



Suicidal risk among infertile women undergoing in-vitro fertilization: Incidence and risk factors



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ABSTRACT

Despite the fact that depression and other emotional distress are well documented in infertile women, little is known about the relationship between infertility and suicidal risk. The aim of this cross sectional study was to examine the rate of suicide risk (suicidal ideation/suicidal attempts) among 106 infertile women visiting Infertility and In-Vitro Fertilization (IVF) Hospital Unit, and to identify the demographic, medical and clinical correlates to suicidal risk. The incidence of suicide risk was 9.4%. Suicidal women were more likely to be childless or had fewer children and experienced higher levels of depressive symptoms. In addition, they reported more frequently on denial, social withdrawal and self-blame coping strategies compared to participants without suicidal risk. A multiple logistic regression model revealed that being childless, using non-positive reappraisal and exhibiting depressive symptoms were significant predictors of suicide risk in the future. These results suggest that routine assessment of suicidal risk and depression should be provided for infertile women in the course of IVF. Furthermore, future interventions should focus on helping them acquire different emotions regulation strategies and provide alternative skills for positive coping.

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1. Introduction

Infertility, the disease of the reproductive system, is clinically defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse (Zegers-Hochschild et al., 2009). Globally, 9% to 15% of couples meet this definition of infertility and more than half of them (~56%) seek medical care (Benyamini et al., 2004; Boivin et al., 2007; Ogawa et al., 2011).

Although most women are emotionally well-adjusted to the condition and treatment of infertility, a considerable number of women still exhibit emotional problems (Anderson et al., 2003; Holter et al., 2006; Sexton et al., 2010; Verhaak et al., 2005, 2007, 2010; Yli-Kuha et al., 2010). In fact, infertility as a stressful experience affects all life's domains: physical, mental, financial, spiritual and marital (Cousineau and Domar, 2007; Greil, 1997; Guerra et al., 1998; Kissi et al., 2013; Newton et al., 1999; Reis et al., 2013; Zuraida, 2010). Studies found that infertility was related to

depression, anxiety, guilt, social isolation and low self-esteem in women (Beaurepaire et al., 1994; Chiaffarino et al., 2011; Kissi et al., 2013; Klemetti et al., 2010; Musa et al., 2014; Nelson et al., 2008; Oddens et al., 1999; Verhaak et al., 2010; Zuraida, 2010). Moreover, Chen et al. (2004) found about quarter of the women undergoing assisted reproductive technology (ART) met the criteria for a generalized anxiety disorder, 17% for major depression and 9.8% for dysthymia. Whereas part of these psychiatric symptoms are related to infertility, others were also affected by medical procedures, ranging from medical monitoring, physiological effects of gonadotropins stimulation to awaiting of positive outcome (Cwikel et al., 2004; Greil et al., 2011; Sexton et al., 2010; Turner et al., 2013).

While infertility-related stress has been associated with anxiety and depression in the literature, other researchers found no significant differences in psychological morbidity between IVF patients and individuals from the general population (Biringer et al., 2015; Eugster and Vingerhoets, 1999; Greil, 1997; Yli-Kuha et al., 2010). Others have also found that women entering an IVF program score above the norm on measures of depression (Lewis et al., 2013). These conflicting findings, strengthen the need to continue studying women undergoing IVF (Verhaak et al., 2007), as authors suggesting the possibly that infertile women may face increased social pressures, including pressure to underreport other socially stigmatized conditions such as mental illness (Lewis et al.,

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2013).

Despite the fact that depression is well documented as a risk factor of suicide (Brown et al., 2000; Cheng et al., 2000; Fiori and Turecki, 2012; Hantouche et al., 2010; Hawton et al., 2013 for review), little is known about the relationship between infertility and suicidal risk. To our knowledge, only two studies have investigated risk of suicide among women with infertility problems (Kjaer et al., 2011; Venn et al., 2001). Venn et al. (2001) investigated the maternal mortality rate in Australian in-vitro fertilization (IVF) patients (treated and untreated) relative to general female population of the same age. There were seven deaths (three in the treated group and four in the untreated group) from suicide during follow-up, and the overall mortality was lower than that of the general female population. In a comparison between subgroups the untreated women had a higher standardized mortality ratio for suicide (SMR, 0.58; 95% CI: 0.27–1.22) than the treated women (SMR, 0.30; 95% CI: 0.16–0.55). However, suicide was not the main outcome in the study; there was no control for important confounders relating to suicide; and the subject of suicide was dealt briefly. In Addition, Kjaer et al. (2011) conducted a record-linkage cohort to investigate the risk of suicide among women with fertility problems referred to Danish fertility clinics in the years 1973–1998. Overall suicide was the cause of death for 92 women (7.1% of all death), most among women who did not have a child after fertility evaluation. The researchers found an indication of a possible connection between the inability to give birth to a child and the risk of suicide, as women with no children after initial fertility evaluation had a > 2-fold (HR: 2.43; 95% CI: 1.38–3.71) greater risk of suicide than women who had at least one child after fertility evaluation. A high but insignificant risk for suicide was also observed among women with secondary infertility who had children before but did not have a child after fertility evaluation (HR: 1.68; 95% CI: 0.82–3.41). The authors claimed that for some women, the emotional suffering associated with infertility may be very real and may have fatal consequences when a child fails to arrive. However, there was no information in the study about the fertility treatment prescribed and very little demographic and clinical information was collected, precluding investigation of a potential association between these various aspects and suicidal risk.

Hence, the main aim of this study was to explore the rate of suicide risk [this includes past or present of suicidal ideation] i.e., “thoughts about killing yourself”, suicide attempts (i.e., “attempted to kill yourself”) and the likelihood of committing suicide in the future] among infertile women, and to identify the demographic, medical and clinical correlates to suicidal risk.

Another purpose of the study was to investigate the role of coping strategies on suicide risk. The role of coping strategies among women with infertility was presented in previous studies. Consistently, women using escape/avoidance coping strategy as well as those who exhibited frequent self-blame and denial strategies reported higher levels of mental distress, including depression and anxiety. Whereas, seeking social support, problem solving and positive reappraisal strategies found to be related (negatively) to mental distress (Gourounti et al., 2012; Jordan and Revenson, 1999; Lykeridou et al., 2011; Martins et al., 2011; Peterson et al., 2006a, 2006b; Wu et al., 2014). In this study, we aim to explore how these coping strategies relate to a possible increase in or to a possible buffer against suicidal risk.

2. Methods

2.1. Participants and procedure

The sample included 106 infertile women who were referred

during the year 2014 to the Unit of In-Vitro Fertilization “IVF” in the Meir medical center in Kfar Saba, Israel, and agreed to take part in the research voluntarily. Women were eligible if they had an infertility diagnosis and were about to begin a new IVF or Intracytoplasmic sperm injection (ICSI) cycle only. Therefore, other artificial infertility treatments such as intrauterine insemination (IUI) or frozen embryo transfer (FET) were excluded from the study. Self-report questionnaires were filled out by each of the participants (prior to administration of any drugs) and other medical information was extracted from their medical records. Participants voluntarily participated in the study after signing a consent form. The refusal rate in the study was 11% (response rate: 89%), and no significant differences were found when comparing responders to non-responders concerning age, marital status, number of children, cause for infertility, duration of infertility and number of fertility treatments. The study was approved by the Helsinki Committee of Meir medical center and the IRB in Tel-Aviv Jaffa Academic College. At the conclusion of the survey, participants were shown a referral sheet with contact information for local mental health services, should they desire counseling following the study.

Demographic and medical data of the sample are shown in Table 1.

2.2. Measures

2.2.1. Demographic and medical information

We built a questionnaire focusing on demographic and medical variables such as age, marital status, number of children,

Table 1
Demographic and clinical characteristic of the study sample.

	Total N = 106
Age (M ± SD)	33.5 ± 5.8
Marital status (Married)	85.8% (91)
Children (Yes)	43.4% (46)
Number of children (M ± SD)	0.53 ± 0.68
Religion (Jewish)	80.2% (85)
Employed	86.8% (92)
SES^a (Average & Above Salary)	54.7% (58)
Education Level (Years) (M ± SD)	14.6 ± 2.35
Religiosity (secular)	44.3% (47)
Medical Information	
Personal history of an abortion	24.5% (26)
Past pregnancy (Yes)	50.9% (54)
Infertility cause	
Female factor	30.2% (32)
Male factor	27.4% (29)
Female & Male	20.8% (22)
Unexplained	20.8% (22)
Duration of Infertility (Years) (M ± SD)	2.56 ± 1.56
Past fertility treatments	91.5% (97)
Number of IVF^b (M ± SD)	2 ± 2.45
High environment support	64.2% (68)
High spouse support	68.9% (73)
It's very important for the environment that you will have children	87.7% (93)
It's very important for the spouse to have children	80.2% (85)
Mental Care in the Past	31.1% (33)
Health issues	17% (18)
Clinical characteristic	
Depressive Symptoms	17% (18)
Anxious Symptoms	9.4% (10)
Suicidal Risk^c	9.4% (10)
Suicidal ideations in the Last Year	11.3% (12)
Suicidal ideation within the past 2 weeks	10.4% (11)

^a SES = Socio economic status.

^b Until current treatment.

^c Score ≥ 7 according to the Suicidal Behaviors Questionnaire – Revised (SBQ-R) (Osman et al., 2001).

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