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Experimental emotional disclosure in women undergoing infertility treatment: Are drop outs better off?

Efharis Panagopoulou [a,*], Anthony Montgomery [b], Basil Tarlatzis [a]

[a] Medical School, Aristotle University of Thessaloniki, Thessaloniki, Greece
[b] Department of Educational and Social Policy, University of Macedonia, Thessaloniki, Greece

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ABSTRACT

So far, the beneficial effects of personal written emotional disclosure have been mainly examined in relation to past or current stressful/traumatic experiences. The anticipation of a medical event has rarely been studied within this paradigm. This randomized-controlled study examined whether written emotional disclosure would reduce emotional distress and increase pregnancy rates in women undergoing in-vitro fertilization treatment. Participants recruited from women who were undergoing IVF in the north of Greece ($n = 148$) were randomized to an emotional-writing condition, a fact-writing condition and a control condition. Outcomes included fertility-related distress, general distress and a positive indication of pregnancy. Psychological and medical information about women who refused to participate were also collected, and this represented a fourth group for analysis ($n = 66$). Results indicated no significant difference between groups in terms of emotional distress. However, a significant difference was observed with regard to pregnancy results, with the non-participants group reporting the highest percentage of pregnancies. The present study did not support the hypotheses that emotional disclosure will reduce infertility-related or general psychological distress and improve pregnancy outcomes in women undergoing in-vitro fertilization treatment. However, women who refused to participate in the study were more likely to get pregnant. Differences in the beneficial effects of emotional disclosure are discussed.

Introduction

So far, the beneficial effects of written emotional disclosure have been mainly examined in relation to past or current stressful/traumatic experiences. The anticipation of a medical event has rarely been studied within this paradigm. A recent meta-analysis indicated that out of 150 studies on emotional disclosure, only two included participants anticipating a stressful medical event (Frattaroli, 2006). In the first study, participants anticipating a bladder papilloma resection who were assigned to the writing condition, showed improved postoperative course (Solano, Donati, Pecci, Persichetti, & Colaci, 2003). However results of a later study conducted by the same authors in patients waiting to undergo an endoscopic operation, found that beneficial effects were present only for patients with low preoperative risk, while patients with high-preoperative risk who were assigned in the writing condition showed a non-significant worse postoperative course (Solano et al., 2007). Given the potential impact of anticipatory psychological distress on medical outcomes it is necessary to further examine the effects of written emotional disclosure on individuals anticipating a medical stressor.

In-vitro fertilization treatment (IVF) is the most frequently used procedure to treat infertility, with an average success rate per cycle of 23.8% (European Society of Human Reproduction and Embryology, 1996). A recent report by Nyboe Andersen et al. (2005) of European fertility clinics showed that the percentage of infants born in Europe after IVF ranges from 0.2 to 3.9%. To date, there is little doubt that in-vitro fertilization treatment is physically and psychologically stressful for both partners. The efforts associated with trying to conceive, uncertainty regarding the likely effectiveness of the treatment, and the physical pain and discomfort of the various invasive procedures all contribute to increased psychological distress (Stanton, Lobel, Sears, & de Luca, 2002). One of the most stressful times of the experience is the waiting for pregnancy test results after the embryo transfer (Demytteranaere et al., 1991). It has further been suggested that such distress may further affect treatment outcomes following IVF (Klonoff-Cohen, Chu, Natarajan, & Sieber, 2001; Verhaak, Smeenk, Van Minnen, Kremer, & Kraaimaat, 2005).

The first goal of this randomized-controlled study was to test the hypothesis that written emotional disclosure in the waiting

* Corresponding author. Tel.: +30 231 0999154
E-mail address: efharis@the.forthnet.gr (E. Panagopoulou).

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period after embryo transfer will reduce emotional distress. In addition, based on a recent review (Klonoff-Cohen, 2005) suggesting that distress related to infertility and its treatment should be differentiated from general distress, the study examined the effects of written emotional disclosure on both general and infertility-specific distress. Secondly, this study tested the hypothesis that written emotional disclosure will positively affect pregnancy outcomes after IVF. Finally, a third exploratory hypothesis was tested to see whether there were any significant differences between the three experimental groups and the non-participants.

Methods

The study was conducted between January 2007 and September 2007. Ethical approval was granted by the Ethics Committee of the Medical School of the Aristotle University of Thessaloniki. Participants were recruited from women who were undergoing IVF in an assisted reproduction clinic in the North of Greece. Women were excluded if they had a history of psychiatric disorder, were unable to understand Greek or English, or if they were undergoing procedures including donor eggs, uteri, and sperm. Finally, women were excluded if they already had participated in the study in a previous IVF cycle. Initially, 250 women were invited to participate. Embryo transfer did not occur in 21 women due to ovarian stimulation syndrome or total fertilization failure. Seven women did not speak Greek or English and 66 refused to participate. Finally, 148 women ($N = 148$), who agreed to participate, were randomized into three groups: the emotional-writing condition (EC), the fact-writing condition (FC), and the control condition (CC). The 66 women, who refused to participate in the study, did agree to fill out all questionnaires and allow access to their medical information. These participants were included in the study as a non-participants (NPs) group. Therefore, the final sample for analysis was 214 women ($n = 214$).

Procedure

Women were informed of the study a day prior to oocyte retrieval. They were invited to participate "in a study to assess the effects of writing about particular topics on infertility and its treatment". On the day of the embryo transfer (2–3 days later) all participants completed the baseline psychological assessments, in the form of structured interview, 2 h after embryo transfer. At the end of the interview participants were randomized in one of the study conditions. Women in the writing conditions were given the diaries together with written instructions. Women in the EC were asked to write, "about your deepest thoughts and feelings regarding the infertility and its treatment. The important thing is that in your writing you really let go and explore your very deepest emotions. Do not worry about grammar or about using correct Greek: the only rule is that once you start writing, you go on writing until the end of the time period". Women in the FC condition were asked to write about the "facts concerning the infertility and its treatment". Women were instructed to write for about 20 min, every day for a week, at night-time before they went to bed. The writing instructions were based on guidelines developed by Pennebaker's group on how to conduct a writing study, adapted for that particular population, and translated to Greek (Pennebaker, 2008). During the study period participants were prompted via telephone calls to remember to fill in their diaries. Women in the control condition and women in the non-participant group after filling the baseline psychological assessments were given the standard medical instructions and went home. Two days prior to the pregnancy test, which took place 1 week after the end of writing all women were invited back to the clinic for the second psychological assessment. During the second visit women in the writing conditions were asked to return the diaries. Two independent raters assessed whether each diary conformed to condition instructions. No diaries were excluded. Experimenters who conducted the psychological assessments and data analysis were blind to the group allocation of the women. Information on group allocation and writing instructions were given to participants after the first psychological assessment by an experimenter different to the one who conducted the assessments. Pregnancy outcome was obtained from the medical records.

Measures

Pregnancy outcome

Positive pregnancy outcome was defined as sustained positive (3 IU/mL) hCG concentration followed by confirmation of clinical pregnancy by ultrasound. Negative pregnancy outcome was defined as negative hCG concentration. A biochemical pregnancy was defined as an initial serum hCG concentration followed by subsequent serum hCG concentrations that eventually dropped, and the absence of confirmation of a clinical pregnancy by ultrasound.

Psychological distress

Psychological distress was assessed using the following instruments: The State Scale from the State-Trait Anxiety Inventory (STAI-State; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983); The Negative Subscale from the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988). The Infertility and Strain Scale (ISS; Schmidt et al., 2003), which includes 11 items assessing infertility-related concerns, e.g. "how much stress has your fertility problem posed on your marriage"; The Physical Stress Reactions Scale (PSRS; Schmidt et al., 2003), which includes 9 items assessing several stress-related physical symptoms, e.g., how much time during the past week have you had racing heart?" These four scales were collapsed into two scales: the STAI and PANAS represented non-specific stress (alpha = 0.90), and the ISS and PSRS represented infertility-specific stress (alpha = 0.60). These two scales were subjected to principal-components extraction followed by varimax rotation, and results indicated that the factor structures were reliable. The two-factor solution accounted for 67.3% of the explained variance. Scores of the two scales were standardized to make them more comparable. More information on the factor analysis can be obtained from the first author.

Results

Sample characteristics

Participants had a mean age of 33.8 years (SD = 4.6). Most of them were married (98%), while 10% had previous children via natural child-birth (6%) or through previous forms of ART (4%). The average number of treatment cycles was 2.4 (SD = 2.3), while the average duration of infertility was 18 months (SD = 14 months). Women in the four groups did not differ in terms of any demographic or medical characteristics.

Analysis on psychological outcomes

One-way ANOVAs indicated that the three study groups did not differ in any of the baseline variables. Two sets of ANCOVAs were performed for the two experimental groups and one control group in relation to infertility-specific, $F(2, 144) = 1.57$, $p = 0.21$, eta squared = 0.02, and non-specific distress, $F(2, 144) = 0.15$, $p = 0.86$, eta squared = 0.002, controlling for baseline values on the