

Prevalence and predictors of major depressive disorder for fertility treatment patients and their partners

Sarah R. Holley, Ph.D.,^a Lauri A. Pasch, Ph.D.,^b Maria E. Bleil, Ph.D.,^c Steven Gregorich, Ph.D.,^b Patricia K. Katz, Ph.D.,^b and Nancy E. Adler, Ph.D.^b

^a Department of Psychology, San Francisco State University and ^b Department of Psychiatry, University of California, San Francisco, San Francisco, California; and ^c Family and Child Nursing, University of Washington, Seattle, Washington

Objective: To examine the prevalence and predictors of major depressive disorder (MDD) for women and their partners during the course of fertility treatment.

Design: Prospective cohort study during an 18-month period. Participants completed interviews and questionnaires at baseline and at 4, 10, and 18 months of follow-up.

Setting: Five community and academic fertility practices.

Patient(s): A total of 174 women and 144 of their male partners who did not have a successful child-related outcome during the time frame of the study.

Intervention(s): No interventions administered.

Main Outcome Measure(s): The MDD was assessed using the Composite International Diagnostic Interview Major Depression module, a structured diagnostic interview. Additional variables were assessed with self-report questionnaire measures.

Result(s): Of the women 39.1% and of the men 15.3% met the criteria for MDD during the 18-month course of the study. A binary logistic covariate-adjusted model showed that, for both women and men, past MDD was a significant predictor of MDD during treatment. Past MDD further predicted significant risk for MDD during treatment after controlling for other well-established risk factors (i.e., baseline levels of depression, anxiety, and partner support).

Conclusion(s): The MDD was highly prevalent for fertility treatment patients and their partners. Past MDD predicted risk for MDD during treatment, and it contributed to MDD risk more than other commonly assessed risk factors. This suggests that patients and their partners would benefit from being routinely assessed for a history of MDD before the start of treatment to best direct psychosocial support and interventions to those most in need. (Fertil Steril® 2015;103:1332–9. ©2015 by American Society for Reproductive Medicine.)

Key Words: Fertility treatment, depression, anxiety, partner support, counseling

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The psychological distress associated with infertility is comparable to that associated with heart disease, cancer, or human immunodeficiency virus (HIV), and patients undergoing fertility treatment often characterize infertility as the most upsetting experience in their lives (1, 2).

In most studies, specifically examining the association between depression and infertility, patients undergoing fertility treatment show a higher prevalence of depressive symptoms compared with a control group (3).

Important, very few studies have assessed the rates of major depressive

disorder (MDD) associated with fertility treatment and have instead used self-report questionnaires (for review, see Williams [3], Verhaak [4], Boivin [5], and Matthiesen [6] and their colleagues). Although self-report measures are efficient and can provide an index of a patient's current level of depression symptomatology, they do not confirm or disconfirm whether someone actually meets the criteria for a MDD diagnosis (7, 8). Such a distinction is important for guiding mental health treatment decisions. Whereas some level of depressive symptomatology may be relatively normative for patients with fertility issues, MDD represents a more serious

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Reprint requests: Sarah R. Holley, Ph.D., 1600 Holloway Avenue, EP 301, San Francisco, California 94132 (E-mail: sholley@sfsu.edu).

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condition. Episodes are associated with impaired psychosocial functioning, are recurrent, tend to remit slowly without treatment, may spill over into pregnancy or postpartum stages, or may lead to treatment discontinuation (9–11). Thus, identifying patients who are suffering from MDD, or are at high risk for the disorder, is crucial to be able to direct care to those most in need (12).

Only a handful of studies have used structured interviews to determine psychiatric diagnoses. Chen et al. (8) conducted an assessment of 112 fertility patients in Taiwan who were initiating a new round of IVF treatment (some had undergone previous treatment cycles). They found that 17% of the women met the criteria for MDD. Volgsten et al. (13) evaluated psychiatric diagnoses in Swedish women and men 3 weeks after an IVF cycle. Among those who did not have a successful cycle, they found that 19.5% of women and 8.4% of their male partners met the criteria for MDD. When these rates are compared with the global point prevalence rate for MDD of 5.9% for women and 3.8% for men, it is clear that patients undergoing fertility treatment and their partners are experiencing relatively high rates of MDD (14). Both of these studies, however, were cross-sectional in design. Given that distress appears to increase as the duration of infertility continues (2, 15, 16), the rate of MDD as treatment progresses unsuccessfully over time needs to be explored. Furthermore, it is not known how rates of MDD compare for patients in the United States where several factors may compound the burden of treatment (e.g., fertility treatment is expensive and rarely covered by medical insurance).

Beyond characterizing rates of MDD, it is important to identify those most at risk for developing this debilitating disorder during fertility treatment. Prospective treatment studies assessing risk factors for depression during fertility treatment are relatively rare, tend to focus exclusively on women, and have also commonly relied only on self-report questionnaire outcome measures. Of the prospective studies that exist, a few categories of risk factors have received empirical validation from multiple researchers and represent domains that are usually assessed by fertility treatment providers. The first relates to pretreatment psychological state. Prospective studies have demonstrated that pretreatment levels of depression and anxiety symptoms are predictive of depressive symptomatology after failed treatments (17–19). The second relates to level of support, with studies showing that low levels of social support and high levels of relational strain are predictive of depression during fertility treatment (18–20).

One potential risk factor that has not been assessed is the presence of past episodes of major depression. The MDD is a recurring disorder, and in the general population, past episodes appear to increase the likelihood of future episodes (21, 22). Given that infertility and its treatment are a major source of stress, and that stress can trigger major depressive episodes, those with a history of MDD may be particularly vulnerable (23). No known study has specifically assessed whether a history of MDD predicts MDD during fertility treatment. Volgsten et al. (13) did report retrospectively that 60.5% of women and 53.3% of men who met the full criteria for a *Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition (24) diagnosis (of any disorder)

during treatment reported a previous history of depression. This suggests that the presence of past MDD may play an important role in understanding who is at risk for MDD during treatment.

The present study used a prospective design and structured diagnostic interviews for MDD to assess the prevalence of and risk factors for MDD during fertility treatment. First, we characterized levels of MDD in women and their male partners in the United States who did not have a successful fertility treatment outcome. Second, we examined whether a past history of MDD predicted a greater likelihood of MDD during the course of treatment. We further compared the predictive power of a history of MDD to previously validated risk factors for depression, including pretreatment levels of depressive symptoms, anxiety symptoms, and partner support. Finally, we assessed whether a history of MDD predicted MDD during treatment after controlling for the effects of these well-established risk factors.

MATERIALS AND METHODS

Study Population and Protocol

The participants in this study were a part of the Fertility Experiences Project, a large-scale investigation involving women and their male partners as they sought treatment for infertility. The participants were recruited between 2000 and 2004; they were drawn from five reproductive endocrinology practices (>8 locations) in the San Francisco Bay Area. All participants met the following eligibility criteria: [1] it was their first visit to the fertility clinic; [2] they had not previously received IVF treatment; [3] they had not previously received a hysterectomy or sterilization; [4] they did not have a history of recurrent miscarriage; [5] they were currently attempting pregnancy with a male partner; and [6] they were fluent in English. The study protocol was approved by the University of California, San Francisco Internal Review Board, and informed consent was obtained from each participant. A detailed description of the recruitment procedures and cohort statistics is available in previously published studies using this sample (25–29). Briefly, 448 women enrolled in the study. Of the women who participated, 386 (86.2%) of their partners also participated in the study.

Baseline in-person interviews were scheduled within 3 months of the first clinic visit and before the start of fertility treatment. Participants were additionally sent a paper-and-pencil questionnaire in the mail, which they returned at the baseline interview. Demographic information collected at the baseline assessment included age, ethnicity, educational level, and the length of time the couple had been attempting conception (i.e., the length of time of infertility). Baseline in the context of this study is represented by the point at which couples met with a doctor with the intention of pursuing IVF treatment; they may have had prior treatments in the form of IUI.

Three additional waves of data collection occurred at 4, 10, and 18 months after the baseline assessment. Each involved the completion of questionnaires and telephone interviews. Participants remained in the study regardless of the treatments they received or the outcomes that occurred.

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