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The Science and Psychology of Infertility

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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
- Free spill of contrast from patent tube
- Cannula
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
Treatment—success rate ⇔ less stress

- 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!