The impact of information therapy on stress in infertile young couples

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General Note

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ABSTRACT

Infertility is a clinical term defined as the inability to conceive after at least 12 months of regular and unprotected intercourse. Acute and chronic stress has the ability to negatively affect infertility therapy, form a defective cycle and reduce the chance of succession

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even more. The objective of this study was to evaluate the effect of infertility treatment procedure awareness on the total stress levels of infertile couples and 5 lesser tests were conducted (social, sexual, communicative anxiety, rejection of childfree lifestyle and the need for parenthood). This semi-experimental study was conducted as a clinical trial on 220 infertile couples who had visited the infertility clinic of Shahid Motahari Hospital, Urmia, Iran and other corresponding clinics during 2017. Simple sampling was available and the data were gathered using Newton infertility stress questionnaire prior to and subsequent to notification of the patients. The data were processed using SPSS v.17 and data with P-value <0.05 were regarded as significant. The average points achieved by the main and control groups prior to intervention were 58.95±9.76 and 59.30±9.32, respectively. Paired t-test results revealed that a meaningful difference exists between the two groups (P<0.05). However, following education and awareness, the attained scores of the main group reduced to 55.05±6.66, indicative of a meaningful difference between the main and the control group (P<0.005). Due to the high stress levels seen in infertile women and the negative impact of elevated stress on infertility treatment and the positive effect of awareness on stress relief, it was proposed that education and awareness should also be integrated into the infertility treatment procedure program.

Key words: Infertility, stress, awareness.

1. INTRODUCTION

Infertility is described as the inability to conceive after one year of regular unprotected intercourse (Danforth DN. 2008). This condition is also associated with various social, psychological, physical and financial stresses (Simbar, 2010). One out of five couples are infertile and the total prevalence increases by two million couples annually. Infertility affects between 10-15% of the couples in the US and about 20% of the western population (Zuraida. 2010; Fritz, 2011; Sbaragli, 2008). Assisted Reproductive Technologies (ART), a common practice among such couples, seeks to cure infertility by employing techniques to bypass natural fertilization (Sullivan, 2013). Infertility treatment is usually accompanied by high stress in such couples. Studies have revealed that women who use ART are more prone to anxiety, stress and depression than the normal population (Beutel, 1999; Kee, 2000). Also, this stress tends to be more intense in women compared to men (Casu and Gremigni, 2016. Infertility and psychological disorders have a positive correlation with each other. It is believed that high stress precedes and has a causative effect on infertility, giving rise to the "stress theorem". In a study performed by Gallinelli et al., the correlation between stress and infertility was seen to be prominent. Their results revealed that serum cortisol and corticotropin hormone (CRH) levels were higher in infertile couples compared to the normal population (Gallinelli, 2001). Other studies have also emphasized on the negative impact of higher stress on ART and fertility treatment succession rates (Gourounti, 2011; Lancastle, 2005; Cooper, 2007; Karlidere, 2008). A sense of threat, sexual anxiety, hopelessness and marital issues are directly related to infertility (Edelmann, 1986). Although infertility itself is a main cause of stress in such couples, stress does not necessarily cause infertility. Many other factors also play significant roles in this process, a paramount factor among which is chronic anxiety. Preclinical studies suggest that chronic stress has long term implications on the nervous system (Kaufman, 2000). Depending on duration, period and their release, stress mediators may have both protective and destructive effects (McEwen, 2005). In Iran, about 1 million couples are infertile and due to the religious, historical and social culture of the country, fertility is regarded as a very important issue among the general population. Infertility also plays a great role in marriage integrity, being a major cause of divorce in such populations (Ardekani, 2010). In 2002, information therapy was suggested by Camper et al. Information therapy was proposed as evidence based information approach to specific patients, with the aim of raising awareness in patients to enhance their sense of judgement or to cause behavioural change in such subjects. Information therapy is widely accepted as a therapeutic method in which information is provided with the aim of improving physical and psychological health (Bornkessel, 2014). In some instances, information therapy, true to the word, is a prescription order which compels patients to study specific information regarding specific subjects. On the other hand, information therapy is used to enhance the decision-making ability in subject patients. In general, information therapy aims to increase targeted and purposeful information and is also more beneficial to patients (Butcher, 2007). Information therapy may positively affect the relationship between patients and health care centre employees, reduce costs and also improve health results by the way of better decision making (Mettler, 2005). Previous studies conducted on patient-physician relationships were focused on various opinions of physicians concerning information providence and patient satisfaction (Zarea Gavgani, 2013; Beaudoin, 2011). However, none has studied the impact of infertility treatment process awareness on stress levels in infertile couples.

The notification and comprehension of steps taken in infertility treatment, is by itself, a stressful experiment. On the other hand, the complexity, the excessive duration, repeated visits and high costs of such methods coupled with the significantly low success

rates also give rise to the incidence and exacerbation of stress. About 80% of patients who have experienced IVF therapy have exhibited moderate to severe stress. The education of infertile patients and enhancing their knowledge is the cornerstone of infertility treatment in all health and medical fields. The fear of the unknown gives rise to stress and anxiety.

By explaining unknown matters and familiarizing patients with various infertility treatment methods, stress and anxiety in such patients may be reduced. After receiving guidance and information, patients will be able to better adjust to current circumstances. It is the right of patients to actively participate in their treatment process. Also, their involvement positively affects the outcome. Considering the high visit rates to public fertility centres, lack of information therapy programmes may lead to the gathering of biased and incorrect data by the patients via unverified sources, thereby increasing confusion and stress. Therefore, with regard to the emphasis of various scientific literatures on the necessity of stress reduction prior to treatment engagement, this study was designed based on stress reduction by providing information therapy to infertile patients visiting fertility clinics (Shahid Motahari Educational Hospital, Urmia).

2. MATERIALS AND METHODS

This interventional study, which was approved by the research and ethics committees of Urmia University of medical sciences (ir.umsu.rec.1396.211), enrolled 220 infertile couples who had visited fertility clinics corresponding to Shahid Motahari Education Hospital, Urmia. Simple sampling was available and data were gathered using Newton's fertility problem inventory, before and after information therapy. As it is also evident in the literature, general stress and stress induced by infertility are two separate matters (Edelmann, 1998; Sexton, 2010). Newton's Fertility problem inventory is highly capable of differentiating between general and infertility induced stress (Born, 2015). The first section of the inventory focuses on personal information (age, literacy, duration of infertility, cause of infertility, smoking) while the second section, which consists of a questionnaire of 46 items, evaluates the concerns of patients from a general approach, also sub categorizing these concerns into 5 categories of social, sexual and Relationship concern, a Rejection of childfree lifestyle and the Need for parenthood. The answers are scored based on the Likert 5-point scoring system from (1): Complete disagreement to (6) complete agreement. In order to assess the validity of the data provided in the first section (demographic data), content validity was used. The reliability and validity of the second section of the inventory was evaluated by Touran Alizadeh in 2006. Those results were inferred to that of this study.

The inclusion criteria are as follows: infertile patients visiting fertility centres, having at least minimal literacy, no history of chronic systemic illness, diabetes and cardiovascular diseases, no administration of anti-depressants, psychedelic drugs or alcohol. Exclusion criteria were the death of a first degree relative, more recent than 6 months prior to commencement of the study.

Couples were divided into two groups, control and intervention, with the assistance of the Rand list software. In both groups, demographic data were gathered and recorded by the researcher. Subsequently, in order to preform stress evaluation, the FPI was handed out to subjects. Three sessions of educational and communicative therapy were held for half of the participants.

The first session, which was held for groups of subjects, focused on the general matters of infertility, such as definition, causes, ART, initiation of treatment and the role of either of the couples in the process and also medications used in compliance with therapies. The second session was held in order to provide an opportunity to ask questions and also to share previous experiences concerning ART and fertility treatment. The third session, which was held in private for each of the couples, focused on questions and concerns of the attending couples, which were asked directly from the physician. At the end of the third session, the FPI was once again completed by the attending subjects.

The data gathered were analysed using descriptive statistics (percentage, frequency, mean and SD). The Chi square test or the Fisher's exact test and independent sample t-test or the non-parametric Mann-Whitney U test and paired sampled t test or the nonparametric Wilcoxon test were used in analyses, applying the SPSS software v.17. A p-value<0.05 was deemed meaningful.
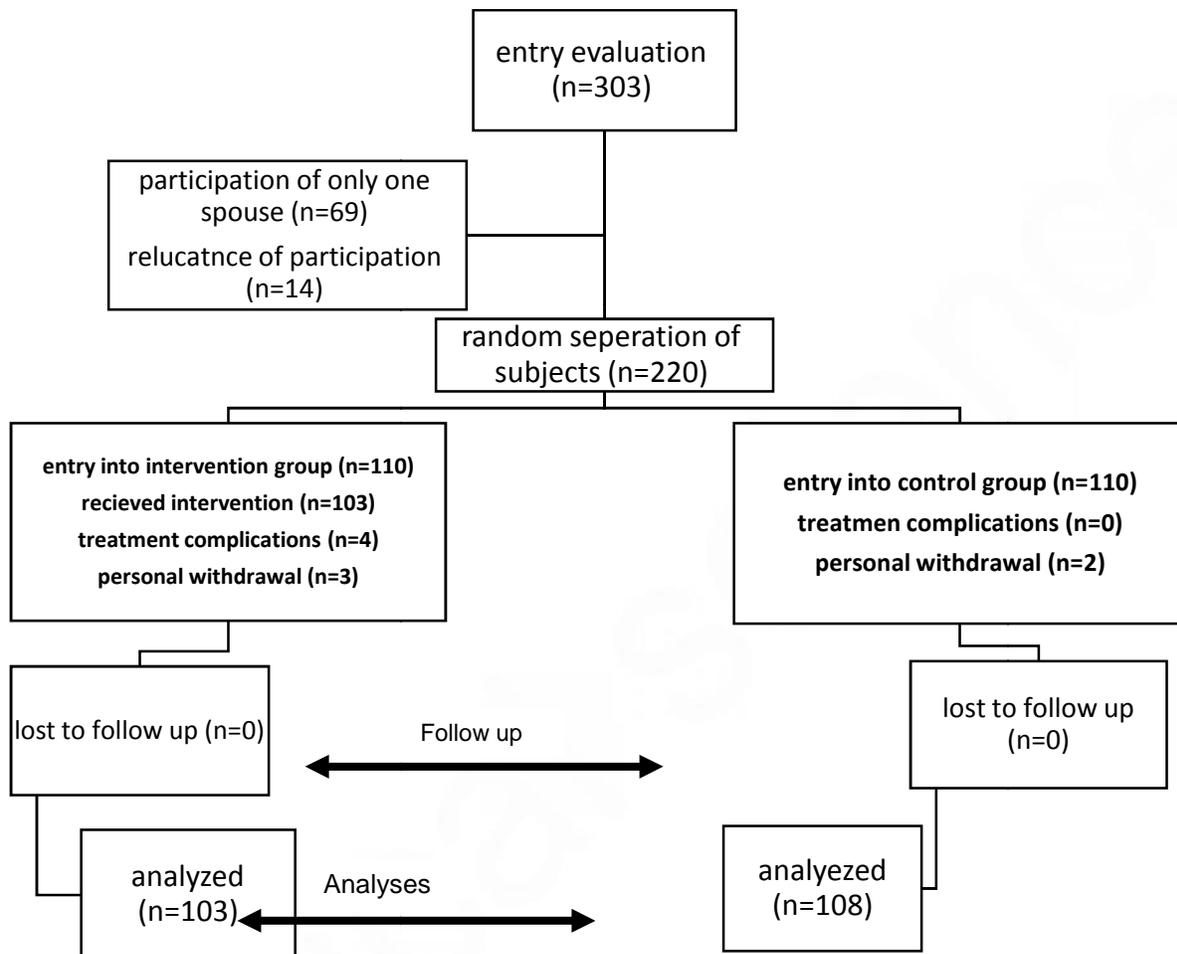
3. RESULTS

A total of 220 couples were enrolled and analysed in this study. Each group primarily consisted of 110 couples, however only 103 and 108 couples of the intervention and control groups managed to complete the study. Loss of follow-up is as follows: in the intervention group, 4 couples stopped due to treatment complications while 3 couples stopped due to personal withdrawal; in the control group, 2 couples discontinued due to treatment complications (flowchart 1).

The average age of the participants was 31.74±6.23 (range: 19-50). The average infertility period was 36 months; 69.1% and 30.9% as a result of primary and secondary infertility, respectively. A negative smoking history was observed in 88% of the intervention and 89.1% of the control groups.

Amongst the intervention group, 51 subjects (50.1%) and amongst the control group, 60 subjects (56%) had received below college education. No significant variation was observed between the intervention and control groups regarding literacy (P=0.14).

Problems of ovulation were recognized as the major cause of infertility, responsible for 40.2% and 52.3% of infertility instances in the intervention and control groups respectively. This difference is not statistically significant (P=0.18).

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                          │  entry evaluation   │
                          │      (n=303)        │
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  ┌──────────────────────────┐      │
  │ participation of only one│      │
  │     spouse (n=69)        │      │
  ├──────────────────────────┤      │
  │ relucatnce of participation     │
  │        (n=14)            │      │
  └──────────────────────────┘      │
                          ┌─────────────────────┐
                          │ random seperation of│
                          │  subjects (n=220)   │
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entry into intervention group (n=110)
recieved intervention (n=103)
treatment complications (n=4)
personal withdrawal (n=3)

entry into control group (n=110)
treatmen complications (n=0)
personal withdrawal (n=2)

lost to follow up (n=0)

lost to follow up (n=0)

Follow up

analyzed (n=103)

Analyses

analyezed (n=108)

Flowchart 1

The results gathered by descriptive stress score index from 5 aspects (social, sexual and Relationship concern, a Rejection of childfree lifestyle and the Need for parenthood), and also the total stress level prior to study initiation on both control and intervention groups, as shown in Table 1, no meaningful difference was present between the two groups.

Based on the results presented in the table and that of the Paired t-test for stress score from 5 aspects, it was observed that the total stress in all 5 aspects and also the average stress score of the intervention group before and after the study were statistically different and this average decreased following the intervention (P<0.05).

A comparison of the average stress score from 5 aspects (social, sexual and Relationship concern, a Rejection of childfree lifestyle and the Need for parenthood) and the total stress scores before and after intervention reveals that no statistically significant variation was found in the control group. Comparison of mean stress scores between subcategories of FPI in the two study groups revealed that meaningful differences are present between values pertaining to the intervention and control groups. The results are presented in Table 4.

Table 1 Descriptive stress score index from 5 aspects of sexual and Relationship concern, a Rejection of childfree lifestyle and the Need for parenthood and total stress prior to study initiation in the study and intervention groups

Stress score	Intervention group (n=103)	Control group (n=108)	Difference of means	t-test	P value
Social concern	56.18 ± 12.20	57.64 ± 12.73	- 1.45	0.84	0.39
Sexual concern	56.45 ± 13.70	55.76 ± 13.23	0.69	0.37	0.64
Relationship concern	56.01 ± 13.88	58.58 ± 13.23	- 2.57	1.37	0.17
Rejection of childfree lifestyle	55.75 ± 14.70	56.07 ± 14.23	- 0.32	0.16	0.87
Need for parenthood	67.89 ± 14.04	67.12 ± 14.77	0.77	0.38	0.69
Total stress	58.95 ± 9.76	59.30 ± 9.32	0.35	0.26	0.79

Table 2 A comparison between stress scores from 5 aspects of social, sexual and Relationship concern, a Rejection of childfree lifestyle and the Need for parenthood and total stress before and after study initiation in the intervention group:

Stress score	Prior to study (n=103)	After study (n=108)	Difference of means	t-test	P value
Social concern	56.18 ± 12.20	52.71 ±11.26	3.47	2.12	0.03
Sexual concern	56.45 ± 13.70	49.97 ± 11.24	6.48	3.71	0.0002
Relationship concern	56.01 ±13.88	54.20 ± 7.89	1.81	1.51	0.04
Rejection of childfree lifestyle	55.75 ± 14.70	61.38 ± 12.7	- 5.63	2.99	0.003
Need for parenthood	67.89 ± 14.04	57.21 ± 13.19	10.68	5.62	0.001>
Total stress	58.95 ± 9.76	55.05 ±6.66	3.9	3.35	0.001

Table 3 Comparison of stress scores from 5 aspects (social, sexual and Relationship concern, a Rejection of childfree lifestyle and the Need for parenthood) and total stress score, before and after intervention, in the control group. A

Stress score	Prior to intervention (n=103)	After intervention (n=108)	Difference of means	t-test	P value
Social concern	57.63 ± 12.73	56.18 ± 12.50	1.45	0.84	0.39
Sexual concern	55.76 ± 13.23	56.91 ± 13.10	1.15	0.64	0.52
Relationship concern	58.58 ± 13.23	57.90 ± 13.44	0.68	0.37	0.70
Rejection of childfree lifestyle	56.07 ± 14.23	54.81 ± 14.40	1.26	0.64	0.51
Need for parenthood	67.12 ± 14.77	65.46 ± 14.55	1.66	0.83	0.40
Total stress	59.30 ± 9.32	58.25 ± 9.08	1.05	0.83	0.40

Table 4 Comparison of means between subcategories of FPI in the intervention and control groups

Stress score	Intervention	Control	P value
Social concern	3.47 ± 1.3	1.45 ± 0.75	0.001>
Sexual concern	6.48 ± 2.5	1.15 ± 1.1	0.001>
Relationship concern	1.81 ± 0.74	0.68 ±0.66	0.002
Rejection of childfree lifestyle	5.63 ± 2.1	1.26 ± 1.02	0.018
Need for parenthood	10.68 ±3.7	1.66 ± 1.18	0.001>
Total stress	3.9 ± 1.18	1.05 ± 0.99	0.001>

4. DISCUSSION

Infertility is a prevalent disease with various social, economic and health implications, both on individual and social levels, which may in turn prove to be stressful and psychologically threatening. Infertility is a stressful experience. The stress arises from the threat that infertility imposes on the cognition and also physical, sexual, spiritual, sensual and psychological experiences, both in the present and the future (Tufford L. 2011). The results of this study revealed that the average infertility stress (social, sexual and Relationship concern, a Rejection of childfree lifestyle and the Need for parenthood) scores is significantly high in infertile couples, the highest score was obtained pertaining to the need of maternity and parenthood, which is consistent with the results of other studies (Gourounti, 2011). The desire of motherhood is strong in women, and it may also be considered as a necessity of life. It is also an indicator of personality maturation in couples (Benyamini, 2009; Jedrzejczak, 2004). The role of motherhood plays a big role in this maturation and women are truly suited for it (Abbey, 1992). The inability to conceive a child is a stressful experience for couples (Cousineau, 2007). The fate of infertile women is highly dependent on their socio-economic status, as couples with higher standing have fewer problems regarding the matter (Okonofua, 1997). Men also have a negative view on infertility and believe that it is followed by loss of social standing and discontinuation of their bloodline. Studies have revealed that throughout the world, people of different standing and various cultures react differently to the concept of infertility (Dyer, 2002). Alizadeh et al., stated that "infertile women have to carry a burden of stress exceeding their endurance and this stress may affect marital relationships, bring failure to sexual and marital relationships and eventually lead to critical circumstances". They also suggested that CBT therapy is able to affect infertility stress (Alizadeh, 2005). In a study performed by Chun et al, on the stress of infertile women undergoing IVF therapy which was conducted on both an intervention and a control group, it was revealed that psychological and physical intervention led to reduced stressed at the day of ovary stimulation and fetus relocation (Chan, 2006). The current study revealed that information therapy impacts fertility treatment stress levels in infertile couples in a statistically meaningful manner, reducing total stress levels in the intervention group. Also, no meaningful variation was observed in stress reduction between the different age groups, literacy levels and various infertility durations which is consistent with the results of other studies (Faramarzi, 2013). It is also interesting that information therapy decreases stress levels in 4 sub categories (social, sexual, Relationship and need for parenthood) and increases the stress level of Rejection of childfree lifestyle SA subcategory in a statistically significant manner. In a study performed by Latifnezhad et al. (with an individual consultation approach), although stress levels in 4 sub categories (social, sexual, Relationship and need for parenthood) is decreased following intervention, no statistical difference was recorded between the intervention and control groups concerning the stress levels of Rejection of childfree lifestyle SA (Latifnejad. 2009). The reason why the stress level of this subcategory has increased in this study, might in part be due to the exacerbation of the desire to have a child following group talks and consultations, and in part due to the different nature of intervention in this study (information therapy concerning infertility treatment procedure) compared to other studies. It is evident that lack of knowledge concerning therapeutic methods is the most prevalent complication of infertility treatment. However, this problem is not addressed as much as it should be and physicians tend to initiate treatment without providing patients with necessary and essential information about the process. This is the reason why the patients believe that an informative communication between themselves and the physicians is the key to their reassurance. Therefore, in order to improve the results of fertility treatments, it is mandatory that consultations be provided in order to raise awareness regarding therapeutic procedures.

5. CONCLUSION

Since the infertility clinic of Shahid Motahari Educational Hospital is the only infertility centre throughout the province, patients of various ethnicities, cultures and demographic backgrounds visit this centre, mandating familiarity of the health care professionals

with these various backgrounds and cultures. It is indisputable that physicians with better knowledge of such backgrounds are able to better relieve infertility stress in affected couples, by addressing both their obvious and hidden concerns.

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