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Julia V. Johnson
University of Massachusetts Medical School, Julia.Johnson@umassmemorial.org

Kristin L. MacGregor
University of Massachusetts Medical School, Kristin.MacGregor@umassmemorial.org

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The Science and Psychology of Infertility

Julia V. Johnson, M.D.  Kristin L. MacGregor, Ph.D.
Reproductive Endocrinologist  Health Psychologist
Professor of Obstetrics and Gynecology  Assistant Professor of Psychiatry
Disclosures

- NONE!
Overview

- Prevalence and Etiology of Infertility
- Basic Evaluation
- Treatment Options
- Psychological Effects of Infertility
- Depression/Anxiety
- Social, Cultural, and Gender Issues
- Relationship Issues
- Patient Distress and Pregnancy Rates
- Psychological Support
- Evidence-Based Psychological Interventions
Prevalence

- ~1 in 10 couples have primary or secondary infertility
  - More prevalent in developing countries
- 7.3 million women in the U.S.
- 12% of the reproductive-age population (ASRM.org)
- Prevalence increases with age
  - 11% of women ages 15-29
  - 27% of women ages 40-44 (CDC, 2005)
Etiology

- Forty percent of infertility is male factor
- Forty percent of infertility is female factor
  - Tubal factor
  - Ovulation factor
    - Polycystic ovary syndrome—8% of women
  - Uterine factor
    - Intercavitary lesion—fibroids, polyps, adhesions
- Twenty percent of infertility is unexplained
  - One-third of patients have endometriosis
- Fertility decreases with advancing maternal age
  - 15% at age 30
  - 50% at age 40
  - 99% at age 45
Evaluation—it is simple!

- Are there sperm? (semen analysis)
- Are there eggs? (ovulation predictor kit)
- Do they get together? (hysterosalpingogram)
- Is age a factor? (day 3 FSH and estradiol)
- Can consider other evaluation
  - Sonohystogram to r/o fibroids, polyps, adhesions
  - Laparoscopy to r/o endometriosis
  - Urologist to evaluate for cause of male factor
Hysterosalpingogram

- Fallopian tube
- Cannula
- Free spill of contrast from patent tube
Treatment—it is improved!

- **No treatment**
  - 3% per cycle fecundity

- **Increased fecundity (monthly pregnancy rate)**
  - Clomiphene and timed intrauterine insemination = 9% per cycle
  - Gonadotropin and timed intrauterine insemination = 12% per cycle
  - In vitro fertilization = 40% per cycle

- **Use of donated sperm or eggs**
  - IVF with donor eggs = 60% per cycle

- **Adoption or remain child-free**
IVF: complicated process to produce beautiful embryos
One of the high stress diseases for reproductive aged women and men

Not yet recognized as a disease by insurance carriers in many states

Limited community awareness of the frequency of infertility and how it affects the quality of life

Lack of understanding by family and friends can lead to worsening stress
Psychological Effects of Infertility

- Belief is often that the problem is with the female partner.
- Loss of control over one’s life
  - Infertility becomes the focus
  - Difficulty concentrating on other life goals
- Many infertility patients, especially women, consider the evaluation and treatment to be the most upsetting experience of their lives.
Psychological Effects of Infertility

- Women typically become the identified “patient” and thus often carry the psychological burden.

- Distress surrounding lack of conception seems to be greater for women than men:
  - Diminished sense of self worth; body has “failed”
  - Infertility as punishment

- Grief and depression, anger, guilt, shock and denial, and anxiety

- Competence and self-esteem are compromised in women

- Difficulty in social settings
Depression/Anxiety and Infertility

- Many patients undergoing IVF report depressive symptoms
  - As many as 54% mild depressive symptoms
  - 19% at a moderate/severe level

- Symptoms can persist over extended periods of time
  - 66% of women, 40% of men reported depressive symptoms after failed IVF attempt
  - 1/3 reported depressive symptoms 18 months later
Depression/Anxiety and Infertility

- Twice the prevalence of depressive symptoms, at higher levels
- 11% of infertile women met criteria for MDD, compared to 3.9% of fertile women
- Infertile women were indistinguishable on self-report measures of anxiety and depression from patients with cancer, hypertension, MI, or HIV
Depression/Anxiety and Infertility

Psychiatric disorder found in 40% of the 112 women interviewed prior to their first infertility visit
- Anxiety disorder – 23%
- MDD – 17%

As many as 13% of women experience passive suicidal ideation following an unsuccessful IVF attempt
Men and Infertility

- Under-represented in the literature
- Damage to self-esteem, inadequacy, responsibility for denying wife a child
- Coping styles differ from women
- Easier transition to childless lifestyle than women
- Husbands suppress emotions to support wives
Men and Infertility

- Distress greater with male-factor infertility
  - Guilt, shame, anger, isolation, loss, sense of personal failure (Mason, 1993)
- Impotence and performance anxiety
- Low self-esteem, high anxiety
- More distress and greater somatic symptoms overall
- Male infertility – higher levels of stigma than female infertility
Relationship Issues

- Literature is inconclusive regarding effects of infertility on spousal relationship
  - Increased distress in couples who do not conceive within the first year
  - Others say marital adjustment appears stable overall
- Changes in sexual satisfaction
Social and Cultural Issues in Infertility

- Cultural pressure to bear children
- Potential ethical/moral issues
- Religious beliefs may play a role:
  - Judaism allows the practice of all techniques of assisted reproduction when the egg and sperm originate from the wife and husband
  - Catholicism does not accept the practice of any form of assisted reproduction
  - In Islam, assisted reproduction is acceptable only if it involves the husband and wife
Patient Distress and Pregnancy Rates

- In some studies, high levels of depressive symptoms, anxiety, and distress have been associated with reduced chances of becoming pregnant during ART.
- Others have failed to find a relationship.
- Distress affects persistence in treatment.
  - Primary reason for dropping out.
Patient Distress and Pregnancy Rates

- Number of studies demonstrating relationship between pre-pregnancy distress and pregnancy rates
  - Klonoff-Cohen et. al: 151 women assessed prior to undergoing an IVF or GIFT cycle
    - Battery of psychological questionnaires at first clinic visit and at time of procedure
    - Outcome measures taken from medical records
Patient Distress and Pregnancy Rates

- Outcome measures (Klonoff-Cohen, et. al)
  - Diagnosis, number of previous cycles, number of oocytes retrieved, fertilization rates, number of embryos transferred, embryo quality, presence or absence of confirmed pregnancy, pregnancy outcome

- Findings:
  - Baseline level of stress significantly related to number of oocytes retrieved and fertilized, pregnancy, live birth rate, and birth weight
  - Stress on the day of the procedure only related to number of oocytes retrieved and fertilized
  - Frequency of no live birth was 93% lower in women with the least distress compared to those with the most
Psychological Support

- Print materials, internet
- Encourage diverse forms of support
- Advocacy groups: RESOLVE and American Fertility Association
- Mental Health treatment
Barriers to Psychological Treatment Engagement

- Majority of infertile men and women do not voluntarily seek counseling
- Not emotionally “ready”
- Stigma of “mental health” treatment
- Financial expense
- Ignorance regarding benefits of treatment
- People think they can manage their problems on their own
- Patients think their medical providers will take care of both their medical AND psychological needs, therefore they don’t need to see a therapist
Evidence-Based Psychological Interventions

- “Counseling Service Model”
  - Nurse provides patient with information, daily phone contact, support during IVF procedure, five face-to-face meetings

- Cognitive-Behavioral Therapy
  - Range from 5 to 10 sessions
  - Content includes relaxation techniques, stress-management, coping-skills training, and sometimes group support
How strong is the evidence?

- 2003 Review of 380 identified studies, 25 were methodologically strong enough to warrant review (Boivin)
  - Psychological interventions could reduce negative affect, especially distress associated with infertility
  - Group interventions stressing education and skills training were particularly beneficial
  - No clear impact on pregnancy rates

- Follow up review found that psychotherapy led to a reduction in anxiety/depression and found a possible increase in conception (de Liz & Strauss, 2005)
How strong is the evidence?

- **Follow-up meta analysis conducted** (Hammerli, Znoj, and Barth, 2009)
  - Results do not indicate overall efficacy of psychological interventions for patients suffering from infertility with respect to mental health
  - Some evidence was found for the efficacy of psychological interventions to achieve pregnancy
  - Trend that psychological interventions may be more beneficial for men than women
Summary and Conclusion

- Psychological status of infertility patients should be assessed
  - Relieve distress
  - Persist in treatment
  - Improve pregnancy rates

- Provide patients with information and reliable educational resources

- Refer patients with anxiety and depressive symptoms to a mental health professional
References

QUESTIONS??

Thank you!