STIGMA CONSCIOUSNESS AND SELF-EFFICACY IN INFERTILE COUPLES: CORRELATION AND GENDER DIFFERENCES

Professor João M. R. M. Justo
(Faculdade de Psicologia, Universidade de Lisboa)
Drª Carla F. S. Pais Vieira
(Psicóloga Clínica)
Professora Eleonora Veiga Costa
(Faculdade de Filosofia, Universidade Católica Portuguesa, Centro Regional de Braga)

ABSTRACT

Introduction: Infertility is increasing in western societies and consequences are deeply problematic once family and individual psychological problems are detected in infertile couples (IC) and rise up during medical treatment. Recent research suggests that stigma consciousness (SC) and self-efficacy (SE) may be affected in these couples.

Hypothesis: H1 - There is a significantly negative correlation between SC and SE in infertile men (IM) and in infertile women (IW). H2 – IW show higher levels of SC and lower levels of SE when compared with IM.

Method: Participants - IC (n = 59) attending an infertility hospital consultation were recruited. Instruments – a Socio-demographic Questionnaire, the Portuguese versions of the Adapted Stigma Consciousness Questionnaire and of the Infertility Self-efficacy Scale. Procedure – a) authorization of the Hospital's Ethical Committee, b) Informed Consent, c) interview with the researcher and questionnaires application, d) statistical analysis of the correlation between SC and SE and of the differences between infertile men and women on SC and SE.

Results: There is a significant negative correlation between SC and SE both in IM and in IW. When compared with their partners, IW present significantly higher levels of SC and significantly lower levels of SE.

INTRODUCTION

At the present moment infertility is a major concern in public health due to the fact it is increasing and because the costs of modern medical technologies are also rising up. Investigation consistently and repeatedly presented empirical data showing that variables of psychological distress are heightened in people who whish to reproduce are not able to do it without medical support (Cook, Parsons, Mason & Golombok, 1989; Golombok, 1992; Wasser, Sewall & Soules, 1993; Wasser, 1994; Domar, A., Clapp, D., Slawsby, E., Kessell, B., Orav, J., & Freizinger, M., 2000-b; Verhaak, Smeenk, Eugster, van Minen, Kremer, & Kraaimaat, 2001; Benyamini, Gozlan, & Kokia, 2005; Donkor & Sandall, 2007). This trend of results represents mostly the influence of a clinical model that proposes psychological suffering as consequence of infertility and forgets to consider infertility as a social condition (Greil, 1997; Greil, 2010).

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17

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Medical research in infertility, despite great efforts to develop new diagnostic and therapeutic techniques, always had to deal with a good amount of cases where biomedical factors were not powerful enough to explain couples reproductive difficulties. Clinically based psychological research tried to demonstrate that in those cases psychosomatic problems of unconscious origin were being able to prevent pregnancy (Orr, 1941; Deutsch, 1945; Benedek, Ham Rubenstein, 1953; Langer & Ochandorena, 1953; Stieve, 1940 & 1942, cited by Langer, 1983; Seguy, 1980; Cooper, 1985). Because this cause-effect hypothesis has never been empirically confirmed, the end of the XXth Century has turned particularly sceptical about the psychosomatic hypothesis. When it would be most unexpected, a new kind of empirical results recaptured the attention of clinical psychologists to this kind of aetiology. This is specifically the case of psychotherapeutic interventions with infertile women, which not only promote recovery from pathologic levels of psychological suffering states (Domar et al., 2000-b), but also enhance pregnancy rates (Domar et al., 2000-a). Without forgetting that Jean Reboul's (1976) collection of clinical cases had already promised this kind of effect, the most interesting question is that not only these results can be replicated as also they are associated to changes in the immunological functioning of infertile women specifically in NK cell activity (Hosaka, Matsubyashi, Sugiyama, Izumi & Makino, 2002). Because Hosaka and his colleagues showed that 5 sessions of group psychotherapy are responsible for a decrease in NK cell activity in an "experimental group" of infertile women, while in a control group values are stable, we can now hypothesize about cases without a biomedical specific aetiology for infertility: a) as a result of psychological suffering, immunological changes take place namely in NK cell activity and those changes are at least partially responsible for the reduction in pregnancy incidence among these couples; b) when levels of psychological suffering are reduced due to specific interventions (or even due to spontaneous positive events in infertile couples' daily life) NK cell activity is not over stimulated any more and starts to decrease turning pregnancy chances some what larger.

Recently, psychological research showed the importance of infertile couples' perceptions about their reproductive difficulties and its consequences in social relations, as well as about gender differences in this respect. Namely: a) perceived stigma about infertility is higher in infertile women then in infertile men; b) in women stigma and disclosure do not seem to be associated whereas in men higher stigma associates with lower disclosure; c) both in men ad in women lower levels of social support are related to stigma perception (Slade, O'Neill, Simpson & Lashen, 2007). Self-efficacy in infertility has also being studied specially in its relations with fertility-related stress, global perceived stress and with coping strategies, allowing us to conclude that: a) self-efficacy correlates negatively with fertility-related stress as well as with global perceived stress; b) self-efficacy correlates positively with positive reappraisal, self-controlling and distancing coping; c) self-efficacy correlates negatively with escape-avoidance and with acceptance of responsibility (Cousineau, Green, Corsini, Barnard, Seibring & Domar, 2006). It also seems that higher levels of education can reduce the perception of infertility-related stress (Donkor & Sandall, 2007). Interestingly, online psychoeducational support is able to increase infertility self-efficacy as also to decrease global stress in infertile women (Cousineau, Green, Corsini, Seibring, Showstack, Apllegarth, Davidson & Perloe, 2008).

Due to psychological and social restrictions imposed by stigma perception in infertile couples' daily life an because self-efficacy is so important during the process of medical diagnosis and treatments offered to infertile couples, interrelations between those two variables should be under the focus of empirical research. Not only can we imagine that infertility stigma consciousness (ISC) may become strong enough to impair infertility self-efficacy (ISE) but we also may predict that higher levels of the former should be followed by lower levels of the second variable.

Hypothesis

According to the present knowledge about the psychological experience of infertile couples, we would like to present three hypothesis for infertile couples: H1- self-efficacy in infertility and stigma consciousness about infertility have a negative and significant correlation; H2- women present lower levels of self-efficacy in infertility than men; H3- women present higher levels of stigma consciousness about infertility than men.

METHOD

Participants

Participants were 59 infertile couples followed at the Reproductive Medicine Unit of the Centro Hospitalar do Vale do Ave (Guimarães, Portugal). A more detailed description of these subjects can be found in Vieira (2009). Women´s age (M = 32.64, SD = 4.58) seemed to be lower than men´s age (M = 34.05, SD = 5.51), while women´s education (M = 11.14, SD = 4.12) seemed to be higher than man´s education (M = 9.39, SD =3.19). According to paired samples t statistics, the age difference is significant (t = -2.587; df = 58; p = .012) and the same happens for the difference in education (t = 3.521; df = 58; p = .001). Professional areas were distributed much the same way among men and women, but more males were working at the top of public administration and of private enterprises (as also more frequently in agriculture) while more females were working in inter-medium level jobs. The socio-economic status of these couples was predominantly medium and medium superior, but when compared to men the double of women was reaching the superior level. About occupational status, unemployment was less than 6%, making that more then 94% of men and women were working in regular jobs. Only 2 couples were living out of wedlock, and all the remaining couples were married.

Concerning these couples´ experiences of infertility: a) 25.4% had a female factor responsible for their infertility, 22.0% had a male factor, 20.3% had both a female and a male factor and 32.2% were still facing a diagnosis of unexplained infertility; b) 11.0% were experiencing secondary infertility; c) they were trying to reproduce for about 5 years (M = 60.20 months, SD = 33.93); d) they received their infertility diagnosis at less then 4 years (M = 41.76 months, SD = 30.95) and e) they started their infertility treatment at less then 2 years (M = 22,46, SD = 25.84).

Specifically about infertility treatments, among these couples: a) 33.9% took medication in the form of pills; b) 67.8% took medication in the form of injections; c) 11.0% received surgical treatment; d) 34.7% were submitted to intrauterine insemination; e) 40.7% participated in IVF; f) 28.0% already had ICSI; g) no couples received sperm donation but h) 1.7% received eggs from donors.

Instruments

Hypothesis testing required three instruments: a Socio-Demographic and Clinic Questionnaire, the Infertility Self-Efficacy Scale and the Adapted Stigma Consciousness Questionnaire.

The Socio-Demographic and Clinic Questionnaire was created specifically for this study aiming to get information about variables like: age, number of education years with success, education level, professional area, occupational status, socio-economic status, marital status, infertility factors, primary or secondary infertility, time trying to reproduce, time since infertility diagnosis was received, time since first infertility treatment, medication use, surgical treatment, intra-uterine insemination, IVF, ICSI, sperm donation and eggs donation.

The Infertility Self-Efficacy Scale (ISES)

The ISES (Cousineau et al., 2006) is a 16 items instrument aiming to measure the perception of self-efficacy in people facing infertility treatments. Answers are recorded in Likert kind scales varying from 1 (Not at all confident) to 9 (Totally confident). Principal component analysis (PCA) for this scale present a single component with an eigenvalue of 8.89 (55.55% of explained variance), and the internal consistency analysis (ICA) shows an = .94.

After the authorization of the first author of the original scale, we performed a translation into Portuguese language. The Portuguese version was then translated back to English language by a senior colleague of the Clinical Department of the Psychological Faculty of Lisbon University (CDPFLU). Differences between the original English version and the last version were few and so the Portuguese version was considered adequate.

Factorial analysis (FA) was performed using men and women together (n = 118). Indexes for FA seemed to be good enough (KMO = .895; Bartlett´s sphericity test = 1093.03, df = 120, sig = .000). Non-rotated PCA shows that the first factor (eigenvalue = 7.70; 48.11% of explained variance) has got vary good loadings (.481-.872) for all the original 16 items and only item 12 is better explained by a second

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19

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component. After varimax rotation, four components emerged and items spread over them (5 items for the 1st, 4 items for the 2d, 4 items for the 3rd and 3 items for the 4th). Separate FA for female and male data also shows good loadings for all items in the first factor, despite the fact that a few items show better loadings in another factor.

ICA shows an = .922; after deleting item 12, rises up to .925. Separate ICA for female and male data also suggest the elimination of item 12. Because item 12 was better explained by the second component, and once it reduces the value of the ICA we decided that the Portuguese version of the ISES should be constituted only by 15 items (all the original items except item 12).

The Adapted Stigma Consciousness Questionnaire (ASCQ)

The ASCQ (Slade et al., 2007), in its final version, is a 9 items instrument designed to evaluate how people with fertility problems perceive to be discriminated by people without those problems. Answers are recorded in Likert kind scales varying from 0 (strongly disagree) to 6 (strongly agree). This is a specific evolution of the original 10 items Stigma Consciousness Questionnaire (Pinel, 1999) created to evaluate how much people expect to be stereotyped by others in general. According to this author, these 10 items are explained by a single factor (eigenvalue = 2.92; 83.0% of the common variance explained) extracted using varimax rotation after a PCA. The ICA of Pinel's 10 items scale shows an = .74, while ICA of Slade et al. (2007) 9 items scale indicates an = .77.

After the authorization of the first author of the adapted scale, a translation into Portuguese language was performed including the 10 items of the first version of the adapted scale. This version was then translated back to English by the same senior colleague of the CDPFLU. Once again, differences were few and the Portuguese version was considered adequate.

FA was performed using men and women together (n = 118). Indexes for FA seemed to be good enough (KMO = .753; Bartlett´s sphericity test = 260.387, df = 45, sig = .000). Non-rotated PCA shows that the first factor (eigenvalue = 3.195; 31.946% of explained variance) has got vary good loadings (.429-.770) for all items except for items 8 and 9 which are better explained by a second and by a third component respectively. After varimax rotation, three components emerge and items spread over them (4 items for the 1st, 3 items for the 2d and 3 items for the 3rd). Separate FA for female and male data also shows good loadings for all items in the first factor, except for items 8 and 9. Only three items show a better loading in a different factor, despite the fact that their loadings in the first factor are still good.

ICA shows an = .697; after deleting items 8 and 9, rises up to .766. ICA for women data also suggest to delete items 8 and 9, while in men data ICA suggest to delete items 3 and 9.

Because items 8 and 9 were better explained by the second and by the third components, and once they reduce the value of the ICA we decided that the Portuguese version of the ASQC should be constituted only by 8 items (all the original items except items 8 and 9).

Procedure

The project of this study was submitted to the Ethics Commission of the Hospital and authorization was obtained. Interviews were performed between February and April 2009. Couples answered the questionnaires before or immediately after their consultation. Written informed consent was obtained for all couples after the explanation about the aims and procedures of this research.

RESULTS

Descriptive statistics for infertile men and women in self-efficacy and stigma consciousness are displayed in Table 1.

20

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Table 1: Descriptive statistics for ISES and ASCQ, separately for men and women.

Statistics Variables	M	SD	Min	Max	Skewness	Kurtosis
ISES (W)	96.88	20.03	47.00	133.00	-.544	-.196
ASCQ (W)	16.29	9.65	.00	37.00	.114	-.707
ISES (M)	104.14	17.59	58.00	133.00	-.386	-.432
ASCQ (M)	13.78	8.43	2.00	35.00	.581	-.236

(W): women data only. (M): men data only.

Testing hypothesis 1 (H1)

For H1, we decided to test it separately in men and in women. Because both ISES and ASCQ are supposed to measure continuous variables and both scales are nearly of interval type, and once distributions do not differ significantly from normal distribution in women data (ISES: KS = .639, A.S. = .809; ASCQ: KS = .736, A.S. = .650) as also in men data (ISES: KS = .562, A.S. = .910; ASCQ: KS = .856, A.S. = .456) we decided to use Pearson correlation. Since H1 is a directional hypothesis, interpretations will be made according one tailed values. About women, ISES and ASCQ do correlate negative and significantly (r = -.318, p = .007), and for men the same happens (r = -.262, p = .023). According to this, H1 seems to be confirmed.

Testing hypothesis 2 (H2)

For H2, because there is a significant difference between men and women age and education, a repeated measures analysis was performed. Conditions seemed to be acceptable for this analysis since variables are continuous, scales are of interval type, distributions do not differ from normal and the Sphericity test does not rejects H0. In this analysis, infertile couples were the subjects, gender was the factor, infertility self-efficacy in women and in men were introduced as the within subjects variables, and age differences and education differences between women and men were introduced as covariates. The results of these analyses are displayed in Table 2.

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21

Table 2: Results of repeated measures analysis between men and women ISE, using gender as factor and age and education differences as covariates.

Statistics Factor	Type III Sum of Squares	Df	F	Sig.
Gender	1776.943	1.000	15.080	.000
Age differences	368.739	1.000	3.129	.082
Education differences	17.006	1.000	.144	.705

As can be seen in Table 2, the effect of gender remains significant even after controlling for the effects of age and education differences between men and women belonging to the infertile couples of our sample. Once that men's ISE (M= 104.14; SD = 17.59) is higher than women's ISE (M = 96.88; SD = 20.03), it seems that H2 is confirmed.

Testing hypothesis 3 (H3)

For H3, and once more because there is a significant difference between men's and women's age and education, a repeated measures analysis was performed. Also for this analysis conditions seemed to be acceptable since variables are continuous, scales are of interval type, distributions do not differ from normal and the Sphericity test does not rejects H0. In this analysis, infertile couples were the subjects, gender was the factor, infertility stigma consciousness in women and in men were introduced as the within subjects variables, and age differences and education differences between women and men were introduced as covariates. The results of these analyses are displayed in Table 3.

Table 3: Results of repeated measures analysis between men and women ISC, using gender as factor and age and education differences as covariates.

Statistics Factor	Type III Sum of Squares	df	F	Sig.
Gender	234.857	1.000	7.886	.007
Age differences	188.514	1.000	2.352	.131
Education differences	3.843	1.000	.162	.689

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As can be seen in Table 3, the effect of gender remains significant even after controlling for the effects of age and education differences between men and women belonging to the infertile couples of our sample. Once that men's ISC (M= 13.78; SD = 8.43) is higher than women's ISC (M = 16.29; SD = 9.65), it seems that H3 is confirmed.

CONCLUSION

After observing that ISE and ISC are negatively correlated in a significantly way it is possible to argue that one of these variables produces a significant effect upon the other. Namely, the perception that lack of children mobilizes social attention, and that it influences the way common people relates with infertile couples is possibly of utmost importance. In future research it would be interesting to study if the relation between ISE and ISC is a direct one or if it is mediated by other variables. Also of interest, namely for psychologists working in infertility hospital departments, would be the possibility of programming psychotherapeutic interventions according to the knowledge related with the existence and importance of those variables, as also according to the theoretical relation between them.

When we think about the psychological experience of infertile couples, we should not ignore that self-efficacy while facing stressing therapeutic and diagnostic medical procedures is a difficult challenge where many couples will feel to breakdown. If the stigma consciousness related to infertility will prove to be a part in this process, then the question should be raised about the opportunity to introduce this aspect in psychotherapeutic programs before to work on support related to stress produced by the interactions between infertile couples and infertility experts.

One other aspect to deal with is the question whether psychotherapeutic interventions should be performed only with infertile women or if psychotherapy should be offered for infertile couples. In spite the many decades after Benedek and colleagues (1953) have claimed for infertility to be seen as a couple's problem, it remains common that interventions designed to promote psychological help are still performed with women only. Having in mind that there are significant differences between women's and men's perceptions about ISE as well as about ISC, clinical psychologists should think about what happens in these couples intimacy when support is delivered only for women. The possibility of working with groups rather than with single patients should be articulated with the need to include husbands in these groups in order to enhance the chances of infertile couples to increase benefits from receiving specialized medical support in the area of medically assisted reproduction.

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