kleber, personal communication); SCL somatic complaints: women ≥ 34 , men ≥ 27 ; anxiety: women ≥ 27 , men ≥ 22 ; and

depression: women ≥ 42 , men ≥ 34 (95th percentile)¹⁴. Self-designed questionnaires were used to assess regret and doubt. The scores on the above-mentioned (sub) scales were considered as outcome measures.

The following variables were considered as predictors: parental age, level of education (low, 1; middle, 2; high, 3), being religious or not, the presence or absence of living children at the time of TOP and at assessment, gestational age, method of TOP (dilatation and evacuation; hormonal induction of labour; selective reduction), severity of the fetal anomaly, experience of life events during the 2 years before assessment, time elapsed since TOP, and level of perceived partner support (very much/much, 1; moderate, 2; none to little, 3). A critical percentage of completed questions is a prerequisite to the use of validated questionnaires. If one of the partners, or both, had not filled out the required minimum percentage of the questionnaire, the couple was excluded from the study.

SPSS for Windows (version 10.1, SPSS Inc., Chicago, Ill.) was used for data management and statistical analysis. Results were summarized with the use of standard descriptive statistics: counts and percentages for categorical variables, and means, standard deviations, and ranges for continuous variables. Groups were compared for equivalence in baseline characteristics using the Chi-square test or Fisher exact test, as appropriate, for categorical measures and Student's t-test for continuous variables. Subject characteristics that showed an association with the outcome measures (Pearson or Spearman correlation coefficients where appropriate; $p < 0.10$) were considered candidate variables for further analysis. Stepwise multiple linear and logistic regression analyses were conducted to identify independent factors. Predictors were entered on step 1 and perceived partner support was separately analysed on step 2, because it is potentially subject to recall bias. With all tests, p -values < 0.05 were considered statistically significant.

RESULTS

Of the 254 eligible couples, seven could not be traced. The response rate of the remaining couples was 79 % ($n = 196$) for the women and 62 % ($n = 153$) for their partners (all male). In 61% of the couples, both partners responded. These were included in the current study that reports on 151 couples. The women and men who participated did not differ from those who did not participate with respect to duration of pregnancy at termination, assessed viability of the disorder, and proportion of Down syndrome cases. The women who participated, while their partners did not, showed no significant differences in comparison with those who had a responding partner in demographic and medical characteristics, nor in the level of psychological distress. Table 1 shows the demographic and obstetric characteristics of the participants, subdivided in couple-shared and individual factors. Women were younger, more often not working, had a lower level of

Table 1. Obstetric and socio-demographic characteristics of the preparticipants. Data are presented as number and percentage or as mean, SD, and range

Couple shared factors	men	women	difference*	correlation
Total number of terminations	151 (17.9); 3.5, 12-24			
Gestational age (weeks)				
Method of termination				
- Dilatation and evacuation	38 25.2%			
- Hormonal induction of labour	112 74.2%			
- Selective reduction	1 0.6%			
Not likely to be compatible with survival >6 months	62 41.1%			
Time elapsed since TOP (years)	151 (4.1); 1.4, 2-7			
Individual factors	nr of pairs	men	women	correlation
Age at TOP (years)	151	35.6 (5.2); 18-54	34.3 (4.4); 23-43	R = 0.54 p < 0.0001
Children at TOP (yes)	146	44 30.1%	36 24.7%	R = 0.59 p < 0.0001
Children at assessment (yes)	149	133 89.3%	131 87.9%	R = 0.87 p < 0.0001
Education	151			
Low		19 12.6%	33 21.9%	
Medium		43 28.5%	50 33.1%	R = 0.49 p < 0.0001
High		89 58.9%	68 45.0%	
Employment (paid job: yes)	151	143 94.7%	111 73.5%	R = 0.06 n.s.
Religion (yes)	145	69 47.6%	64 44.1%	R = 0.35 p < 0.0001
Professional help seeking (yes)	150	24 16.0%	36 24.0%	R = 0.44 p < 0.0001
Life events (yes)	134	54 40.3%	70 52.2%	R = 0.36 p < 0.0001
Partner support	144			
(Very) much		89 61.8%	92 63.9%	
Moderate		46 31.9%	44 30.6%	
None to little		9 6.3%	8 5.5%	R = 0.35 p < 0.0001

TOP: termination of pregnancy, *Difference between men and women tested with the paired t-test or chi-square test where appropriate.

education, and reported more life events over the previous 2 years than their partners. The perceived partner support was high and only few women and men (5.5% and 6.3%, respectively) reported that they had felt no to very little support.

Table 2 shows the levels of grief, posttraumatic stress symptoms, somatic complaints, anxiety and depression, and the presence of feelings of doubt or regret. On all these outcome measures, women had significantly higher levels of symptomatology, both as a group and as an individual within the couple, with the exception of the level of avoidance (an intra-psychic process in which the implications of the event are denied or avoided) and the presence of doubt about the decision to terminate. The levels of grief and post traumatic stress symptoms showed moderate intracouple correlation (correlation coefficients <0.40), while no significant intracouple correlation was found for the outcomes of somatic complaints and anxiety and depression (Table 2; Figures 1 and 2). The proportion of pathological outcomes was usually higher in women, but this difference showed a trend toward statistical significance only for symptoms of posttraumatic stress (Table 2). When we related the outcome measures within couples, it appeared that pathological scores never occurred simultaneously (empty right upper quadrants of Figures 1 and 2).

An overview of significant correlations between predictors and outcome measures is presented for men and women separately (Table 3). The level of education was most consistently related to problematic outcome in both sex groups: low-educated participants had more unfavourable scores on the psychological inventories. Other predictors only occasionally showed a significant relationship with the outcome measures either in both gender groups or in one group (being religious in men). Parental age, having other living children at the moment of TOP, and the presence of life events prior to assessment were statistically unrelated to the outcome measures, while the time elapsed since TOP occasionally showed a significant trend ($p < 0.10$) in either gender. The (nearly) significant predictors were included in subsequent multiple regression analyses, performed separately for men and women (Table 4a and 4b). Reported partner support was not significantly correlated with any of the predictors.

The regression analyses in women yielded that low education was related with higher posttraumatic stress scores. Advanced gestational age and presumed viability were independently associated with retrospective doubt about the decision to terminate pregnancy. The amount of explained variation on step 1 was small and ranged between 3.0 and 10.3%. Entering values for perceived partner support (step 2) showed an independent effect on grief and added somewhat to the model ($\Delta R^2 = 0.031$; $p < 0.05$). For none of the studied outcome measures, the total amount of explained variation exceeded 11%, with the lowest value for somatic complaints (3.0%) and the highest for doubt (10.7%).

In men, there was only one independent effect on the outcome: TOP for an anomaly compatible with life was associated with higher scores of depression.

Religion showed a trend toward significance in 3 of 6 outcome measures. Entering perceived partner support (step 2) did not add further independent effects to the model. The overall amount of explained variation ranged from 7.5% (doubt) to 11.9% (grief).

Table 2. Overview of the psychological outcome measures in men and women who had experienced termination of pregnancy. Data are presented as mean, SD, and range, or as number and percentage

Outcome measure	Men	Women	Male-Female difference ¹	Intracouple difference ²	Intracouple correlation	Pathology ³	
						Men	Women
ITG total (grief)	38.6 (11.4); 29-90	44.1 (16.2); 29-119	p < 0.001	p < 0.0001	R = 0.39; p < 0.0001	0.7%	2.7%
IES total (PTSD symptoms)	12.8 (16.6); 0-83	18.1 (18.0); 0-82	p < 0.02	p < 0.002	R = 0.31; p < 0.0001	4.9% #	14.7%
IES intrusion	6.3 (7.0); 0-35	8.7 (7.4); 0-29	p < 0.01	p < 0.001	R = 0.35; p < 0.0001		
IES avoidance	3.9 (6.7); 0-36	5.0 (7.2); 0-34	n.s.	n.s.	R = 0.22; p < 0.01		
IES arousal	2.6 (5.0); 0-26	4.4 (6.1); 0-33	p < 0.01	p < 0.005	R = 0.17; p < 0.05		
Somatic complaints	14.7 (5.1); 12-46	16.9 (6.0); 12-45	p < 0.01	p < 0.001	R = 0.08; n.s.	4.1%	3.4%
Anxiety	12.1 (4.5); 10-47	14.0 (6.0); 10-46	p < 0.05	p < 0.005	R = 0.01; n.s.	3.4%	4.1%
Depression	20.8 (7.5); 16-57	26.0 (11.0); 16-65	p < 0.0001	p < 0.0001	R = 0.11; n.s.	8.2%	11.0%
Regret (yes)	2 (1.3%)	11 (7.3%)	p < 0.002	p < 0.002	R = 0.41; p < 0.0001		
Doubt (yes)	7 (4.6%)	13 (8.6%)	n.s.	n.s.	R = 0.27; p < 0.01		

¹ difference between men and women tested with the unpaired t-test or chi-square test where appropriate;

² intracouple difference tested with the paired t-test; n.s.: not significant;

³ proportion of women and men with a score above the cut-off level to define pathology (see methods for definitions);

p < 0.10 (trend).

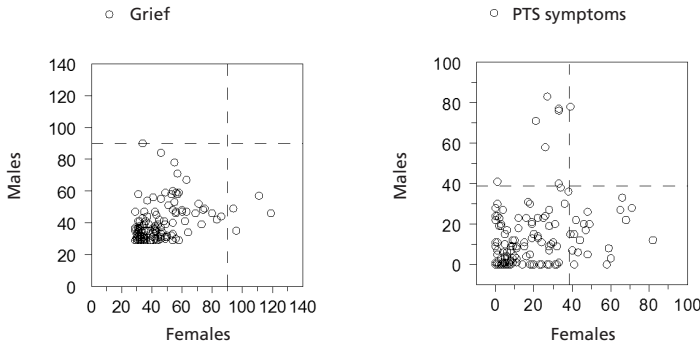


Figure 1. Intracouple relationship for levels of grief and posttraumatic stress symptoms. Dotted lines represent established cutoff levels for pathology.

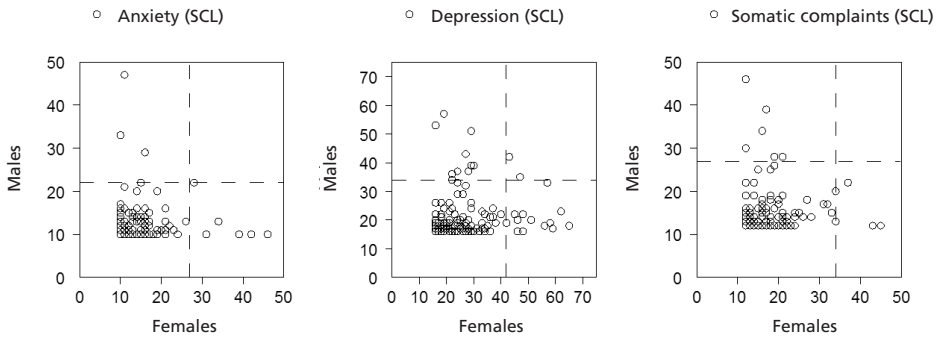


Figure 2. Intracouple relationship for levels of somatic complaints, anxiety and depression. Dotted lines represent established cutoff levels for pathology. Note the difference in cut-off levels between men and women (see methods).

Table 3. Overview of statistically significant relationships between the independent and dependent variables for males and females (n = 2x151). Presented are Pearson or Spearman (1) correlation coefficients

Predictor	Dependent variable														
	Grief (ITG)		Post Traumatic Stress Symptoms (IES-r)				Psychosomatic Symptoms (SCL)				Doubt	Regret			
	♂	♀	Total	Intrusion	Avoidance	Arousal	Somatic	Anxiety	Depression	♂			♀		
Level of education	-0.18*		-0.21*	-0.28***	♂	♀	♂	♀	-0.26**	♂	♀	♂	♀		
Religion (yes)	0.20*		0.18*	0.20*			0.17*	0.18*		0.18*	0.20*				
Gestational age at TOP				0.16 ¹ *										0.17*	
TOP procedure	0.18*														
Lethal anomaly (yes)									0.18 ¹ *					0.21*	
Children at examination (yes)	0.17*	0.18*											0.17*		
Level of partner support													0.17*		

TOP: termination of pregnancy

* p < 0.05, ** p < 0.01, ***p < 0.001. Empty cells indicate a correlation with p > 0.05.

Table 4a. Results of multiple regression analysis for psychological outcome measures in females (n = 151).

Variable	Grief ITG	Posttraumatic stress symptoms IES	Somatic complaints SCL	Anxiety SCL	Depression SCL	Doubt †
<i>Step 1: predictors</i>						
Education	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)
	-1.67 (1.73)	-5.59 (1.97) **	-1.21 (0.65) #	-0.77 (0.61)	-1.69 (1.18)	0.12 (0.43)
Gestational age	0.57 (0.40)	0.22 (0.44)	-0.05 (0.15)	-0.06 (0.14)	-0.20 (0.27)	0.22 (0.11) *
Lethal anomaly	3.77 (2.74)	-2.19 (3.07)	0.11 (1.03)	0.63 (0.96)	2.08 (1.86)	2.53 (1.10) *
Children at assessment	4.25 (4.00)	5.80 (4.45)	0.53 (1.49)	1.76 (1.39)	3.98 (2.71)	-9.01 (12.14)
Elapsed time	-0.35 (0.99)	-1.00 (1.11)	-0.02 (0.37)	0.34 (0.34)	1.21 (0.67) #	-0.01 (0.23)
Religion	-1.97 (2.70)	-2.04 (3.02)	-0.73 (1.01)	-0.69 (0.94)	-0.20 (1.83)	0.47 (0.68)
F model	0.99	2.16 *	0.69	0.93	1.53	*
R ² on step 1	0.042	0.089	0.030	0.040	0.064	0.103
<i>Step 2: partner support</i>						
	4.90 (2.31) *	4.06 (2.59)	-0.15 (0.88)	0.13 (0.82)	2.34 (1.58)	0.49 (0.56)
F model	1.52	2.22 *	0.59	0.79	1.64	*
R ² on step 2	0.073	0.105	0.030	0.040	0.079	0.107
Change in R ²	0.031 *	0.016	0	0	0.015	0.004

* p < 0.05, ** p < 0.01, # p < 0.10 (trend), † logistic regression.

Table 4b. Results of multiple regression analysis for psychological outcome measures in males (n = 151)

Variable	Grief ITG	Posttraumatic stress symptoms IES	Somatic complaints SCL	Anxiety SCL	Depression SCL	Doubt †
	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)
<i>Step 1: predictors</i>						
Education	-1.91 (1.33)	-3.44 (2.02) #	-1.16 (0.59) #	-0.69 (0.53)	-1.16 (0.91)	0.57 (0.61)
Gestational age	0.44 (0.28)	0.68 (0.42)	-0.15 (0.12)	-0.08 (0.11)	0.04 (0.19)	0.08 (0.13)
Lethal anomaly	3.67 (1.89) #	4.07 (2.87)	0.86 (0.82)	1.15 (0.74)	2.72 (1.27) *	0.58 (0.90)
Children at assessment	5.58 (3.19) #	0.72 (4.86)	-0.80 (1.39)	-0.48 (1.25)	1.11 (2.15)	-8.35 (14.38)
Elapsed time	0.04 (0.70)	-0.02 (1.06)	0.38 (0.31)	0.45 (0.28)	0.48 (0.47)	0.54 (0.31)
Religion	2.76 (1.92)	3.75 (2.93)	1.23 (0.83)	1.34 (0.75) #	2.42 (1.28) #	2.18 (1.13) #
F model	2.59 *	1.88 #	1.88 #	1.89 #	2.11 #	#
R ² on step 1	0.107	0.080	0.079	0.080	0.087	0.074
<i>Step 2: partner support</i>						
F model	2.49 *	1.71	1.78 #	2.15 *	2.14 *	0.30 (0.62)
R ² on step 2	0.119	0.085	0.087	0.104	0.102	0.075
Change in R ²	0.012	0.005	0.008	0.024 #	0.015	0.001

p < 0.05, ** p < 0.01, # p < 0.10 (trend), † logistic regression.

DISCUSSION

This study was set out to investigate psychological consequences of TOP for fetal anomaly separately for men and women. We tried to identify risk factors for poor psychological outcome after TOP in both sexes, and to explore the degree of concordance between partners. Previously, we have published predictors only for women²⁰. The present cohort differs from the cohort described in this study, since only women whose partner also participated were included. For that reason 23% of women were excluded from the present study. The remaining group tended to have a more favourable outcome (not significant), which suggests a positive effect of involvement of the partner.

Overall, our study showed that the majority of couples adapt well to their loss without evidence of serious psychopathology. A number of respondents, however, showed TOP-related problematic responses even many years after the event. These problematic findings concerned symptoms of posttraumatic stress and depression, and, to a lesser extent, reactions of grief. Men as well as women experienced TOP more as a trauma than as a loss event. Although the scores on almost all psychological outcome measures were significantly higher in women than in men, the differences between both groups were moderate (Table 2). The proportion of pathological outcomes did not differ significantly between men and women with the only exception that women tended to have pathological levels of posttraumatic stress more frequently (Table 2). A remarkable finding is that partners never had pathological scores simultaneously (Figures 1 and 2). Although highly significant, we found only modest correlations between men and women for levels of grief and posttraumatic stress symptoms (Table 2), likely due to the number of couples showing discordant scores (Fig. 1). The same holds true for the levels of somatic complaints, anxiety, and depression, for which the intra-couple relations were not statistically significant (Fig. 2). The overall amount of variance explained by the studied predictors was relatively low (maximum 12 and 11%, in men and women, respectively). A substantial part of the determinants influencing psychological outcome positively were the same in men and in women, with high level of education and good partner support being the most important ones, followed by earlier gestational age at TOP, incompatibility with life, and having children at the time of assessment (Table 3). However, regression analysis showed that for men only lethality of the fetal anomaly was independently related with depression, with a trend for religion (Table 4b).

In general psychological research, women are described to express more symptoms of distress²¹, and to express more negative emotions after stressful life events such as bereavement^{5, 22} than men. Also, studies on early intrauterine or perinatal bereavement show almost consistently less-severe and less-prolonged distress in fathers than in mothers⁴⁻⁶. Our findings point in the same direction, but differences among sexes were very small. Similarly Goldbach et al.²³ showed less distress in men shortly after spontaneous loss of pregnancy, but after 1–2 years, they found nearly the same levels of symptomatology in both parents.

Prior studies based on TOP have found evidence that the grieving process is dependent on partner support⁷⁻¹⁰. In the current study, women in particular showed lower levels of grief and depression when they had perceived good support of their partner. This result has to be further evaluated in prospective studies, because of a possible recall bias disturbing assessments long after TOP.

The discordance in couples in which either the man or the woman showed pathological outcome levels was consistent in all measurements (lower right and upper left parts of Figures 1 and 2). It is rare for partners to exhibit a pathological level of outcomes simultaneously. Even without the use of cut-off points for pathology, which might be debatable, the empty right upper parts in Figures 1 and 2 illustrate this phenomenon. Owing to the cross-sectional design of the study, we do not know whether this discordance of pathology is a continuing factor in the couples' grieving process or the result of a time-related changing pattern between both partners. In a longitudinal study of perinatal loss by²⁴ similar rarely congruent scores of high distress in both partners were reported and the pattern tended to be a chronic one. The results of Vance and of the current study provide valuable information to pass on to patients who sometimes tend to blame each other for not showing the same degree of psychological distress during the coping process.

In counselling at TOP, the caregiver focuses primarily on women. On first thought, our results seem to justify this procedure, given the more problematic outcomes in women. Nevertheless, we emphasize the importance of involving both parents in the counselling. Firstly, because grief and posttraumatic stress symptoms only moderately differ between men and women and problematic grieving can occur in men as well. Secondly, because in women good adjustment to TOP is dependent on the level of support that they perceive from their partners. And, finally, because the intra-couple results in this study suggest that there is a mutual influence between the partners in the process of grieving.

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