Adaptive coping strategies in male infertility, paramedical counselling as a way of support

Angelika Szatmári, Kornélia Helembai, János Zádori, Ilona, Éva Dudás, Zsuzsanna Fejes, Gergely Drótos & Beatrix Rafael

To cite this article: Angelika Szatmári, Kornélia Helembai, János Zádori, Ilona, Éva Dudás, Zsuzsanna Fejes, Gergely Drótos & Beatrix Rafael (2020): Adaptive coping strategies in male infertility, paramedical counselling as a way of support, Journal of Reproductive and Infant Psychology, DOI: 10.1080/02646838.2020.1724918

To link to this article: https://doi.org/10.1080/02646838.2020.1724918
Adaptive coping strategies in male infertility, paramedical counselling as a way of support

Angelika Szatmári, Kornélia Helembai, János Zádori, Ilona, Éva Dudás, Zsuzsanna Fejes, Gergely Drótos and Beatrix Rafael

ABSTRACT

Aims: In the last decades, the number of infertile males increased worldwide which gained more focus. The extent to which a person or a couple is able to cope adaptively with the problem of infertility depends on the combined effect of several variables. Our aim was to apply counselling among males suffering from infertility problems. During the therapy – besides providing information – we aim to elaborate the effects of the treatment and experiences, to process information, to develop adaptive coping strategies against stress and to indirectly or directly change health behaviours influencing reproduction.

Methods: Only patients with male factor infertility were involved. They were divided into an observed group (n = 57) and a control (n = 51) group after a thorough physical examination and assessment of their reactions to, and awareness of, the disease.

Results: The group that received the interventions had an intense awareness of the diagnosis and aims and nature of the indicated treatment. They employed purposeful problem-solving coping strategies, reported being satisfied with the infertility treatment.

Conclusions: The counselling of clients with infertility problems a more favourable mental well-being can be established by the active participation of professional helpers. Patients might receive effective, targeted and problem-specific help.

Abbreviations: ART: Assisted Reproductive Technology

Introduction

Reproduction is essential, both individual and social difficulties in this area place an immense psychological burden on the infertile couple (Chiaffarino et al., 2011;
Kahyaoglu & Balkanli, 2015). Almost 15–20% of couples in developed countries face the problem of infertility (A Policy Audit on Fertility, 2017). According to European data, the number of couples receiving infertility treatment is increasing. Studies have shown that in 50% of infertile couples, only the male partner or both partners are affected (Jungwirth et al., 2017).

The branch of andrology has described several aetiological factors of male infertility. Possible causes include morphological or positional alterations of the reproductive organs. After excluding these factors, an alteration in the parameters of the sperms (concentration, motility, and morphology) often persists although its cause is not entirely clear yet. Consequently, the role of endocrinological disruptors due to pollution and relative oxygen species is assumed (Schill, Comhaire, & Hargreave, 2006).

Being able to reproduce is an important part of one’s identity. Consequently, patients experience infertility as a major stressful life event. Being unwillingly childless increases the occurrence of anxiety and depression and concurrently, decreases the quality of life (Cserepes, Kőrösi, & Bugan, 2014; El Kissi et al., 2013). Males experience significant distress when they experience infertility. Furthermore, anxiety, a decrease in self-esteem and stigmatisation may be more prominent in male factor infertility than in idiopathic or female factor infertility (Furman, Parra, Fuentes, & Devoto, 2010; Petok, 2015; Throsby & Gill, 2004).

**Reactions to male infertility**

Literature differentiates between crises caused by unsuccessful reproduction and other stressful life events. The former is referred to as infertility distress. Facing the diagnosis, medical treatments and other difficulties associated with a life without children may be the couple’s most stressful life event. The degree of infertility distress may vary individually and in relation to the time elapsed since the diagnosis. During the first year of treatment, patients tend to report high levels of stress, which is normalised during the second year and significantly increased from the third year (Martins, Costa, Peterson, Costa, & Schmidt, 2014; Pook & Krause, 2005).

The most studied question in relation to male infertility is how stress and emotional tension affect the chances of reproduction. An increase in the desire to have a child may cause negative mental, physical and social effects. The primary questions when studying the relationship between stress and infertility are whether stress causes infertility, whether it contributes to its occurrence, whether the fact and knowledge of infertility cause stress and whether the infertility treatment acts as a stress factor. Increasing evidence has supported the notion that stress is an important risk factor in the development of infertility. Infertility increases distress, which by endocrinological pathways by increasing serum prolactin levels further decreases the chances of conception (Greil, Slauosn-Blevins, & McQuillan, 2010; Martins et al., 2014). Accepting examinations and infertility treatment may also place a significant burden on both the individual and couple. During the examinations and treatment for assisted fertility, their mental burden is likely to increase and 14% of couples separate (Martins et al., 2014). Emphasis has been placed on professional psychological assistance during the treatment of infertile couples (Boivin & Gamerio, 2015; Hakim, Newton, MacLean-Brine, & Feyles, 2012).
Coping strategies

It is imperative to apply adaptive coping strategies in this markedly stressful situation in order to try to alleviate the negative effects of stress. How the individual or the couple copes adaptively with the problem of infertility and/or childlessness is dependent on various factors. These factors include the cause and nature of the infertility, the available individual’s mental resources, the extent of available social support and the applied coping strategies. Knowledge about the psychology of coping leads to more possibilities to develop a person-centred and effective supporting programme. The method of help should be adjusted to the nature of the problem and the individual’s needs and expectations (Furman et al., 2010; Peterson et al., 2012; Petok, 2015; Van den Broeck, Emery, Wischmann, & Thorn, 2010).

Infertility is a chronic state of stress, which causes difficulties in adaptation (Peterson, Newton, Rosen, & Skaggs, 2006). Lazarus and Folkman (1984) cognitive coping model proposes that successful coping in a stressful state depends on how the person assesses their own situation and whether they are able to choose appropriate coping strategies. Two main strategies can be identified in Lazarus and Folkman (1984) classic model: Problem-focused and emotion-focused coping. Following this model, several studies confirmed that in infertility, emotion-focused coping tends to be adaptive because it is a low-control stressor for the person (Faramarzi et al., 2013; Peterson et al., 2006). Terry and Hynes (1998) emphasised that problem-solving may also be effective. Planful problem-solving, that is, a problem-focused strategy and distancing were found to be the most effective in males (Faramarzi et al., 2013; Peterson et al., 2006). Planful problem-solving may be adaptive because modelling a strategy to solve the problem and planning the steps to reach the purpose increases feelings of control and competence and further helps the couple in their joint effort to solve the problem (Peterson et al., 2006).

The findings noted reveal that exchanging maladaptive coping strategies for adaptive strategies should be an important aim of infertility treatments.

Infertility counselling: providing help during assisted reproductive treatment

Menning (1980) was the first to draw attention to the importance of providing psycho-social support during infertility treatment. Infertility counselling is a multidimensional task with three pillars: Support, providing information about the treatment and evaluation, which entails screening psychological vulnerability (Covington & Burns, 2006; Petok, 2015; Stammer, 2002).

The main aim of assistance is emotional support. Several studies have revealed that infertility treatment may be likened to an emotional roller coaster (Verhaak, Lintsen, Evers, & Braat, 2010; Wischmann, 2013). Consequently, it is imperative to provide possibilities for emotional ventilation and adjusting appropriate support during the phases of treatment. Mobilising coping strategies are also important in many instances, counselling is the time to address the losses that the patients have experienced during unsuccessful treatments.

To involve a patient in decision-making enhances personal control and feelings of self-efficacy and thus, frustration during the treatment may be decreased. Furthermore, it is crucial that professionals providing help emphasise adaptive health behaviours (O’Donnell, 2007; Randi, Fürbringer, Schmidt, & Pinborg, 2016; Van den Broeck et al., 2010).
During the evaluation, while screening psychological vulnerability, the professional providing help should monitor the patient’s level of distress, emotional state, level of anxiety, depression and stress (Boivin, Takefman, & Braverman, 2011; Domar, 2015; Van den Broeck et al., 2010; Verhaak et al., 2010). Several infertility distress studies emphasise (Wischmann et al, 2013) that a smaller subgroup can clearly be identified among those who suffer from infertility, these persons are significantly more vulnerable psychologically, especially they are more prone to depression and anxiety. This subgroup is the most endangered when assessing mental coping. When developing preventive psychological help the identification of this subgroup should be paid special attention in order to yield appropriate psychological treatment to those who are more sensitive to stress (Darwiche et al., 2002; Emery, Béran, Darwiche, Oppizzi, & Germond, 2003).

Besides a general person-centred approach, more focused psychosocial support is also required during the entire period of treatment. Infertility counselling could be conducted by professional helpers such as mental hygienists and nurses who are familiar with psychology, infertility and assisted reproductive treatment. The infertility professional should use the parameters described previously for individuals or couples and should be available during the entire treatment (Covington & Burns, 2006; Domar, 2015; Furman et al., 2010; Stevenson, Hershberger, & Bergh, 2016).

Several lifestyle factors might underlie infertility issues. Body mass problems, smoking and drinking excessive amounts of alcohol decrease fertility (Du Plessis, Cabler, McAlister, Sabanegh, & Agarwal, 2010; Kort et al., 2006; Waylen, Metwally, & Jones, 2009). Furthermore, an unhealthy diet, lack of physical activity and environmental harmful factors are associated with the unfavourable functioning of the reproductive organs. The outlined empirical findings suggest that infertility treatments can be augmented with lifestyle programmes that can enhance fertility effectively and in which patients can participate during medical treatment (Wise, Cramer, & Hornstein, 2011).

Thus, it is important to develop complex programmes that respect the integrity of the body and the soul, that consider infertility problems to be a relationship issue and that suit the requirements of the patients perfectly (Brucker & McKenry, 2004; Domar, 2015; Randi et al., 2016; Stevenson et al., 2016; Szatmári, Fejes, & Király, 2018; Van den Broeck et al., 2010).

**Material and methods**

During the first phase of the study, between 2017 and 2018, we collected information about the psychosocial characteristics of Hungarian males suffering from infertility or decreased reproductive capacity by employing general psychological questionnaires. The test battery was completed in three locations by conducting face-to-face interviews: An infertility centre, an andrology clinic and an andrology out-patient unit. Criteria to participate in the study included male factor infertility and participation in infertility treatment in the same clinic.

The aim of this study was to assess the efficacy of the method of paramedical counselling provided by professional helpers such as nurses, mental hygienists, doctors during the treatment period for male factor infertility by employing the used patient conducting model developed during the last decade (Helembai, 2019). Furthermore, the impact of the counselling on the development of infertile males’ adaptive health
behaviours that influence reproduction by broadening the knowledge of the patients during the treatment process and promoting positive change based on satisfaction rates was assessed.

**Study population**

The participants included 108 individuals who were suffering from infertility or decreased reproductive capacity. Their ages ranged between 26 and 49 years (average = 35.18, standard deviation = 4.92). The involved patients were from the Department of Obstetrics and Gynaecology, the Department of Urology and the Infertility Centre of Kálli Institute. Ethics approval was obtained from the medical directors of the infertility and andrology clinics. All the participants volunteered, they received written information about the study and they signed a declaration of consent prior to completing the questionnaires (Human Investigation Review Board, Albert Szent-Györgyi Clinical Centre 82/2017-SZTE).

I divided the patients into two groups: The observed group that received infertility paramedical counselling (n = 57) and the control group (n = 51). The inclusion criterion for both groups was male factor infertility or decreased reproductive capacity. During the evaluation, we assessed vulnerability in both groups. The results of psychological questionnaires, the level of depression, anxiety and perceived stress, indirectly refer to vulnerability.

According to clinical diagnoses, there were three subgroups: (1) azoospermia (n = 24); (2) OAT syndrome (oligoasthenoteratozoospermia) (n = 51), oligoasthenozoospermia (n = 4) and oligozoospermia (n = 19); and (3) unexplained infertility (of unknown origin) (n = 10).

Relevant demographic data of the control (n = 51) and observed (n = 57) groups that were related to the study hypothesis were compared; frequencies and averages are presented in **Table 1**. There was no difference in the demographic characteristics of the two groups despite the significant difference between the two groups in relation to the time elapsed from the diagnosis of infertility; the observed group was diagnosed earlier (t = 3.1; DF = 82,457; p = 0.003; mean difference = 11.33; CI- = 3.82; CI+ = 18.84; Cohen’s d = 0.59). There was also a significant difference in the period of family planning. On average, patients in the observed group had been trying to start a family for longer (t = 2.48; DF = 90.89; p = 0.02; mean difference = 9.73; CI- = 1.74; CI+ = 17.72; Cohen’s d = 0.47).

**Materials**

The questionnaires were employed to assess the distress accompanying infertility as well as the coping and communication strategies the patients suffering from infertility used. In accordance with the literature, we used general test batteries to assess distress, which measured the occurrence of depressive symptoms and level of anxiety. These questionnaires had all been widely employed in studies examining groups of patients suffering from other diseases, healthy populations and infertile patients. The short version of the Beck Depression Inventory (Beck & Beck, 1972; Rozsa, Szadoczky, & Füredi, 2001) was used to measure depression. The State-Trait Anxiety Inventory (STAI) originally developed by Spielberger (1970) was employed to measure trait anxiety. Other measures employed included the Rosenberg Self-Esteem Scale (Sallay, Martos, Földvári, Szabó, & Ittzés, 2014) to measure self-esteem; Caldwell's
Social Support Questionnaire (Caldwell, Pearson, & Chin, 1987) to assess social support; the Perceived Stress Scale (Stauder & Konkoly-Thege, 2006) to measure perceived stress; the satisfaction with life subscale of the Rahe Stress and Coping Inventory (Rozsa et al., 2005) to identify coping strategies and the Conflict Resolution Questionnaire (Rozsa et al., 2008). The participants also answered short questions on health behaviours including smoking, alcohol intake, healthy diet, physical activity and environmental harmful factors.

Questionnaires to assess psychological vulnerability were completed in the first phase of treatment after being diagnosed with (1) or with a previously known and treated infertility (2), but prior to any operation, insemination or ART.

In the observed group, the validated questionnaires were completed at the start of medical interventions, in the first phase of counselling and after counselling at the end of the four months period. The control group only completed the validated questionnaires at the beginning and end of the medical treatment, they did not receive infertility counselling. After a thorough examination of the patients and after their reactions to, and awareness of the disease were assessed, the observed group during a four-month
period received counselling and support altogether five times at three weeks intervals. Patients suffering from infertility or decreased fertility were involved in both groups (observed and control). They were provided counselling after randomisation.

Sixty patients entered the observed group, 3 dropped-out after the start of the programme, because they also ceased reproductive therapy due to poor prognosis (due to age) or financial reasons. Two persons refused counselling due to lack of time.

Fifty-eight patients entered the control group, 7 dropped-out because of the pre-term cessation of reproductive therapy due to personal reasons like unpredictable treatment planning, long waiting list and poor prognosis (several unsuccessful previous treatments).

The final sample consisted of altogether 108 male patients receiving assisted reproductive treatment, randomised to observed group (n = 57) and control group (n = 51).

Infertility counselling there are three pillars: (1) emotional support, (2) providing information about the treatment (3) and evaluation which entails screening psychological vulnerability.

On the first occasion, an interview to evaluate their emotional condition, anxiety, self-esteem, stress, depression, satisfaction with life, social support and coping strategies was conducted. The patients’ expectations of the treatment were also assessed.

During the following intervention, the second pillar of the counselling, information about the treatment was provided; specifically, about the results of examinations and treatment alternatives. We encouraged the expression of emotions in relation to a potential operation, the identification of personal causes of distress, the mobilising and development of coping strategies and skills and the exploration of the personal meaning of the infertility problem. In addition, emotional support was provided. After the psychoeducational compound of the consultation, we discussed healthy behaviours, lifestyle and stress issues. Counselling also functions as psychoeducation as it deals with the life event of being infertile and the psychological difficulties of the examinations. Special support may also be needed in decision situations and to understand findings.

We adjusted the timing of the consultation to the exact state of the patients. In many instances, counselling is the time to address the losses that the patients have experienced during unsuccessful treatments. During the first phase, we provided them with the opportunity to ventilate freely about their infertility problem. Accordingly, professionals should be provided with the opportunity to learn different skills such as communication strategies.

The psychoeducational part increased and deepened the patients’ knowledge about decision-making. The importance of the positive aspects of extreme hardship was emphasised. Furthermore, monitoring and reflecting resources such as the cohesion of relationships and family support and increasing the patients’ activities and competence were stressed.

The applied method relies on cognitive behavioural therapy combining it with facilitative and supportive techniques, which support the mobilisation and concentration of inner resources, the acceptance of new knowledge and the development of new skills and habits. They also promote the elaboration of emotions and decision-making.

Facilitative techniques are e. g. paraphrasing, reflecting, summing up and clarifying emotions, confronting, questioning, providing information. Supportive techniques are e. g. the method of stopping thoughts, strategies supporting interpersonal efficacy, practicing assertiveness. Other techniques are strategies to change behaviour, gradual
recognition and alteration of emotions and behaviour, habituation of situations. The interventions were standardised based on pre-set programmes (Table 4). Consultations were conducted following the pre-set topics. Also in Tables 3 and 4 (Table 3 The components of infertility counselling, Table 4 Standardised programs of providing information and psychoeducation). The above-described program can be inserted into the applied medical treatment protocols.

The aims of the consultation were adapted to the mental state of each patient. This meant that we emphasised the ‘topic’ in which the actual patient showed the key problem, e.g. among those patients who showed more severe symptoms of anxiety, or elevated levels of stress, or decreased social support we emphasised these fields during counselling in order to facilitate them to use more adaptive coping mechanisms required in their specific situation.

We hypothesised that counselling as a method of the patient conducting process due to supporting the coping strategies of the observed group will become more problem-focused and there will be an improvement in the indicators of well-being.

Statistics

Data processing and evaluation were conducted by employing SPSS version 23. We performed descriptive statistics, a chi-squared test, Fisher’s exact test, two sample t-test, Welch’s t-test, repeated measures multivariate analysis of covariance and Spearman’s rank correlation to evaluate the demographic characteristics and data of the clinical scales.

In the repeated measures multivariate analysis of covariance, the observed group was the interpersonal independent grouping variable, the two times of the measurement were personal grouping variables and time elapsed from the diagnosis and with family planning were covariates. Thus, the differences and bias in these variables between the two groups were controlled. The scales of the WCQ and the results of the STAI, BDI, RSES and Holmes-Rahe tests were the dependent variables. Statistical significance was defined as p < 0.05. In accordance with the consensus, 95% confidence intervals are shown in the figures.

Results

To test the hypothesis of the study, we first examined the clinical characteristics of the control and observed groups at the start so as to reduce bias due to potential differences (Table 2). According to statistics in WCQ’s problem analysis (t = 0.47; DF = 106; p = 0.64; mean difference = −0.06; CI− = −0.33; CI+ = 0.2; Cohen’s d = 0.09), emotionally motivated action (t = 0.25; DF = 106; p = 0.81; mean difference = −0.02; CI− = −0.2; CI+ = 0.15; Cohen’s d = 0.05), purposeful action (t = 0.18; DF = 106; p = 0.86; mean difference = 0.018; CI− = −0.19; CI+ = 0.23; Cohen’s d = 0.03), adaptation (t = −1.36; DF = 106; p = 0.18; mean difference = −0.17; CI− = −0.43; CI+ = 0.08; Cohen’s d = 0.26), asking for help (t = −0.64; DF = 106; p = 0.52; mean difference = −0.09; CI− = −0.36; CI+ = 0.19; Cohen’s d = 0.12), seeking emotional balance (t = −0.89; DF = 106; p = 0.38; mean difference = 0.21; CI− = −0.26; CI+ = 0.68; Cohen’s d = 0.18), scales in the STAI result (t = −0.05; DF = 106; p = 0.96; mean difference = −0.03; CI− = −1.44; CI+ = 1.37; Cohen’s d = 0.01), in the BDI result (t = −0.07; DF = 106; 0.94; mean difference = −0.06; CI− = −1.57; CI+ = 1.46; Cohen’s d = 0.01), in the RSES result (t = 0.14; DF = 106; p = 0.89; mean difference = 0.01; CI− = −0.16; CI+ = 0.18; Cohen’s
<table>
<thead>
<tr>
<th></th>
<th>WCQ Problem analysis at start</th>
<th>WCQ Problem analysis at end</th>
<th>WCQ Emotionally motivated action at start</th>
<th>WCQ Emotionally motivated action at end</th>
<th>WCQ Purposeful action at start</th>
<th>WCQ Purposeful action at end</th>
<th>WCQ Adaptation at start</th>
<th>WCQ Adaptation at end</th>
<th>WCQ Asking for help at start</th>
<th>WCQ Asking for help at end</th>
<th>WCQ Emotional balance at start</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.92</td>
<td>0.02</td>
<td>0.6</td>
<td>0.52</td>
<td>1.3</td>
<td>1.63</td>
<td>1.27</td>
<td>1.22</td>
<td>1.18</td>
<td>1.32</td>
<td>1.29</td>
</tr>
<tr>
<td>St. dev.</td>
<td>±0.62</td>
<td>±0.56</td>
<td>±0.48</td>
<td>±0.58</td>
<td>±0.61</td>
<td>±0.68</td>
<td>±0.64</td>
<td>±0.76</td>
<td>±0.66</td>
<td>±1.59</td>
<td>±0.98</td>
</tr>
<tr>
<td><strong>Control group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.98</td>
<td>1.97</td>
<td>0.62</td>
<td>0.51</td>
<td>1.28</td>
<td>0.102</td>
<td>1.45</td>
<td>1.43</td>
<td>1.26</td>
<td>1.39</td>
<td>0.08</td>
</tr>
<tr>
<td>St. dev.</td>
<td>±0.76</td>
<td>±0.68</td>
<td>±0.43</td>
<td>±0.36</td>
<td>±0.5</td>
<td>±0.42</td>
<td>±0.64</td>
<td>±0.67</td>
<td>±0.73</td>
<td>±0.61</td>
<td></td>
</tr>
<tr>
<td><strong>All</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.95</td>
<td>1.99</td>
<td>0.61</td>
<td>0.52</td>
<td>1.29</td>
<td>1.34</td>
<td>1.35</td>
<td>1.32</td>
<td>1.22</td>
<td>1.36</td>
<td>1.19</td>
</tr>
<tr>
<td>St. dev.</td>
<td>±0.69</td>
<td>±0.62</td>
<td>±0.45</td>
<td>±0.38</td>
<td>±0.54</td>
<td>±0.61</td>
<td>±0.67</td>
<td>±0.65</td>
<td>±0.72</td>
<td>±0.69</td>
<td>±1.23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>WCQ Emotional balance at start</th>
<th>WCQ Withdrawal at start</th>
<th>WCQ Withdrawal at end</th>
<th>STAI at start</th>
<th>STAI at end</th>
<th>BDI at start</th>
<th>BDI at end</th>
<th>RSES at start</th>
<th>RSES at end</th>
<th>Holmes-Rahe at start</th>
<th>Holmes-Rahe at end</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.18</td>
<td>1.32</td>
<td>1.41</td>
<td>47.95</td>
<td>47.19</td>
<td>3.47</td>
<td>3.28</td>
<td>3.39</td>
<td>3.47</td>
<td>11.25</td>
<td>11.3</td>
</tr>
<tr>
<td>St. dev.</td>
<td>±0.8</td>
<td>±0.83</td>
<td>±0.84</td>
<td>±3.78</td>
<td>±3.41</td>
<td>±4.17</td>
<td>±3.18</td>
<td>±0.49</td>
<td>±0.45</td>
<td>±2.49</td>
<td>±2.82</td>
</tr>
<tr>
<td><strong>Control group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.45</td>
<td>1.7</td>
<td>1.69</td>
<td>47.98</td>
<td>47.84</td>
<td>3.53</td>
<td>2.9</td>
<td>3.38</td>
<td>3.41</td>
<td>11.22</td>
<td>10.67</td>
</tr>
<tr>
<td>St. dev.</td>
<td>±0.72</td>
<td>±0.9</td>
<td>±0.9</td>
<td>±3.54</td>
<td>±3.25</td>
<td>±3.72</td>
<td>±3.12</td>
<td>±0.4</td>
<td>±0.39</td>
<td>±2.68</td>
<td>±3.1</td>
</tr>
<tr>
<td><strong>All</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.31</td>
<td>1.5</td>
<td>1.54</td>
<td>47.96</td>
<td>47.5</td>
<td>3.5</td>
<td>2.57</td>
<td>3.39</td>
<td>3.44</td>
<td>11.23</td>
<td>11</td>
</tr>
<tr>
<td>St. dev.</td>
<td>±0.77</td>
<td>±0.88</td>
<td>±0.88</td>
<td>±3.65</td>
<td>±3.33</td>
<td>±3.94</td>
<td>±3.15</td>
<td>±0.45</td>
<td>±0.43</td>
<td>±2.57</td>
<td>±2.95</td>
</tr>
</tbody>
</table>
and in the results of Holmes-Rahe test (t = 0.06; DF = 106; p = 0.95; mean difference = 0.03; CI− = −0.96; CI+ = 1.02; Cohen’s d = 0.01), there was no difference at the start. The withdrawal scale of the WCQ showed a difference at the start (t = −2.26; DF = 106; p = 0.03; mean difference = −0.37; CI− = −0.71; CI+ = −0.05; Cohen’s d = 0.44).

According to the evaluation, the time elapsed during the examination (F = 3.2; DF = 12–93; p = 0.001; partial eta squared = 0.29) had a significant main effect. Furthermore, the interaction between the elapsed time and the intervention was also significant (F = 7.53; DF = 12–93; p < 0.001; partial eta squared = 0.49).

When comparing the data of the tests at the two occasions of measurement, a significant change in the BDI results (F = 10.44; DF = 1–104; p = 0.002; partial eta squared = 0.09; Figure 1), in the STAI results (F = 8.82; DF = 1–104; p = 0.004; partial eta squared = 0.08; Figure 2), in the emotionally motivated action scale of WCQ (F = 7.89; DF = 1–104; p = 0.006; partial eta squared = 0.07; Figure 3) was evident; all three decreased. The interaction capturing the effect of the intervention was significant in the withdrawal (F = 3.96; DF = 1–104; p = 0.049; partial eta squared = 0.04; Figure 4), purposeful action (F = 58.75; DF = 1–104; p < 0.001; partial eta squared = 0.36; Figure 5) and seeking emotional balance (F = 4.68; DF = 1–104; p = 0.033;
Figure 1. BDI results

Figure 2. STAI results

partial eta squared = 0.043; Figure 6) scales of WCQ and in STAI results (F = 4.33; DF = 1–104; p = 0.04; partial eta squared = 0.04; Figure 7) (Table 2). The withdrawal and purposeful action results of WCQ increased in the observed group while they decreased in the control group.
Figure 3. The emotionally motivated action scale of WCQ

Figure 4. The withdrawal scale of WCQ
Seeking emotional balance and trait anxiety of the STAI results decreased in the observed group and trait anxiety of the STAI results did not change with time in the control group.

**Discussion**

Our study highlighted how the group that received interventions had an intense awareness of the diagnosis and the aims and nature of the indicated treatment. This group used purposeful problem-solving coping strategies during the infertility treatment. As a result of the interventions during the fourth and fifth meeting the persons in the observed group used adaptive coping strategies, e.g. problem analysis and purposeful action more frequently. While infertility treatments can be exhaustive, the person’s sense of security was increased by the transparency of examinations, by the predictability of the treatment and by the thorough knowledge of the clinic and its staff. According to the cognitive model long-term adaptation is facilitated by problem analysis, since the person makes efforts in stressful situations with low control. Those persons who re-evaluate childlessness experience a significant decrease in stress levels when coping with infertility (Gameiro & Boivin, 2015; Terry & Hynes, 1998; Van den Broeck et al., 2010). The patients reported they were satisfied with the intervention. Their levels of depression and anxiety.

![Figure 5. The purposeful action scale of WCQ](chart.png)
decreased from those observed at the start of the interventions and differed from the control group’s results.

Male infertility affects an increasing number of males in the reproductive stage of their lives. This challenges professionals working with reproductive technologies and paramedical helpers. Males’ coping strategies may differ from those of females. Their attitude towards diseases and frequency of seeking medical assistance also differs in comparison to females (Nikoloudakis et al., 2018). Previous studies have revealed that infertility as a mental problem affects both members of the couple. Although several studies have examined the anxiety and coping associated with female infertility, studies of male infertility are uncommon and usually only assess their knowledge (Cserepes & Bugan, 2015; Lakatos, Szigeti, Ujma, Sexty, & Balog, 2017).

Infertility clinics should provide their clients with more apparent and traceable treatment in order to enable them to apply more coping strategies during difficult times and to support both partners. Studies were conducted in 2010 to explore how males appreciate a supportive group during assisted reproductive treatment. The participants showed a positive reaction towards the counselling and believed they could talk about their problem in an accepting environment. It is noteworthy that those males who sought counselling suffered primarily from male factor infertility. This guided us in choosing the target group. We were curious about the patients’ conditions after diagnosis and how supportive therapy could help them. Decreasing depression and anxiety is not only

Figure 6. The seeking emotional balance scale of WCQ
important for their relationship, but clinical findings also verified that there is an inverse relationship between psychological stress and the parameters of the sperms even though its effect is mainly measurable in the group of patients with decreased fertility (Nargund, 2015; Wdowiak, Bien, Iwanowicz-Palus, Makara-Studzinska, & Bojar, 2017) and it can also lead to leaving the treatment. Therefore, a non-pharmaceutical decrease in anxiety and stress and providing information and coping strategies may be crucial.

Because this study was limited by the number of participants, we did not evaluate the characteristics of coping strategies in the different subgroups so as to apply personalised therapies according to their diagnosis. Consequently, this remains a goal for further studies.

In summary, with the paramedical counselling of clients with infertility problems a more favourable mental well-being can be established with the active participation of professional helpers. Patients may receive effective, targeted and problem-specific help. The main task of patient-focused counselling is to assure that patients understand the consequences of their choice of treatment, provide sufficient emotional support and cope with the consequences of experiencing infertility in a healthy way.
Acknowledgments

This work was supported by University of Szeged and the project has been supported by the European Union, co-financed by the European Social Fund. EFOP-3.6.1-16-2016-00008.

Disclosure Statement

No potential conflict of interest was reported by the authors.

ORCID

Angelika Szatmári  http://orcid.org/0000-0002-9418-9806
Gergely Drótos  http://orcid.org/0000-0002-4520-2533

References


