The utility of a psychological intervention for coping with spontaneous abortion

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Background: The object of this study is to implement and to examine the effectiveness a psychological support intervention drawing from three clinical techniques (support, psychoeducation, Cognitive-Behavioural Therapy) for women who have suffered a spontaneous abortion. Method: 134 women participated in the study: 66 composed the Immediate Intervention group (II) and 68 the Deferred Intervention (DI) group. All participants completed the Hospital Anxiety and Depression Scale (HADS) and the Impact of Events Scale – Revised (IES-R) at 3 and 10 weeks as well as 6 months following study enrollment. Results: Results at three weeks show significant differences between the groups for anxiety, depression and event impact. Multiple regression analyses showed that intervention group and depression antecedents were significant predictors of overall adaptation after a miscarriage. Conclusions: In terms of prevention, a brief early single-session psychological intervention appears to be a particularly pertinent, efficacious and cost-effective method for addressing psychological distress following miscarriage.

Keywords: miscarriage; support; anxiety; depression

Introduction

Spontaneous abortion or miscarriage is a relatively common event, occurring in between 12 and 24% of confirmed pregnancies (Carter, Misri, & Tomfohr, 2007). It is the early and unanticipated termination of a pregnancy which occurs before 24 weeks of gestation, and for many women it is the loss of a child (Regan, 2001). Paradoxically, while the experience of miscarriage may be relatively common from an epidemiological standpoint, the feelings of isolation and blame felt by women who have experienced miscarriage are often poorly confronted by not only their immediate support system, but by health professionals as well (Regan, 2001).

The experience and psychological consequences of a miscarriage have been widely studied, focusing on sadness, depressive symptoms, anxiety, and even post-traumatic stress disorder (PTSD). Studies show that 40% of women suffer intense sadness, and 20–40% suffer symptoms of anxiety (Lok & Neugebauer, 2007). Many studies have evaluated the magnitude of depressive symptoms reported by 20–55% of women (Lok & Neugebauer, 2007). At two weeks following a miscarriage, the proportion of women
suffering significant depressive symptoms was 3.4-times higher than pregnant women, and 4.3-times higher than women in the general population (Neugebauer et al., 1992). A French study found 3 months after a miscarriage that 51% of women fulfilled DSM-III criteria for depression (Garel et al., 1992). Miscarriage is an unexpected event that can imply sudden and intense pain, bleeding, hospitalisation, and surgical intervention; it thus constitutes a physically traumatising event. In one study, the prevalence of PTSD was observed to be 25% one month after the loss and at 7% four months post-loss (Engelhard, van den Hout, & Arntz, 2001).

Many authors have noted the importance of support following miscarriage. Two Anglophone studies evaluated the efficacy of a specialised clinical approach (Nikcevic, 2003; Roswell, Jongman, Kilby, Kirchmeier, Orford, 2001) yet few randomised controlled studies have aimed at reducing psychological distress in women facing miscarriage. Swanson (1999) tested the effect of a specific and brief therapeutic approach of three sessions providing women with the opportunity to discuss their experience and the difficulties they encountered. Women who received this support showed early in evaluations that they had lower scores of depression and anger. One study, however, observed no significant effect for a structured therapeutic approach using a midwife (Adolfsson, Berterö, & Larsson, 2006). Another studied the efficacy of a one-session psychological debriefing; there were no significant results four months following this study on measures of anxiety, depression, or event impact (Lee, Slade, & Lygo, 1996). Yet another study showed limited but promising results using data from previous studies to develop a brief telephone support intervention (Neugebauer et al., 2007).

Cognitive-behaviour therapy (CBT) is a well-defined, precise, and comprehensive psychological intervention that aims to influence dysfunctional emotions, behaviours and cognitions through a goal-oriented procedure. Many techniques used in CBT can be successfully transposed into different situations that cannot be strictly defined as psychotherapeutic. For example, promising results have been shown in CBT-based prevention interventions on post-traumatic stress (Foa, Hearst-Ikeda, & Perry, 1995). Many authors underline the interest in using CBT techniques in situations necessitating emotional adaptation, such as grief and loss (Malkinson, 2001; Matthews & Marwit, 2004). CBT techniques and principles have already been successfully applied to the perinatal period, notable in the prevention of post-partum depression (Chabrol et al., 2001) and breastfeeding intervention (Callahan et al., 2003). Carter et al. (2007) evoked the possibility of using CBT for helping women deal with miscarriages emphasising that these methods were particularly suitable for dealing with the feelings of guilt, incapacity, fear, and depression often noted in miscarriage experiences. To our knowledge, no study has yet been undertaken to explore the suggestions of Carter et al. (2007).

As noted above many non-therapeutic approaches evaluated by different studies (Lee et al., 1996 and Neugebauer et al., 2007) showed no marked effects. Thus, simply discussing the experience does not seem to have any notable positive impact on well-being, and it seems logical to provide more effective support and supplement therapy with a more active therapeutic approach. The reality of the terrain suggests that providing long-term psychological therapy or, at the very least, several sessions, can be wieldy and expensive, and is not usually accepted by women (Séjourné, Callahan, & Chabrol, 2009) and that providing a single session intervention has shown to be effective in previous research (Chabrol et al., 2001 for post-partum depression and Callahan et al., 2003 for breastfeeding).
Given the success and cost-effectiveness of CBT approaches, it was hypothesised that a single-session intervention based on CBT techniques including psychoeducation along with empathetic emotional support would be beneficial for women dealing with miscarriage. If CBT can be applied to preventing the psychological distress associated with a miscarriage, it appears opportune to examine its effectiveness using a quasi-experimental approach. The current study seeks to develop and evaluate a CBT-based intervention for women dealing with miscarriage.

Method

Participants
The study was conducted between October 2005 and March 2007 in the maternity service of two semi-private clinics in Toulouse, France. All participants were adult French-speaking women who had undergone dilation and curettage (DC) or vacuum aspiration (VA) for the uncomplicated and unanticipated loss of a pregnancy (inclusion criteria). The principal investigator (psychologist/researcher) and co-author of the current study (NS) carried out the study detailed below and all women were invited to participate by this individual.

Thus, 170 women were met on the day of their surgical intervention and were randomly assigned based on the date to either an Immediate Intervention group on odd-numbered days (II) or to a Deferred Intervention group on even-numbered days (DI). Twenty-two women (13%) refused to participate and 14 (8.2%) did not meet inclusion criteria (poor mastery of the French language, no stable postal address). The remaining sample of 134 women was studied (mean overall age = 31.82 years; SD = 4.99; range 22–44): 66 were assigned to the II group (mean age = 31.01 years, SD = 4.45; range 24–43) and 68 were assigned to the DI group (mean age = 31.87, SD = 5.32; range 22–42). The mean duration of pregnancy at the time of miscarriage was 9.05 weeks amenorrhoea (SD = 2.46; range 4–13) for the II group and 9.31 weeks (SD = 2.13; range 4–14) for the DI group.

The general characteristics of the two groups of participants are represented on Table 1. None of these group differences were statistically significant.

Instruments
Socio-demographic information and details regarding the miscarriage were gathered using an experimenter-designed questionnaire specific to the current study.

The Hospital Anxiety Depression Scale (HADS) is a 14-item scale detailing anxious and depressive symptomology (Zigmond & Snaith, 1983; French translation Lépine, Godchau, Brun, & Lempérière, 1985). The 14 items are divided into 2 scales and items evaluating depression are alternately presented with those evaluating anxiety. Intensity of each symptom for the previous week is evaluated on a Likert-type scale going from 0 to 3. The scores for each subscale can total between 0 and 21, higher scores indicative of higher levels of each symptom. A cut-off score of 8 for each subscale was used to determine the presence of either depression or anxiety (Bjelland, Dahl, Haug, & Neckelmann, 2002). In this study, Cronbach’s alphas were .82 for the whole scale, .66 for anxiety and .78 for depression subscales.

The Impact of Events Scale, Revised (IES-R) provides a measurement of PTSD symptoms (Horowitz, Wilner, & Alvarez, 1979; Weiss & Marmar, 1997). For this study, the translated and validated French version was used (Brunet, St-Hilaire, Jehel,
The IES-R has 22 items over three subscales corresponding to symptoms of PTSD indicated in the DSM-IV: intrusion, avoidance, and hyper vigilance. Each item is evaluated on a 5-point scale (0 = not at all and 4 = extremely) arriving at a total score of between 0 and 88. In this study, Cronbach’s alphas were .92 for the whole scale, and, respectively, .88, .78, .80 for the three subscales.

**Procedure**

The study was presented to the ethics boards of the participating institutions and received full permission to proceed. All women were initially met at the clinic on the day of surgical intervention. Once the study was presented and fully informed consent provided, the women agreeing to participate signed informed consent forms. All participants were able to contact the principal investigator at any time.

All women in the II group were asked to participate in a support intervention consisting of one psychological session on the day of the surgical intervention. The support intervention was composed of three elements. First, an empathic listening approach was used in order to encourage therapeutic alliance and emotional expression. Second, a psychoeducational approach was aimed at helping the women understand the context of miscarriage, their incidence, and as well understanding normal psychological reactions and their repercussions. This involved, for example, systematically asking women if they were aware of the actual frequency of miscarriage; in the event that they did not know or were mistaken about their estimates, the correct knowledge was provided to them. Information for the construction of this component was gleaned from specific and detailed sources on miscarriage (Regan, 2001). Finally, techniques from cognitive behaviour therapy like cognitive reframing.
and problem resolution were employed. Cognitive reframing was used to help women dealing with feelings of guilt or responsibility. For example, this involved helping women imagine other possible causes for miscarriage when they initially provided a cause that suggested personal responsibility, like a period of excessive fatigue at work. Reminding women that the majority of miscarriages were due to chromosomal anomalies and that all women who have exhausting work schedules do not necessarily have miscarriages provided a means for them to reduce their feelings of personal responsibility and any guilt associated with it. Problem resolution was used to help women finding concrete solutions to problems anticipated and encountered (dealing with social relationships and insensitive comments, dealing with significant other relationships, anticipated pregnancies, etc.) and facilitating the use of adaptive coping strategies. This could, for example, consist in helping women to elaborate responses to unpleasant comments from their family and friends by stating their point of view and affirming themselves in a non-threatening manner. The interviews lasted on average 37 min (SD = 14.38 min; range of 20–90 min). Two weeks after the interview, they received a telephone follow-up.

The women in the DI group were informed that they were participating in a study on the psychological experience of miscarriage. They were provided with the opportunity for a support intervention at 3 months post-miscarriage and contacted immediately following the second set of questionnaires at 10 weeks through telephone calls or e-mail. Those women desiring to participate confirmed their participation following this contact.

All women received the two follow-up questionnaires at 3 and 10 weeks, as well as at 6 months post-miscarriage based on the original date of intervention at the clinic.

Data analysis
All statistical analyses were carried out using Statistica 7.0. One-tailed Student’s t-tests were used to estimate means difference between groups. Post-hoc power analysis for Student’s t-test showed that observed power was between 0.48 and 0.84 at 3 weeks, between 0.17 and 0.28 at 10 weeks, and between 0.07 and 0.39 at 6 months. Chi-square tests allowed for examining group differences with regards to qualitative nominal data. Multiple regression analyses provided insight on the factors likely to influence negative symptoms following miscarriage. The subjects-to-predictors ratio was adequate for multiple regression analysis following the traditional guideline of at least ten subjects per predictors (Howell, 1997). The minimum level of $p < 0.05$ was adopted for determining significant differences.

Results
Access to psychological support
Among the women who participated in the II group, 43 (86%) felt that it was helpful while still 9 (20%) felt it was insufficient, some women feeling the need for more support. Not all of the women in the DI group responded when contacted at 10 weeks post-miscarriage. Thus, the deferred interview was offered to a total of 48 women: 24 refused the interview, 10 accepted, and the others did not follow-up on the offer.

While participation was high initially, it dropped steadily over the period of the entire study. For the II group, of the 66 participants 50 (75%) responded at 3 weeks,
45 (68%) at 10 weeks and 33 (50%) at 6 months. Respondants and non-respondants showed no significant scores on measures gathered at 3 weeks. This rate was similar for the DI group of 68 participants with 52 (76%) responding at 3 weeks, 37 (54%) at 10 weeks, and 34 (50%) at 6 months. However, women who did not answer at 6 months had significantly higher scores on anxiety ($t(40) = 2.05; p = 0.04$) and IES-R ($t(40) = 2.53; p = 0.01$) at 3 weeks than those who answered.

**Comparisons between groups**

Student $t$-tests revealed that at 3 weeks post-miscarriage, the women in the DI group had higher scores on anxiety ($t(100) = −2.62; p = 0.00$), depression ($t(100) = −1.64; p = 0.04$) the total IES-R ($t(100) = −2.22; p = 0.02$) as well as the IES-R ‘Intrusion’ subscale ($t(95) = −2.01; p = 0.04$) and the ‘Hyperactivity’ subscale ($t(95) = −1.61; p = 0.04$) (Table 2).

There were no significant differences at either 10 weeks or 6 months post-miscarriage with regards to symptom intensity. However, at 10 weeks, more women in the DI group showed elevated scores on depression (score HADS > 8); one women (2.2%) in the II group compared to 8 women (21.6%) in the DI group ($\chi^2 = 7.82; p < 0.01$).

**Multiple regression analyses**

Several regression analyses were performed in order to examine the different scores on psychopathology indicators for the entire sample of women who responded at 3 weeks post-miscarriage ($n = 102$). Predictive variables were: intervention group (II vs. DI).

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<th>3 weeks</th>
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<tr>
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<td>7.16 (4.25)</td>
<td>6.50 (3.49)</td>
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<tr>
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<td>5.08 (3.60)*</td>
<td>3.48 (3.20)</td>
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<td>4.91 (4.84)</td>
<td>2.33 (3.87)</td>
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*Starred results are significant at $p < .05$. 

Table 2. Questionnaire data for the two intervention groups (II et DI) gathered at three different times post-miscarriage.
DI), age, marital status, number of children, previous depression, number of gynecological antecedents, desired pregnancy, pregnancy duration, and importance attributed to the loss (obtained through an ordinal score between 1 and 4 to estimate the impact of the women’s loss, Table 1).

The resulting model explained 16% of the variance for anxiety. Two significant predictive factors were revealed for anxiety: intervention group ($\beta = 0.24; p < 0.05$) and previous depression ($\beta = 0.24; p < 0.05$).

The model explained 12% of the variance for depression. Only previous depression predicted the scores on depression following miscarriage ($\beta = 0.34; p < 0.01$).

The model explained 31% of the variance for scores on the IES-R. Three significant predictive factors were revealed: intervention group ($\beta = 0.23; p < 0.01$), previous depression ($\beta = 0.39; p < 0.001$) and the importance attributed to the loss ($\beta = 0.22; p < 0.05$).

**Discussion**

The overall number of participants and the response level were acceptable in the current study. While the sample is specific and the results cannot be generalised to all the women who have had a miscarriage, the two groups considered were comparable on most of the demographic characteristics studied. All measures of psychological adaptation at 3 weeks following miscarriage reveal the difficulties confronted by the women. The depression and anxiety scores were similar to those seen in previous studies (Nikcevic, Tunkel, & Nicolaides, 1998; Roswell et al., 2001) while measures of PTSD were slightly higher than those seen in previous studies (Engelhard et al., 2001). An important first result of the current study confirms the psychological distress experienced by most of women facing miscarriage.

At three weeks post-miscarriage a comparison of the scores between the two groups shows that women having benefited from an interview and telephone follow-up showed lower scores and less intense symptoms of anxiety, depression and PTSD than those who were offered deferred follow-up. Scores on all measures, however, decreased over time and there were no significant differences seen at either 10 weeks or 6 months post-miscarriage. This result is in keeping with previous studies in miscarriage interventions and some authors have suggested that feelings of sadness and grief are absent at 3 or 4 months post-miscarriage and thus it is difficult to measure the impact of a support intervention (Adolfsson et al., 2006; Lee et al., 1996). That being said, it was noted in the current study that significantly more women in the DI group showed clinically significant depressive symptoms 10 weeks after the intervention. Moreover, it is unclear whether women who receive no intervention or support following miscarriage are truly ‘cured’ of their feelings anxiety; or rather simply fall into a pattern of denial. It was the impression of the current principal investigator that women who refused the intervention in the DI group at 3 months did not want to ‘revisit’ their experience and that perhaps many suffered feelings of unresolved grief. Significant differences on anxiety and PTSD at 3 weeks between women who sent back questionnaires at 6 months and women who did not may confirm this hypothesis. This would be an important element for future studies as it would provide additional insight and support for providing immediate intervention.

The regression analyses are in keeping with these results since the intervention group was shown to be a significant predictive factor for anxiety and post-traumatic stress. Aside from the intervention group, and also in keeping with results of previous
studies (Janssen, Cuisinier, Graauw, & Hoogduin, 1997), the principal predictive variable of anxiety, depression and post-traumatic stress was previous depressive episodes, which is an important point for predicting those who might benefit from more intervention. In order to have the most dependable information on previous depressive episodes, this information was combined with information on taking antidepressors. Give the responses provided by the women this appeared to be indeed the best means for taking into account established previous depressive episodes. That being said, future studies could incorporate a wider diversity of variables associated with previous depressive episodes, including their duration and frequency as well as any psychotherapy.

The absence of initial measures does not allow for taking into account a global evolution of symptoms over time and presents a major limit to the current study. Thus, the study does not fully measure potential intervention efficacy starting at the initial period following miscarriage and suggests the need to put into place a series of time-dependent measures as was done by Swanson (1999). It is, however, important in this type of study to take into account the potential placebo effect linked to the use of questionnaires and simple participation in the study, particularly for the DI group. Neugebauer et al. (1992) noted a fortuitous therapeutic effect on depressive symptoms through the use of research interviews carried out by telephone following pregnancy loss. Comparison using an early measure would have allowed for analysis of predictor variables implicated in long-term differences in symptoms as well as potentially aggravating or protective factors. To fully confirm the utility of this type of intervention, a more detailed and in-depth study will be necessary in order to take into account desired effects over time, and as well any non-desirable effects, including those that could be potentially deleterious as has been found for some psychological debriefing interventions following trauma (Feldner, Monson, & Friedman, 2007; Iucci, Marchand, & Brillon, 2003).

While this research does emphasise the benefits of the intervention under study, it is important to note that other variables have a significant impact on the success of psychological intervention: context, relationships with others, and expectations of the women studied. It should also be noted that no apparent benefit was obvious after 10 weeks in the measured domains. Another limit which complicates interpretation is the declining response rate over the period of the study. It does not appear related to intervention group (since the rates are nearly identical). It can be suggested that the lack of response to the questionnaires was related to the participant’s psychological state, but unclear whether it can be attributed to higher distress, less distress, or a decision to avoid completing the study.

Finally, a large majority in the II group found the intervention useful and moreover 20% would have liked more support. In order to provide women with the necessary psychological support following a miscarriage, it seems clear that systematic counselling be provided at the time of the event, with no delay. This type of intervention would allow to take into account from the very beginning anxious and depressive symptoms experienced by women along with any subclinical symptoms which may not necessarily impel women to seek help later on yet may negatively impact their well-being in a significant and durable manner. Dollander and de Tychey (2000) noted in this vein that, with regards to primary prevention, the grief process starts immediately following the loss. The early intervention carried out in the current study was particularly appreciated by the women participating and many expressed feelings of being supported and understood. Many felt that they were given a means for dealing
with difficulties surrounding miscarriage; in particular for dealing with their entourage and with significant others, as well as helping to confront irrational beliefs about their miscarriages and any potential guilt they might have felt. It is also possible that by allowing women to confront their feelings and difficulties, the intervention might have an impact in the future, in particular with the anxiety that many women feel regarding pregnancy following a miscarriage.

**Conclusion**

Although miscarriage is a relatively common event in a woman’s reproductive life, it represents a loss and can lead to psychological distress; the current social–medical climate provides little possibility for support following miscarriage. While not all women who experience miscarriage need psychological help, and although sadness and grief do usually attenuate over time, it seems useful and important to provide an early psychological intervention in order to help women deal with miscarriage. Aside from providing basic support in a time that is widely understood as difficult, this type of intervention could also serve to identify women who are at higher risk for psychological distress or have specific and unique circumstances predisposing them to greater difficulties in facing miscarriage.

**References**


