The Psychology of infertility

Central issues at different phases of the infertility experience

Jacky Boivin, PhD, CPsychol
School of Psychology
Cardiff University

Cardiff Fertility Studies Research Group

- Generate and translate medical knowledge into free, efficacious psychosocial interventions

Fertility pathways
International Fertility Decision-making Survey (IFDMS), N=10,045

- IFDMS consisted of 64 items in five sections:
  - About your background
  - Parenting
  - About fertility and trying to get pregnant
  - Knowledge, attitudes, experience and motivation towards fertility and treatment
  - Starting families today is a complex decisional issue

- 13 languages

- Three recruitment methods
  - Online Facebook, invitations
  - Online panel data (IPSOS)
  - Other sources

N=17,475 PAPERS AND N=10,045
PARTICIPANTS LATER...

- Starting families today is a complex decisional issue
- Uxelar that people are aware of their fertility and timeline
- Declining need (value, priority) of childbearing
- Increasing presence of competing demands and competing sources of life satisfaction (especially for women)
- Psychosocial need: decision-making about childbearing
  - Value clarification
  - Deliberation between options
  - Support

Fertility pathways

- Adoption
- Treatment
- Unmarried childbearing
- Marital status
- Natural selection
- Abortion
- Genetic selection
Facilitators and barriers to help seeking

- **Treatment attitudes**
  - Treat well
  - Relaxed about it (a lot)
  - Would want to know if had a problem
- **Lack of symptom awareness**
  - Treatment not high-tech
  - Treatment expensive
- **Being labelled infertile**
  - Poor prognosis
  - Reject IVF
- **Financial**
  - Age
  - End of options

Brades et al. Hum Reprod 2008;23:917

Facilitators and barriers to help seeking

- **TTP: Time to pregnancy**
  - 0%
  - 50%
  - 70%
  - 90%

Boivin & Bunting 2010 Hum Reprod

FertiSTAT: Fertility Status Awareness Tool

- **Do YOU know**
  - 0%
  - 5%
  - 10%
  - 20%

Brand & Bunting 2009 Hum Reprod 17(9) Science in Reproductive Health, 2010/0880
Personalised guidance based on individual risk profile

2. What does your FertiSTAT score mean?

Psychological well-being according to diagnosis (12-month follow-up, in treatment)

Perceived social environment

Main effect time: $F(1,231)=21.5, p<0.001$ and diagnosis $F(1,231)=3.1, p<0.05$.
Interaction $F(1,231)=2.93, p<0.5$ (unexplained).

Peronace et al. 2007 J Psychosom Obstet Gynecol

Main effect of time: $F(1,248)=10.61, p<0.001$ and $F(1,247)=16.45, p<0.001$.
Lifestyle change interventions

<table>
<thead>
<tr>
<th>Study</th>
<th>N</th>
<th>Design</th>
<th>Intervention</th>
<th>Reproductive</th>
<th>QoL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palomba et al. 2007</td>
<td>52</td>
<td>RCT D or E</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Pelletier 2010</td>
<td>117</td>
<td>Chart review</td>
<td>n/a</td>
<td>n/a</td>
<td>ns</td>
</tr>
<tr>
<td>Tang et al. 2006</td>
<td>67</td>
<td>RCT D, E, M</td>
<td>ns</td>
<td>ns</td>
<td>-</td>
</tr>
<tr>
<td>Hughes et al. 2000</td>
<td>59</td>
<td>RCT D, E, M</td>
<td>ns</td>
<td>ns</td>
<td>-</td>
</tr>
<tr>
<td>Hoeger 2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tsgareli et al. 2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Karmizadeh 2010</td>
<td>343</td>
<td>RCT D, E, M</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Pelahaki et al. 2011</td>
<td>36</td>
<td>ME</td>
<td>ns</td>
<td>ns</td>
<td>-</td>
</tr>
</tbody>
</table>
| Note: N=number, Design = Diet, Exercise, Metformin. Weight indicator=loss in kg, % fat, BMI, waist circumference / hip:waist ratio. Reproductive = ovulation, cyclicity. QoL = sexual health, sexual quality of life, QoL.

*Since Moran et al. 2006 & Lim et al. 2007 reviews.

Motivation a problem

- The percent of people who take up offers (mainly in the context of research), when documented, is about 75% (e.g., Clark 1998; Katcher et al. 2009; Hughes et al. 2000). And even lower if referred to external clinics (about 5% (Hughes et al. 2000).
- From those who start typically a further 25-30% dropout (e.g., Winters et al. 1999; Thomson et al. 2009). Or more depending on intervention (40% in highly restricted diets (Tsygankov et al. 2006).
- Of stay in programs compliance (e.g., attendance at classes, adherence to diet) is only between 75-85% (Thomson et al. 2006; Palomba et al. 2001; Henon-Goldman 2010).

Need, demand and access to infertility services 1990-2006

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>More developed countries</td>
<td>5.0% - 10.7%</td>
<td>0.9% - 9.3%</td>
<td>5.0% - 15.0%</td>
<td>5.0% - 15.0%</td>
</tr>
<tr>
<td>Less developed countries</td>
<td>3.0% - 6.0%</td>
<td>0.2% - 1.2%</td>
<td>3.0% - 6.0%</td>
<td>3.0% - 6.0%</td>
</tr>
<tr>
<td>Overall</td>
<td>4.0% - 9.0%</td>
<td>0.4% - 7.0%</td>
<td>4.0% - 9.0%</td>
<td>4.0% - 9.0%</td>
</tr>
</tbody>
</table>

Cumulative percentage of the initial cohort in the 1391 women (study population I) with at least one delivery after 5 years of follow-up based on complete follow-up data from the National Medical Birth Register.


Treatment with an assisted reproductive technology (ART)

Afternoon sessions
Patient interest constrains support possibilities

- Poulson et al. (1988) - 18% counselling
- Pepe & Byrne (1991) - 15% counselling
- Shaw et al. (1988) - 11% counselling
- Sundby et al. (1994) - 5% support group
- Schmidt et al. (2005) - 9% communication intervention
- Wischmann et al. (2006) - 34% counselling
- Emery et al. (2003) - 79% counselling

“…need to find a balance between employing [interventions] that should be effective in an ideal world, and intervention activities and materials that match the reality of priority populations and intervention contexts…” (Shaala & Koos, p. 6, 2009)

Need to develop support toolkit that can [really!] be integrated in the day-to-day

- Needs assessment and intervention development techniques exist
  - Intervention mapping (Bartholomew et al. 1998)
  - MRC complex intervention framework (Campbell et al. 2000)
  - Taxonomy of behaviour change techniques (Abraham & Michie, 2008)
  - Evidence-based evaluation methods (Sackett et al. 1996)
  - etc

Preparatory interventions (attitudes)

Leaflet addressing common fears about semen analysis

Non-attendance rate significantly reduced in Information group versus routine care

OR = 0.31 [95% CI, 0.098 - 0.993]
Identify & refer people at risk

Cousineau et al. 2008.

Reduce emotional and relational strain by tailoring to individual problem areas

Cousineau et al. 2008.

CBT designed to optimise chance of conception via improved sexual functioning during fertile period

CBT versus Routine care
- Decrease in marital distress
- Increase in accurate timing of intercourse from 50% (pre) to 100% (post) based on daily diaries
- Improved pregnancy rate (versus epidemiological controls)
The Impact of Group Psychological Interventions on Distress in Infertile Women


Fig. 2. Functions of medical communication, impact on outcomes.


Communication intervention for migrant and minority populations

Consequence of infertility according to development status

Less well developed countries

More developed countries

van Balen, Ob/Gyn, Monograph, 2010
Review and an analysis of the results of the studies done to date in poor-resource areas

FertiQoL
The first internationally validated instrument to measure quality of life in individuals experiencing fertility problems
Professionals can download FertiQoL FREE OF CHARGE
www.fertiqol.org

Emotional reactions during IVF

van Dam & Leanardo, Women’s Health, 2010
Cognitive framework of stress & coping

PRCI development process
- Theoretical work
- Item generation
- Item impact evaluation
- Feasibility and acceptability
- Focus groups stakeholders
- RCT (in progress in Utrecht)

The Positive Reappraisal Intervention Card

- Ten statements:
  - Rationalised response to women
  - "prime" positive redefinition associated with positive adjustment
  - Instruction to read once in the morning, once in the evening and any other time needed

- During this experience I will:
  - Try to do something that makes me feel good
  - See things positively
  - Look on the bright side of things
  - Make the best of the situation
  - Discover what is important in life
  - Focus on the positive aspects of the situation
  - Find something good in what is happening
  - Try to do something meaningful
  - Focus on the benefits and not just the difficulties
  - Learn from the experience
**Cardiff Fertility Studies**

**Personal Control**

Group Main Effect: The PRCI group appraised the waiting period as significantly more controllable than the PMI group ($p < .05$).

**Endorsements**

The PRCI group would be more likely to use their card again and to recommend it to other patients. PRCI group also thought their card more likely to reduce stress of other medical waiting periods. * $p < .05$
Why do couples discontinue in vitro fertilization treatment? A cohort study

- Psychological burden
  - Financial stress & coping difficulties
  - Mental illness
  - Never the same staff
  - Others diagnosed

- Other “psychological” reasons:
  - Balancing treatment & work commitment
  - Distance from clinic
  - Undergone agreed number of cycles

Online Viewing Behavior

Techniques to involve men in fertility care

Effects of different kinds of couple interaction on cortisol and heart rate responses to stress in women

Beate Dilzterm, Inga D. Neumann, Guy Bodenmann, Bernadette von Dewain, Rebecca A. Turner, Ulrike Ehler, Markus Heinr198ct
Procedure (repeat)

- Identify types of interventions medical staff require
- Identify available psychosocial interventions for challenging health interactions
- Examine fit between needs and existing interventions with stakeholders
- Developmental and foundational research on adapting/creating tailored brief psychosocial interventions to address intervention needs
- Assess the feasibility, efficacy etc of implementing adapted/novel brief interventions in health contexts

Potential effect on cycles to pregnancy?

<table>
<thead>
<tr>
<th>Low marital stress</th>
<th>Mdn 2.0 ± 0.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>High marital stress</td>
<td>Mdn 3.0 ± 0.20</td>
</tr>
</tbody>
</table>

**Note:** Cycle by marital stress interaction on live birth (B=-0.92 x 0.58, Wald(1)=4.76, P<0.05,
OR=1.20; Model -27.23, P<0.05); 128 couples.

Potential effect on outcome?

- Live Birth
  - Potential effect on outcome?
  - Cardiff Fertility Studies

Examine fit between needs and existing interventions with stakeholders.
Conclusions

- The "who, what, when and how" is also relevant in ART
- Many psychosocial challenges before, during and after treatment but more can be done to identify these
- Addressing specific challenges with specific interventions would be expected to have good impacts on quality of life, treatment persistence and success of treatment but research needs to be done