

The Psychology of infertility

Central issues at different phases of the infertility experience

Jacky Boivin, PhD, CPsychol

School of Psychology
Cardiff University

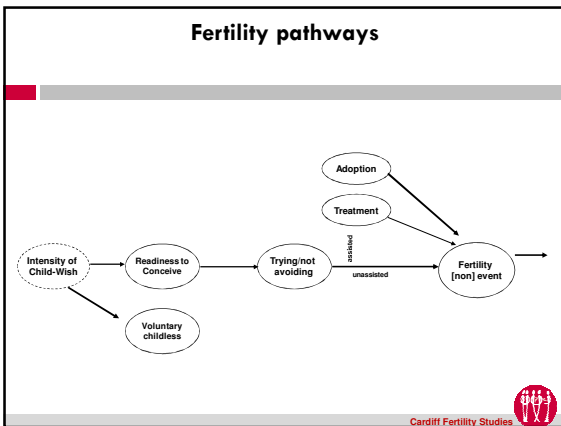
CARDIFF UNIVERSITY
PSYCHOLOGY
CARDIFF ESHRE Campus Workshop, Amsterdam, November, 2010
Cardiff Fertility Studies Research Group
www.CardiffFertilityStudies.com

Cardiff Fertility Studies Research Group

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



Cardiff Fertility Studies



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

www.startingfamilies.com

Cardiff Fertility Studies

IFDMS consisted of 64 items in five sections

- About your background
- Parenting
- About fertility and trying to get pregnant
- Knowledge, beliefs, experiences and intentions about fertility medical services
- About your social situation and your health and attitudes to general medical care

13 languages

- English, Danish, Chinese, French, German, Hindi, Italian, Japanese, Portuguese (Brazilian and European), Russian, Spanish, Turkish

Three recruitment methods

- Online (Facebook, babycentre.com, Google Adwords)
- Online panel data (PPOS)
- Clinic samples

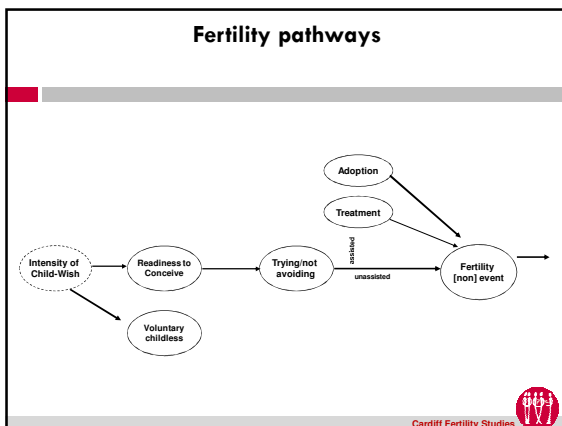
Recruitment criteria:
 -Over 18 years of age
 -Trying for 26 months
 -Married or living with partner

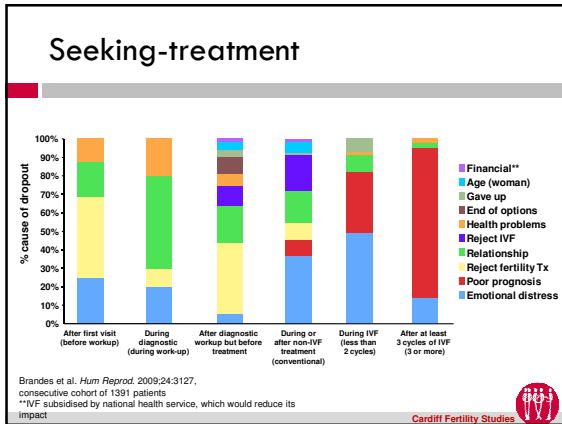
Cardiff Fertility Studies

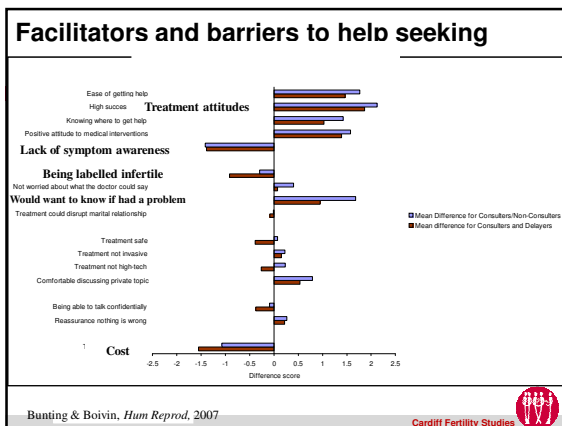
N=17, 475 PAPERS AND N=10,045 PARTICIPANTS LATER...

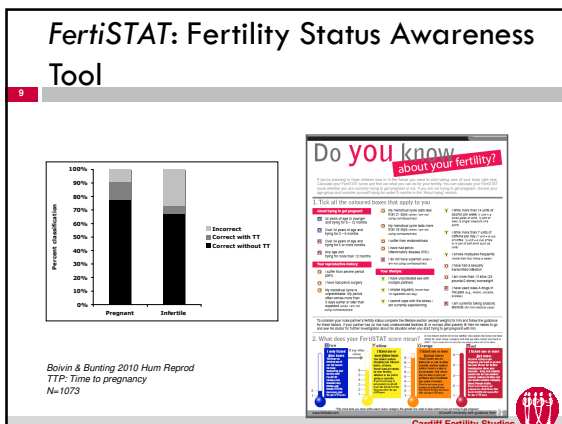
- Starting families today is a complex decisional issue
- Unclear that people are aware behaviour jeopardises parenthood goals
- Declining need [value, priority] of childbearing
- Increasing presence of competing demands and competing sources of life satisfaction (especially for women)
- Psychosocial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

Cardiff Fertility Studies









Personalised guidance based on individual risk profile

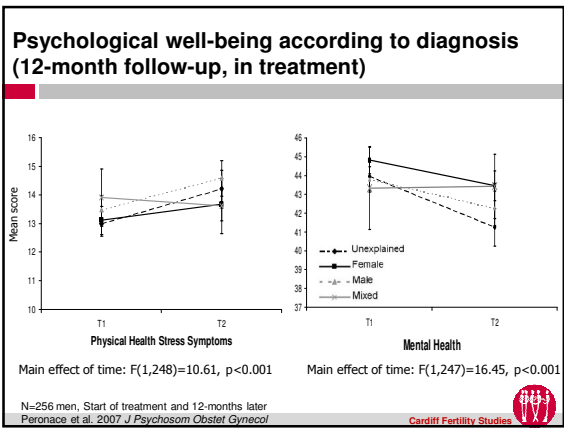
2. What does your FertISTAT score mean?

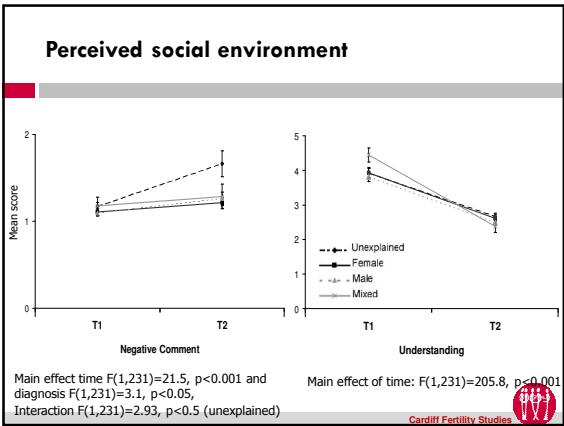
In the return below circle the number that equals the boxes you have ticked for each colour category and find out what action you need to take.* If you never tick, you score zero in every colour and you score 0.

Blue	Yellow	Orange	Red
I only ticked Blue boxes You have not ticked any of the other boxes, but keep monitoring your FertISTAT because your situation may change and female fertility decreases after the age of 34 years.	I ticked one or more Yellow boxes You should consider changing your lifestyle habits. All these factors have an impact on your fertility, whether or not you're trying to conceive. If you're not trying to get pregnant you should consider changing your habits after the age of 34 years.	I ticked one or more Orange boxes These factors may be important to your fertility. Consider making medical advice if you're trying to get pregnant. Your doctor may be able to give you medicine and treatment any action if needed. If you're not trying to get pregnant you should consider changing your habits after the age of 34 years.	I ticked one or more Red boxes If you're trying to get pregnant, you need to go and see your doctor for further information. Drug and metabolic conditions can be non-medical reasons for reduced fertility and you should consider changing these lifestyle habits. If you're not trying to get pregnant you should know that female fertility decreases after the age of 34 years.

*The more boxes you have within each colour category the greater the need to take action if you are trying to get pregnant.

www.fertistat.com ©Cardiff University with guidance from Cardiff Fertility Studies





Lifestyle change* interventions

Study	N	Design	Intervention	Weight	Reproductive	QoL
Aubuchon 2009	37	Chart review	D, E	*	*	-
Peltier 2010	117	Chart review	D, E	*	n/a	-
Harris S Glocker 2010 (Hoeger 2004)	36	RCT	D, E, M	*	n/a (ns)	* PCOSQ
Karmizadeh 2010	343	RCT	D, E, M	*	ns	-
Fang et al. 2006	67	RCT	D, E, M	ns	ns	-
Thomson et al. 2008; 2009	59	RCT	D and/or E	*	*	* depression, PCOSQ
Palomba et al. 2007	52	RCT	D or E	ns	*	ns-sex activity

Note. N=Diet, E=exercise, M=Metformin. Weight indicator=loss in kg, % fat, BMI, waist circumference / hip-waist ratio. Reproductive = ovulation, cyclicality. Mainly PCOS patients. [-] = intervention had negative effect on fertility.

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



Motivation a problem

- The percent of people who take up offers (mainly in context of research), when documented, is about 75% (e.g., Clark 1998; Katcher et al. 2009; Hoeger et al. 2004) 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., Stamets et al. 2004; Thomson et al. 2009) or more depending on intervention (40% in highly restricted diets Tsigarelli et al. 2006)
- Of stay in programs compliance (e.g., attendance at classes, adherence to diet) is only between 75-85% (Thomson et al. 2009; Palomba et al. 2007; Harris-Glocker, 2010).



Need, demand and access to infertility services 1990-2006

	More developed nations	Less developed nations	Overall estimate
12-Month prevalence of infertility	3.5% - 16.7% (n=62/253; 16 studies)	6.9% - 9.3% (n=120/160; 12 studies)	9% (5 - 15)*
Per cent of infertile couples seeking medical care	56.1% (42.0 - 76.3) (n=4 810; 12 studies)	51.2% (27.0 - 74.1) (n=1 600; 5 studies)	56% (30 - 75)**
Per cent of infertile women receiving treatment	22% (n=1 016; 5 studies)		

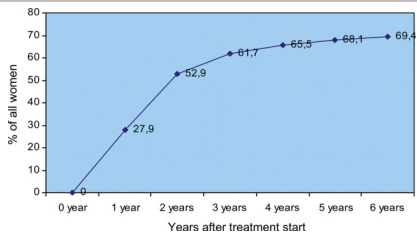
* corresponds to about 72 (40 - 120) million women aged 20-44 years in marital or consensual union

** corresponds to about 41 (12 - 90) million infertile couples

(Source: Boivin et al., Human Reproduction, 2007)



Treatment with an assisted reproductive technology (ART)



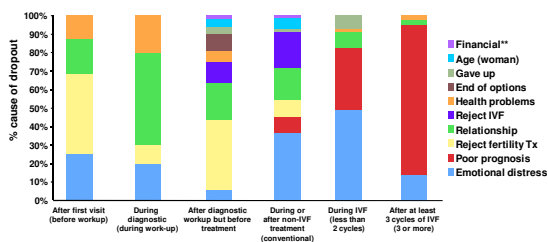
Cumulative percentage of the initial cohort in the 1338 women (study population I) with at least one delivery after 5 years of follow-up based on complete follow-up data from the National Medical Birth Register

Pinborg, A. et al. Hum. Reprod. 2009

Cardiff Fertility Studies



Seeking-treatment



Brandes et al. Hum Reprod. 2009;24:3127.

consecutive cohort of 1391 patients

**IVF subsidised by national health service, which would reduce its impact

Cardiff Fertility Studies



Afternoon sessions

4 December 2010

09.00 - 09.30 Introduction

09.30 - 11.30 In-depth case discussions for medical and administrative staff

1. Breaking bad news on the telephone - Silke Tichudin (Switzerland)
2. Preparing patients for the emotional implications of ART - Margie Emery (Switzerland)

In-depth case discussions for psychosocial staff

3. Establishing the counsellor-client relationship in the first counselling session - Sheila Pike (UK)
4. Using typical gender differences as a resource in couple counselling - Brennan Peterson (USA)

11.30 - 12.00 Plenary

12.00 - 13.00 Lunch

13.00 - 15.00 In-depth case discussions for medical and administrative staff

1. How can I refer patients to a counsellor? - Chris Steenkamp (The Netherlands)
2. Communicative skills and self-care for nurses confronted with highly distressed patients - Silke Tichudin (Switzerland)

In-depth case discussions for psychosocial staff

3. Addressing sexual refractivity - Jan Horst (Belgium)
4. Accompanying couples with bereavement issues - Utschi Van den Broeck (Belgium)

16.00 - 16.15 Summary and take-home message

Which patients need which form of support by which professional? - Petra Thron (Germany)

16.15 - 17.00 Plenary, feedback with drinks and snacks


Cardiff Fertility Studies



Patient interest constrains support possibilities

- Paulson 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...” (Shaalma & Kok p. 6, 2009)

Cardiff Fertility Studies 

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

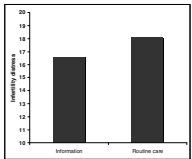
Cardiff Fertility Studies 

Preparatory interventions (attitudes)

MALE FACTOR

Stress reduction in male infertility patients: a randomized, controlled trial

Martin Pook, Ph.D.,* and Walter Kretzschmar, M.D.**
*Department of Psychology, University of Siegen, Siegen, Germany; and **Clinic of Andrology, Philipps-University of Marburg, Marburg, Germany




Group	Monthly Events
Information	~17
Routine care	~19

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]

Pook et al. 2005. Cardiff Fertility Studies 

Identify & refer people at risk

Plan, Pijnenborg, *Advance Access published March 13, 2010*
Human Reproduction, Volume 25, Number 3, 2010
 doi:10.1093/hrop/adv314

ORIGINAL ARTICLE *Psychology and counseling*

Who is at risk of emotional problems and how do you know? Screening of women going for IVF treatment

C.M. Verhaak^{1,2}, A.M.E. Lintsen¹, A.W.H. Evers¹, and D.D.M. Braat¹

¹Department of Psychological Psychiatry, Radboud University Medical Center, PO Box 1055, 6500 HZ Nijmegen, The Netherlands; ²Department of Obstetrics and Gynecology, Radboud University Medical Center, PO Box 1055, 6500 HZ Nijmegen, The Netherlands

*Correspondence address: E-mail: carolvh@isg.umcn.nl

Submitted on September 17, 2009; accepted on January 31, 2010; accepted on February 10, 2010

Figure 1 Classification of 156 patients based on D-SYM compared with post-treatment emotional problems

The FertIQoL
 The first internationally validated instrument to measure quality of life in infertile menstruating fertility patients.
 Professionals can prescribe FertIQoL FREE OF CHARGE.
www.fertiqol.org

Cardiff Fertility Studies

Reduce emotional and relational strain by tailoring to individual problem areas

Cousineau et al. 2008.

Cardiff Fertility Studies

Psychother Psychosom. 1999;68(1): 15-21.

Cognitive-behavioral therapy for idiopathic infertile couples.

Tiedemä-Cattar B, Fromm J, Krusek W, Pösch M.
 Department of Psychology, Dermatological Clinic, Philipps University, Marburg, Germany; tuschen@mailer.uni-marburg.de

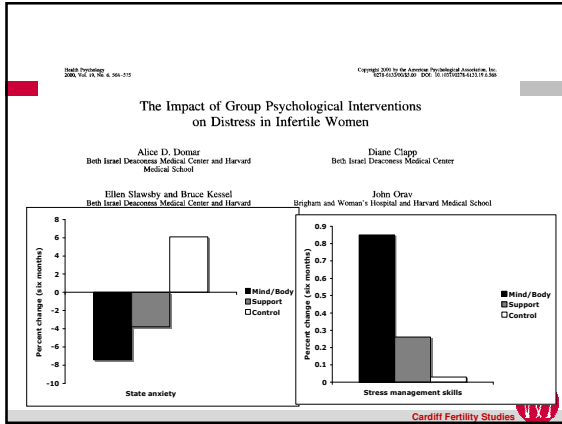
Abstract

BACKGROUND: The purpose of this pilot study was to evaluate the impact of a 6-month cognitive-behavioral therapy for infertile couples. **METHODS:** Seventeen idiopathic infertile couples participated in a therapy program comprised of modules to behaviorally optimize the chance of conception, improve sexual functioning and satisfaction, reduce thoughts of helplessness and, if necessary, improve marital communication skills. Pre- to post-treatment changes in the therapy group were compared to changes in two control groups. **RESULTS:** The therapy group showed an improvement in sperm concentration, a reduction in thoughts of helplessness and a decrease in marital distress. **By the end of** therapy participants practiced timed intercourse more reliably and reported unchanged sexual pleasure and satisfaction during the nonfertile period of the menstrual cycle. At the 6-month follow-up, problem-focused thoughts had decreased. The live birth rate was higher in the therapy group than in epidemiological samples. **CONCLUSION:** Preliminary data suggest that cognitive-behavioral treatment may be an effective approach for the treatment of infertility.

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)

Cardiff Fertility Studies

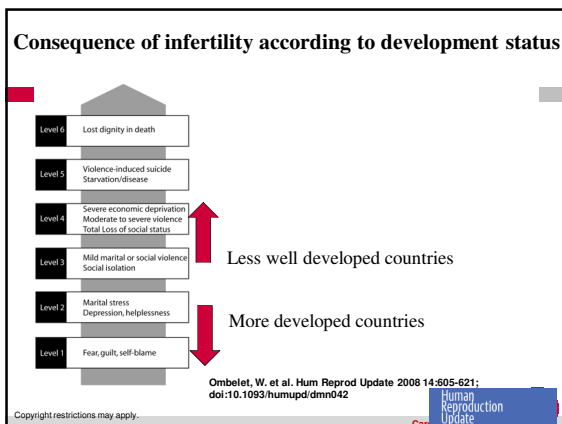


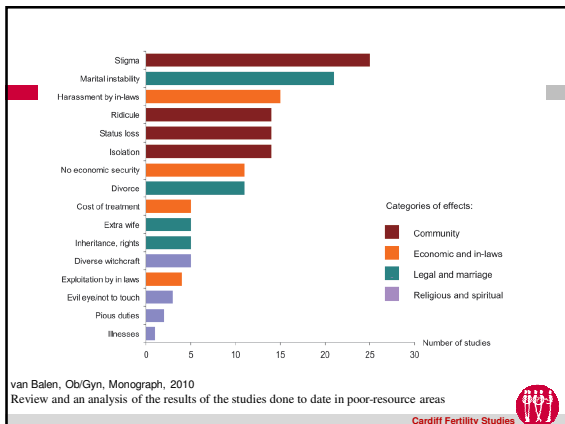
Communication intervention for migrant and minority populations

Six function model of medical communication	Goals	Immediate endpoints	Intermediate (end/or surrogate) endpoints	Long term endpoints
1. Fostering the relationship(s)	Good and effective relationship	e.g., + eye contact + patient participation - physiological stress measure	e.g., + trust + sense of rapport - satisfaction with consultation	+ patient satisfaction + patient health - physician stress and burn out
2. Gathering information	Adequate diagnosis and/or interpretation of symptoms	e.g., + explorative behavior + expression of patient concerns	e.g., + adequate diagnosis / treatment plan - diagnostic test ordering - medical errors	+ patient health + physician satisfaction
3. Providing information	Good information provision	e.g., + check understanding / explore prior knowledge - use of jargon	e.g., + recall + understanding	e.g., - patient uncertainty - patient autonomy
4. Decision making	Decision based on information and preference; patient values	e.g., + check decision making preference / patient values + provide information	e.g., - decisional conflict + satisfaction with decision	+ satisfaction with decision + health
5. Enabling disease & treatment related behavior	Adequate and feasible disease and treatment related behavior	e.g., + address patient motivation and efficacy	e.g., + illness related behavior + treatment adherence + life style + costs	+ patient health
6. Responding to emotions	Supporting the patient, enhancing the communication and referral where needed	e.g., + clinician explorative skills / stance + patient expression of emotions + time constraints	e.g., + patient sense of support + treatment of psychopathology	+ patient emotional adjustment - psychological distress + costs

Fig. 2. Functions of medical communication, its goals and outcomes.
de Haas & Bensing 2009. Patient Educ Couns

Cardiff Fertility Studies



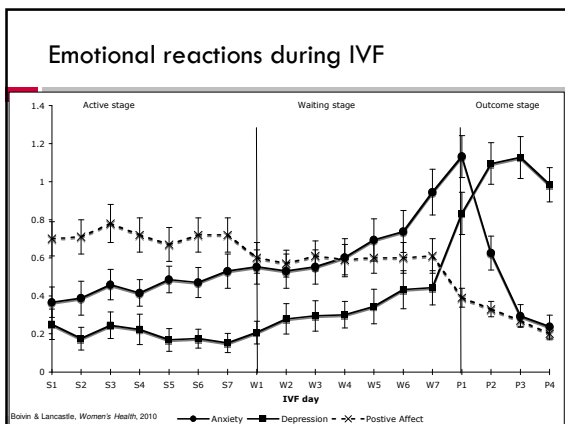


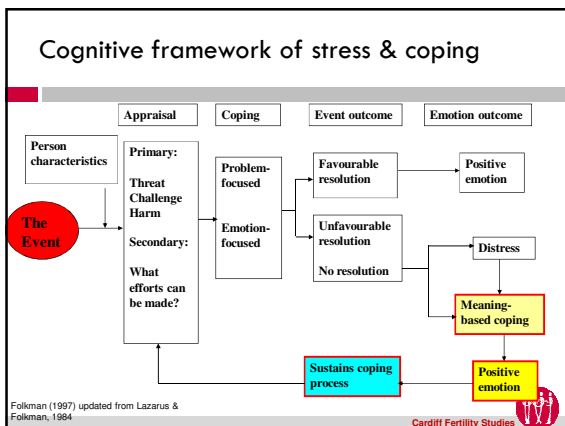
The first internationally validated instrument to measure quality of life in individuals experiencing fertility problems

Professionals can download FertiQoL FREE OF CHARGE

www.fertiqol.org

Cardiff Fertility Studies





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

- ### The Positive Reappraisal Intervention Card
- Ten statements
 - Rationale explained 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
- Lancaster and Boivin, Hum Reprod 2008. Cardiff Fertility Studies

PRCI patient leaflet

Coping with the IVF waiting period

When you are waiting to take the pregnancy test after your IVF embryo transfer you may often find yourself thinking about whether you are pregnant or not. You might also find yourself frequently checking for physical signs to tell whether you are pregnant or not. You may find that this intense focus on the result of treatment makes you feel nervous and worried. Patients often ask us for suggestions about how to deal with these intrusive and persistent thoughts. This leaflet describes a technique you can use to manage your worries during the IVF waiting period.

The Positive Reappraisal Technique

All situations involve some good aspects and some bad aspects and the aspects we pay attention to often determines how good or bad we feel.

Thinking more about the positive aspects of a difficult situation and dwelling less on problems or uncertainties about the future helps people feel better. This is especially true during the challenges of the IVF waiting period when there is not much a person can do to influence the outcome of treatment.

Etc. etc.

Lancaster and Bolvin, 2008. Cardiff Fertility Studies

Personal Control

Time Point	PRCI group	PMI group
ET	1.2	0.8
D2	0.8	0.7
D3	0.9	0.6
D4	0.9	0.6
D5	0.9	0.5
D6	0.9	0.5
D7	0.9	0.5
D1	0.9	0.6
D2	0.9	0.4
D3	0.8	0.3
D4	0.9	0.3
D5	0.9	0.2
D6	0.8	0.2
D7	0.9	0.2

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

Cardiff Fertility Studies

Endorsements


Evaluation dimension	PRCI group	PMI group
Use it again	3.3*	2.3
Recommend it	3.5*	2.8
Other tests	3.4*	2.5
Other IVF patients	3.8	3.4

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. * $p < .05$

Lancaster and Bolvin, 2008. Cardiff Fertility Studies

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

Cardiff Fertility Studies 

Potential effect on outcome?

Study or Subgroup	Treatment		Control		Weight	Risk Ratio		M-H, Random, 95% CI
	Events	Total	Events	Total		M-H, Random, 95% CI	Risk Ratio	
Chan 2006	18	65	10	108	9.8%	1.87	(0.85, 4.11)	
De Klerk 2005	6	22	7	22	5.6%	0.88	(0.35, 2.86)	
Domar 2000	52	95	5	25	6.7%	2.74	(0.95, 7.88)	
Eisenberg 1982	4	10	0	7	0.8%	6.55	(0.17, 251.46)	
Emery 2006	50	98	44	90	17.7%	1.04	(0.72, 1.52)	
Lewtas 2006	52	89	29	96	15.8%	1.85	(1.23, 3.07)	
Mc Quinney 1997	5	18	2	8	2.7%	1.11	(0.17, 7.11)	
Razalek 2005	11	21	15	31	10.9%	1.08	(0.52, 2.22)	
Sarrel 1985	6	10	1	9	1.6%	5.40	(0.44, 66.98)	
Schmidt 2005	22	30	10	30	15.9%	1.18	(0.73, 1.88)	
Stewart 1992	6	39	2	27	2.4%	2.08	(0.28, 15.37)	
Strawcs 2002	12	31	1	12	1.5%	4.65	(0.37, 58.54)	
Wachsmann 1997	35	115	7	23	8.5%	1.20	(0.41, 2.43)	
Total (95% CI)	279	643	148	488	100.0%	1.42	(1.02, 1.96)	

Test for heterogeneity: Chi² = 20.92, df = 12 (P = 0.05), I² = 43%
 Test for overall effect: Z = 2.76 (P = 0.006)

Hammerli et al. 2009;15:279. Copyright restrictions may apply. 

Potential effect on cycles to pregnancy?

Low marital stress

No. of cycles

Mdn 2.0 ± .17

Ongoing Pregnancy, Live Birth


High marital stress

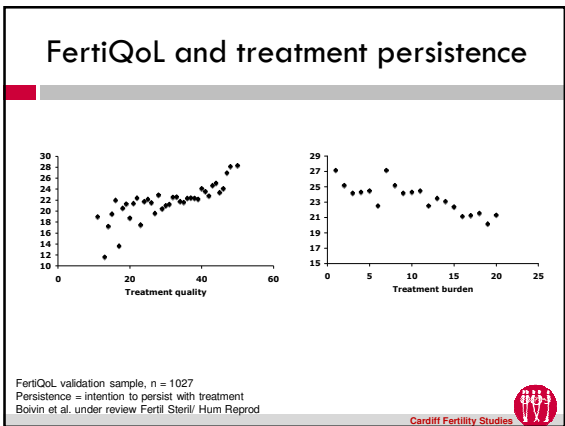
No. of cycles

Mdn 3.0 ± .20

Ongoing Pregnancy, Live Birth

Note. Cycle by marital stress interaction on live birth (B=0.182 ± 0.08, Wald(1)=4.76, P<0.05, OR=1.20; Model $\chi^2(F(3, 817))=27.03, P<0.001$). N=818 couples. Bavin and Schmidt, 2005.

Cardiff Fertility Studies 



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

Cardiff Fertility Studies
