The impact of partner coping in couples experiencing infertility

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BACKGROUND: Most studies examining coping with infertility use the individual as the unit of analysis. Although valuable, these studies fail to show the impact that partner coping has on individual distress. Since infertility is a shared stressor, examining the impact of partner coping is particularly relevant. METHODS: Data were based on a questionnaire in a consecutive sample of 1169 women and 1081 Danish men prior to beginning assisted reproduction treatment. Multilevel modeling using the Actor Partner Interdependence Model and follow-up analysis of variance were used to examine the couple as the unit of analysis. RESULTS: A partner’s use of active-avoidance coping was related to the increased personal, marital and social distress for men and women. A woman’s use of active-confronting coping was related to increased male marital distress. And a partner’s use of meaning-based coping was associated with decreased marital distress in men and increased social distress in women. CONCLUSIONS: Although understudied, partner coping patterns play a key role in a partner’s ability to cope with the infertility experience. Physicians and mental health providers can help couples to understand the coping strategies that lead to increased and decreased partner distress.

Keywords: infertility; coping; couples; stress; APIM

Introduction

When a couple is diagnosed with infertility, they commonly experience a variety of stressors. These stressors include, but are not limited to, disruptions in a couple’s personal life and relationships with others, changes in the quality of a couple’s emotional and sexual relationship, and alterations in a couple’s relationships with co-workers, family and friends. Further, infertility challenges the infertile couples’ life expectations (Greil, 1997; Newton et al., 1999; Schmidt, 2006; Peterson et al., 2007). As infertility is an unplanned and unexpected stressor, couples typically lack the knowledge and skill set to adequately manage infertility stress. As a result, couples engage in a variety of coping strategies in an attempt to regain control over their lives and rebalance the disruptions they have experienced in their personal, marital and social relationships.

Coping is formally defined as cognitive or behavioral efforts used to manage and control stress in situations, where a stressor exceeds a couple’s perceived or actual resources (Lazarus and Folkman, 1984). Infertility is a stressor that often taxes a couple’s personal and relational resources such that coping strategies are a natural outgrowth of the experience. As men and women find themselves in an unfamiliar situation, they find many ways to cope with infertility. In the current study, four primary types of coping strategies were examined: active-avoidance strategies (e.g. avoiding pregnant women or children), active-confronting strategies (e.g. showing feelings, ask others for advice), passive-avoidance strategies (e.g. hoping for a miracle) and meaning-based strategies (e.g. growing as a person in a good way; finding other goals in life) (for a detailed list of all questions for each coping strategy see Appendix and Schmidt et al., 2005b). Previous studies have found that avoidance coping strategies, which are primarily aimed at removing the person or couple from emotionally painful situations, are consistently linked with increases in infertility stress and psychological distress (Terry and Hynes, 1998; Schmidt et al., 2005a; Peterson et al., 2006a). Coping strategies such as active-confronting coping (e.g. attempts to modify infertility stress by taking action towards problem resolution) and meaning-based coping (e.g. redefining the meaning and implications of infertility) have been linked to short and long-term adaptation to the stress of infertility (Verhaak and Hammer Burns, 2006).

Most studies examining the impact of coping with infertility use the individual as the unit of analysis (Greil, 1997; Jordan and Revenson, 1999). Such studies are valuable because men and women cope with infertility in different ways, and highlighting the preferred coping processes of men and women benefits both patients and physicians. Jordan and Revenson's (1999) meta-analysis of gender differences in coping with
infertility found that while men and women have significant differences in coping strategies, they also possess more similarity in coping than was expected. A more recent study using relative coping scores found that men used proportionally more distancing, self-controlling coping and planful problem solving—a finding that was not present when raw coping scores were used (Peterson et al., 2006a).

Although studies examining individual coping patterns and gender differences expand the research base and significantly contribute to our knowledge about coping with infertility stress, they are limited in the fact that they examine only one partner’s response to the stress of infertility. Because of this, these studies fail to show the impact that one partner’s coping has on his or her partner’s levels of personal, marital, or social distress. Following their meta-analysis, Jordan and Revenson (1999) called for a re-conceptualization of coping with infertility as a couple-level stressor because both men and women are affected by this event.

In response to calls to increase the number of studies using the couple as the unit of analysis, there have been a handful of studies examining the impact of partner coping in couples experiencing infertility (Stanton et al., 1992; Levin et al., 1997; Mikulincer et al., 1998; Berghuis and Stanton, 2002; Peterson et al., 2003; Peterson et al., 2006b). These studies consistently show that infertility impacts both members of the couple and that one partner’s coping impacts his or her partner’s individual response to infertility stress. Peterson et al. (2006b) found that when a man had a high use of distancing and his partner did not, the woman’s infertility stress and depression increased. They also found that a woman’s high use of emotional self-controlling when her partner used low amounts increased the man’s infertility stress and contributed to his lower levels of marital adjustment—a finding also supported by Stanton et al. (1992). Levin et al. (1997) found that men were more distressed in couples where both partners used high amounts of emotion-oriented coping, whereas Berghuis and Stanton (2002) showed that women who were initially low on emotional-approach coping prior to a failed insemination attempt received a benefit from their partner’s emotion-approach coping.

Research outside the infertility literature is also recognizing the importance of partner coping effects when examining couples efforts to cope with life events. This research examines the interactions between partners to assess if an individual’s stress levels can be accounted for by a partner’s coping strategies. A statistical methodology called the Actor Partner Interdependence Model (APIM; Kenny et al., 2006) allows for the simultaneous estimation of both individual effects, referred to as actor effects, as well as the effects of another closely associated person, referred to as partner effects. Such analyses use the couple, not the individual, as the unit of analysis. A body of research is accumulating, that has used the APIM to examine the impact of partner coping (Berg et al., 2001; Butterfield and Lewis, 2002; Butler et al., 2003; Rayens and Ssvavardsdottir, 2003; Cook and Kenny, 2005; Cook and Snyder, 2005; Rogers et al., 2005). The value of the APIM is that it provides a rich and complete picture of phenomena that includes both individual and partner effects when coping with stress.

The current study uses the APIM to examine the actor and partner effects of couples undergoing infertility treatments. Because of the shared nature of the infertility experience, using the APIM is particularly appropriate. Using the APIM for couples undergoing infertility treatments will help elucidate differences in individual and partner coping and clarify their respective impact on individual and partner distress. To the authors’ knowledge, this is the first study in the infertility literature to use the APIM to examine the impact of partner coping on infertility stress.

Prior to conducting the research, we asked the following research questions: (i) Do the coping patterns of one member of a couple have an impact on the personal, social and marital distress of his or her partner? (ii) If a partner effect is present, does the partner’s use of coping increase or decrease his or her partner’s personal, marital and social distress?

Materials and Methods

Setting

Denmark provides a tax-financed, comprehensive health-care system with equal, free and easy access to high-quality assisted reproductive technology. In 2002, 6.2% of the national birth cohort were children conceived after some kind of assisted reproduction (Nyboe Andersen and Erb, 2006). Data in this longitudinal cohort study were collected consecutively from Danish-speaking infertile couples beginning a new period of treatment at four public fertility clinics and one private clinic. The study is a part of an ongoing cohort study, The Infertility Cohort, a part of The Copenhagen Psychosocial Infertility (COMPI) Research Program (Schmidt, 2006).

Procedure

All new couples entering one of the five fertility clinics for the first time received a sealed envelope immediately before their first treatment attempt. The envelope contained information about the study and a baseline questionnaire, a form for declaration of non-participation in the study, and a stamped, pre-addressed return envelope for each spouse. The questionnaires were returned to the last author (LS) who was not employed at any of the fertility clinics. The non-responders received up to two written reminders. In total, 2812 fertility patients (1406 couples) received a baseline questionnaire for each partner and 80.0% (n = 2250) participated (women: 83.1%, n = 1169); men: 76.9%, n = 1081). Non-participants were significantly older, and female non-participants were more likely to have tubal occlusion. Among male non-participants more were about to start ICSI treatment (for a detailed non-participants analyses see Schmidt, 2006).

Measures

The COMPI fertility problem stress scales

Fertility related stress was measured using 14 items concerned with the strains related to infertility produced in the personal, social and marital domain, as previous research has shown that infertility taps into these different arenas (Schmidt, 1996; Greil, 1997; Tjørnhøj-Thomsen, 1999, 2005). Seven of these items were taken from The Fertility Problem Stress Inventory (Abbey et al., 1991) as this instrument covers all three domains. The remaining seven items were developed from The Psychosocial Infertility Interview Study (Schmidt, 1996). The items were developed in relation to the three domains. Afterwards the items were factor analysed to produce a set
of parsimonious factors, and strain in relation to the three different domains was confirmed.

(i) The Marital stress subscale (four items) assessed the extent to which infertility had produced strain on the marital and sexual relationships (e.g. "infertility has caused thoughts about divorce").

(ii) The Social stress subscale (four items) assessed the stress infertility had produced on social relationships with family, friends and workmates.

(iii) The Personal stress subscale (six items) tapped into the stress infertility had produced on the person’s life and on mental and physical health. The response key for the subscales personal stress, social stress and two items from marital stress was a four-point scale from (1) none at all to (4) a great deal. The response key for the remaining two items from marital stress was a five-point Likert response key from (1) strongly disagree to (5) strongly agree. Items from the different subscales were summed to produce total scores. Higher scores indicated more marital, social and personal stress. See Table I for means and standard deviations (SDs).

The COMPI coping strategy scales

As recommended by Folkman and Lazarus (1988) and Costa et al. (1996), we developed a coping questionnaire specifically aimed at measuring coping strategies in relation to a specific stressor: infertility. This 29-item questionnaire was developed from three sources: (i) items were adapted from the 66-item Ways of Coping Questionnaire (WOCQ), a process-oriented measure of coping derived from Lazarus’ and Folkman’s transactional model of stress (Lazarus and Folkman, 1984; Folkman and Lazarus, 1988); (ii) Folkman’s (1997) later revision of the coping model with the inclusion of the new concept, meaning-based coping; and (iii) items developed from a qualitative interview study (Schmidt, 1996). Items for the coping questionnaire were selected from WOCQ only if this specific way of coping was clearly revealed in the qualitative interview transcripts (Schmidt, 1996). In total, 18 items were selected from WOCQ; and seven of these were re-formulated to focus on the specific stressor infertility. Further, we developed 11 items based on the results from the interview study. These 29 items covered a wide range of responses the participants may have engaged in when dealing with the fertility problem.

The items were categorized into four subscales based on their conceptual content: (i) active-avoidance strategies (e.g. avoiding pregnant women or children), (ii) active-confronting strategies (e.g. showing feelings, ask others for advice), (iii) passive-avoidance strategies (e.g. hoping for a miracle) and (iv) meaning-based coping (e.g. growing as a person in a good way; finding other goals in life) (Appendix A; Schmidt et al. 2005b). The response key was (1) not used, (2) used somewhat, (3) used quite a bit and (4) used a great deal. The subscales comprised items that were significantly inter-correlated. Ten items did not fit the scales, and we excluded them from the analyses. Only when the participants had answered at least half of the items in a subscale did we include their response for that subscale. A confirmatory factor analysis showed Goodness-of-fit-index (GFI) = 0.88 for the entire model. When subscales were removed from the model one at a time the GFI were >0.91.

Data analysis

Data were analysed with the couple as the unit of analysis. In order to conduct the analyses, the data were structured so that each line contained data for one individual, with a variable included (i.e. dyad) that defined the couple. Multilevel analyses were conducted. A multilevel analysis is multilevel in the sense that it involves more than one regression model calculated at different levels of a nested design. In the current set of analyses, level 1 was the individual level that was nested within level 2, the couple-level. Multilevel analyses estimate the model independently at each of these levels. As multiple models are constructed at each level of the nested design, the analysis is able to use all available data without having to use listwise deletion across the entire analysis. Because of this, when data were available for only one partner, they were included in the individual level analyses but not in the couple-level analyses.

The design of the analysis is very similar to a multiple regression with one dependent variable and a set of predictors, or independent variables. The dependent variables in the current study were three different types of stress (i.e. personal, marital and social), and independent variables were the four coping strategies. Multilevel analyses were conducted for each combination of dependent and independent variables. This resulted in 12 analyses. Analyses provide unstandardized estimates of path coefficients for actor and partner effects. Analyses were also conducted to determine if there were significant differences in the strength of the actor and partner effects.

In order to help clarify the cases in which significant partner effects were found, median splits were used to create groupings of couples that were either congruent in their use of a coping strategy (i.e. both high or both low) or incongruent (i.e. men high/women low, or women high/men low). Median splits were calculated for each of the coping strategy variables separately for men and women. Couples were categorized by their coping strategies and assigned to one of the four groups. Analyses of variance (ANOVAs) were used to compare the mean levels of distress among men and women in each of the four couple groupings.

Results

Sample characteristics

In total, 1169 women and 1081 men who were members of consecutively referred couples undergoing fertility treatments completed the baseline questionnaires. The final sample contained an unequal number of men and women because when

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<th>Variable</th>
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<td></td>
<td>n</td>
<td>Mean (SD)</td>
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<td>Mean (SD)</td>
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<td>6.98 (2.27)</td>
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<td>16.06 (3.67)</td>
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<td>8.51 (2.13)</td>
<td>1138</td>
<td>9.18 (1.93)</td>
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<tr>
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<td>10.60 (2.81)</td>
<td>1135</td>
<td>11.35 (2.90)</td>
</tr>
<tr>
<td>Personal distress</td>
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<td>5.36 (3.79)</td>
<td>1123</td>
<td>8.25 (4.60)</td>
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<tr>
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<td>3.82 (3.14)</td>
<td>1120</td>
<td>3.95 (3.19)</td>
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<tr>
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<td>1050</td>
<td>1.45 (2.19)</td>
<td>1142</td>
<td>2.24 (2.55)</td>
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</table>

***P < 0.001; **P < 0.01; *P < 0.05.
data were available for both partners, they were included in the couple analysis, whereas when data were available for only one partner, they were included in the individual level analyses but not the couple-level analyses. Men were significantly older than women, with a mean age of 34.4 versus 32.0 years, respectively ($t = 17.6, P < 0.001$). Couples had been trying to have a child for an average of 4.1 years. Of the men, 41% attributed the infertility to themselves and 36% attributed the infertility to their partners. Women attributed 40% of the infertility to men, and 38% to themselves. It is interesting to note that men and women were not always in agreement about to whom the infertility should be attributed.

**Sex differences on stress and coping**

Women demonstrated both higher levels of usage of all coping mechanisms and higher amounts of all three types of stress when compared to men (see Table I). Correlations between mechanisms and higher amounts of all three types of stress. Women demonstrated both higher levels of usage of all coping strategies by personal, marital and social distress. The positive effects on personal, marital and social distress. The positive 

**Active-confronting coping**

For active-confronting, there were significant actor and partner effects for personal, marital and social distress. The positive partner effect for men and women indicates that as one partner’s use of active-avoidance was higher, there was a corresponding higher level of a partner’s personal, marital or social distress. For both men and women, actor and partner effects were positive, indicating a direct relationship between active-avoidance and actor and partner distress. There were no actor-by-sex or partner-by-sex interactions, indicating that the strength of the actor and partner effects did not differ as a function of sex.

**Active-confronting coping**

For active-confronting, there were significant positive actor effects for women on personal and marital distress, whereas men had a significant actor effect for social distress. The only significant partner effect was for men on marital distress. The strengths of the actor and partner effects for marital distress were non-significant. There were actor-by-sex interactions for personal and marital distress, meaning that the actor effects for women were stronger than the actor effects for men on personal and marital distress. There was also a significant partner-by-sex interaction for marital distress. In this case, the women’s use of active-confronting coping had a stronger impact on male marital distress than men’s use of this coping strategy on women’s marital distress.
Passive-avoidance coping
For passive-avoidance coping, there were significant positive actor effects for both men and women on personal distress. And for men, there were significant positive actor effects for marital and social distress. There were no significant partner effects and no significant interactions between actor or partner and sex.

Meaning-based coping
For meaning-based coping, there were significant actor effects for women that predicted decreases in personal, marital, and social distress. For men, there was a significant actor effect that showed increases in social distress. Negative partner effects on marital distress were found for men meaning that their partner’s increased use of meaning-based coping was related to lower levels of men’s marital distress. For women, their partner’s increased use of meaning-based coping was related to increased social distress. For social distress, there was no significant difference between the strength of the actor and the partner effects. There was a significant actor-by-sex interaction for social distress. This finding was due to the fact that an increased use of meaning-based coping was related to increases in men’s social distress, whereas females’ increased use of meaning-based coping was related to decreased social distress. There was also a significant partner-by-sex interaction for personal distress. This was due to the fact that while women’s use of meaning-based coping was related to decreased male personal distress, men’s use of meaning-based coping was related to a corresponding increase in women’s personal distress.

Comparing the relative strength of actor and partner effects
Table III provides a further clarification of the role of actor and partner effects. Results from this table indicate whether there was a difference in the strength of actor and partner effects on levels of distress. For personal distress, actor effects were stronger than partner effects for all four coping strategies. For marital distress, there were significantly stronger actor effects. For active- and passive-avoidance. For social distress, actor effects were significantly stronger than partner effects for all coping strategies except for meaning-based coping.

ANOVA median split analyses
To better understand the partner and partner-by-sex interaction differences found in the multilevel analyses, follow-up ANOVAs using the four groups of couples listed in the data analysis section were conducted. These analyses allowed us to examine the differences between groups of couples as indicated by changes in partner coping strategies. These differences also provide increased insight into the nature of the partner effect. Table IV presents the frequency of couples by each grouping and coping strategy, and Table V presents a summary of the data from the ANOVAs comparing men and women in the relevant groups by each coping strategy.

Active-avoidance coping
For active-avoidance coping, the follow-up analyses found significant differences between couples in which both partners used high amounts of coping compared to couples in which one partner used high amounts of coping and one partner used low amounts of coping. In these couples, a partner’s low use of active-avoidance was significantly related to decreases in his or her partner’s personal and marital distress for men and women and social distress in men. For women, the reverse was also true as their partner’s increased use of active-avoidance was related to their increased personal and social distress.

Active-confronting coping
For active-confronting coping, comparisons between the groups allow us to examine the impact that a change in women’s coping strategies (from low to high) had on men’s marital distress when men continued to use low amounts of coping. Men who were in couples in which both partners used low amounts of active-confronting had significantly lower levels of marital distress when compared to men in couples where they used low amounts of active-confronting coping and their partners used high amounts (see Table V).
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tional nature of these variables (O'Brien and DeLongis, 2006a). The study also showed that active-avoidance coping had significant partner effects on

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<th>Coping strategies by</th>
<th>Actor</th>
<th>Personal distress</th>
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<td>Men</td>
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<td>Active-avoidance</td>
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<td>Low congruent versus</td>
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***P < 0.001; **P < 0.01; *P < 0.05.

Overall, these results support the results of the multilevel model. When women’s use of active-confronting coping went down, this was related to a decrease in men’s marital distress, and when women’s use of active-confronting increased, there was a corresponding increase in men’s marital distress.

Meaning-based coping
When examining meaning-based coping, the opposite relationship was found: men in couples where both partners used low amounts of meaning-based coping had higher levels of marital distress but lower levels when their partner used more meaning-based coping. In these couples, a woman’s increased use of meaning-based coping was related to decreased marital distress in her partner. As with the above findings, the results support the multilevel model where a partner’s use of meaning-based coping was related to decreased marital distress in men.

Discussion
This study is the first of its kind to use the APIM to examine actor and partner effects with couples coping with infertility. Although the majority of studies examining stress and coping both inside and outside of the infertility literature examine individual coping, there are increasing calls to examine the relational nature of these variables (O’Brien and DeLongis, 1997; Peterson et al., 2006b). Because of the shared nature of the infertility experience, infertility presents a unique stressor that lends itself well to the examination of actor and partner coping and its impact on the couple.

Overall, women in the study reported significantly higher amounts of personal, marital and social distress as compared to men. This finding supports previous studies that found that women consistently report higher amounts of infertility stress than men (Newton et al., 1999). Women also reported significantly increased use of coping each of the four coping strategies as compared to men. This increase is likely linked with the higher levels of stress experienced by women: the more stressful the infertility is perceived, the more likely one is to engage in coping as a way to reduce or manage the stress. The increased stress and coping reports for women, when compared to men, are consistent with a wide body of literature regarding gender differences in infertility stress and coping (Greil, 1997; Peterson et al., 2006a).

Results of the multilevel model
When examining data obtained through the APIM, there were significant actor and partner effects for all 12 multilevel models. By using a two-intercept model, specific estimates for actor and partner effects were calculated. The two-intercept model was used to explain significant interactions among actors and partners using each of the four coping strategies. As the impact of partner coping is the focus of this paper, extended discussion of actor effects has been avoided. Instead, this section discusses the significance and implications of the partner effects across each of the four coping processes.

Active-avoidance
Couples who coped using active-avoidance strategies avoided being with pregnant women, kept their feelings regarding infertility stress to themselves, and turned to outside activities such as work to take their mind off of their infertility. This study found that active-avoidance coping was significantly associated with personal, social and marital distress for men and women—a finding consistent with the infertility literature base (Peterson et al., 2006a). The study also showed that active-avoidance coping had significant partner effects on

Overall, women—a finding consistent with the infertility literature base (Peterson et al., 2006a). The study also showed that active-avoidance coping had significant partner effects on
personal, marital and social distress for couples. In other words one partner’s use of active-avoidance coping was related to his or her partner’s increased distress in all three areas. The use of active-avoidance coping was the only coping strategy in the study that had partner effects related to all three dependent variables. It is not surprising that this type of coping was related to increased individual personal distress in men and women (e.g. active-avoidance coping. In contrast to other studies investig-ations among partners were particularly relevant to quality. In the current study, the reciprocal and systemic interactions, they often go unnoticed because of their intangible nature. Rather, the influence is experienced by the partner as a reaction even when one partner does not use that coping strategy. This analysis revealed that even when an individual uses high amounts of active-avoidance, a partner’s low use of active-avoidance was related to lower personal and marital distress for men and women who use high amounts of active-avoidance coping. Perhaps one reason for this is that a partner’s low use of active-avoidance coping acts as a buffer to increased personal and marital distress for his or her partner. If both partners actively avoided coping with the stressor, it may lead to isolation and a lack of support. Having a partner who does not practice avoidance, although incongruent with his or her partner’s coping, added a protective component to his or her partner’s individual distress levels. Although this finding has not been replicated specifically using an active-avoidance coping measure, receiving the benefit of a partner’s problem-focused coping and emotion-focused coping has been found in other studies (Berghuis and Stanton, 2002; Levin et al., 1997).

These findings provide a clear example of the systemic nature of coping with infertility and exemplify the importance of understanding partner coping patterns and their impact on couples. The partner effect demonstrates that couples coping with infertility are influenced by one another’s use of coping, even when one partner does not use that coping strategy. Rather, the influence is experienced by the partner as a reaction to the use of coping by his or her partner.

Although these reciprocal interactions occur in all relationships, they often go unnoticed because of their intangible quality. In the current study, the reciprocal and systemic interactions among partners were particularly relevant to active-avoidance coping. In contrast to other studies investigating coping with infertility (e.g. Abbey et al., 1991; Terry and Hynes, 1998; Berghuis and Stanton, 2002; Peterson et al., 2006b), the COMPI study separated avoidance coping in two different strategies: active- and passive-avoidance (Schmidt et al., 2005c). This separation was conceptually based on results from qualitative interviews with fertility patients (Schmidt, 1996) and on the WOCQ (Folkman and Lazarus, 1988). There is support to the idea that it could be useful in future infertility coping studies to separate avoidance strategies in active and passive strategies as results from the present study, as well as previous analyses that showed that active-avoidance but not passive-avoidance coping was a significant predictor of fertility problem stress and of low marital benefit (Schmidt et al., 2005a,c).

Active-confronting

Couples who used active-confronting coping moved toward the infertility stress as opposed to away from it. Men and women in these couples reported expressing their feelings about the infertility, asking others for advice and accepting sympathy and understanding from others. Although we hypothesized that active-confronting coping would be associated with decreases in distress, the significant partner effect showed that men’s marital distress increased as his partner’s use of active-confronting coping increased. We also found a partner-by-sex interaction on marital distress—the only time across each of the multilevel models that this occurred. In these couples, a man’s use of active-confronting was not predictive of his personal marital distress or the marital distress of his partner. However, a woman’s use of active-confronting was not only related to increases in her own marital distress but was predictive of her partner’s marital distress. It is noteworthy that the strength of the actor and partner effects for marital distress did not significantly differ, indicating that the partner effect is as strong a contributor to marital distress as the actor effect.

A previous study that examined partner effects of men and women using similar coping processes found opposite results (Peterson et al., 2006b). In that study, men and women were more distressed when women kept their feelings to themselves while their partners were more open. A second study found that women benefited from the problem-focused coping of their partners (Levin et al., 1997). Not only did the current study not confirm these findings, we also found a gender difference in the opposite direction in that men appear to experience greater marital distress when their partner uses active-confronting coping. It is possible that these differences are due to differences in study measures and varying categorical definitions of coping. As such, a more detailed comparison of the results is not possible. On the other hand, it may also be possible that differences between the studies reflect varying cultural standards. For example, the current study was conducted in Denmark where 80% of mothers with small children are employed in the labor market with less than 10% working part-time (Knudsen, 2003). When compared to the USA where many of the other infertility studies are conducted, differences in how parenthood and childlessness are perceived may influence the experience of infertility and a couple’s efforts to cope with it.

Follow-up ANOVA analyses in the current study supported the partner effect finding. In couples where men used low levels of active-confronting coping, a partner’s high use of active-confronting coping was related to increases in men’s marital distress. In these couples, women openly expressed their feelings regarding infertility and sought advice from other infertile women, family and friends, whereas men tended to keep their reactions to themselves. These behaviors appear to be in direct conflict with the way the partner wants...
to cope with the infertility experience. Issues of privacy and disclosure to others regarding infertility are sensitive matters to the infertile couple and when there is incongruence within couples regarding what should be discussed, marital conflict may result. In couples where the difference is openly acknowledged, overt marital conflict may be found, while covert disharmony may be present in couples where their differences remain unspoken. These findings are similar in nature to previous research which found that incongruence in couples regarding their experience of social infertility stress (e.g. how couples experience changes in their social networks) resulted in decreased marital satisfaction for men and women (Peterson et al., 2003).

Passive-avoidance
Couples who used passive-avoidance coping strategies avoided infertility stress but they differed from active-avoidance strategies in that they hoped for things such as a miracle or that the only thing they could do was wait. For passive-avoidance coping, there were no significant partner effects for personal, marital or social distress. In other words, a partner’s use of passive-avoidance coping did not significantly impact the stress of his or her partner. Follow-up analyses supported these findings in that high levels of distress occurred only when both partners used high amounts of passive-avoidance coping, but only compared with couples in which both members used low amounts. Thus, when a partner’s use of passive-avoidance was opposite his or her partner’s, it did not significantly impact his or her partner’s individual stress. The non-significant impact of the partner effect is likely due to the passive and unexpressed nature of the coping strategy, as partners may not even be aware of each others’ use of passive-avoidance.

Meaning-based coping
Couples who engaged in meaning-based coping reported that the experience of infertility helped them grow as a person, find other goals in life and think about infertility in a positive light. A woman’s social distress increased when her partner used more meaning-based coping. This finding was somewhat unexpected as a woman’s individual use of meaning-based coping was related to lower personal, marital and social distress. For men, their partner’s increased use of meaning-based coping was related to decreases in their marital distress. Thus, it appears that a redefinition of the infertility experience by one’s partner may be more beneficial for men than for women.

Perhaps the relationship between meaning-based coping and partner distress in women can be found in gender differences in the pacing and timing of treatment decisions related to the infertility experience, as well as the gender specific view on the importance of parenthood. For example, women have greater difficulty deciding whether to stop treatments and accept infertility as a life-long condition (Daniluk, 1997). It is possible that men who try to find new meaning through infertility are doing so before their partner is prepared to do so, thus increasing her distress. In these instances, men’s use of meaning-based coping may have the opposite effect of its intention. However, when a woman redefines the infertility experience, it not only lowers her own personal, marital and social distress, it also decreases the marital distress of her partner, perhaps signifying the couple’s joint readiness to create new meaning from the stressor. This decrease in men’s marital distress may also be related to a reduction in marital conflict and stress if partners are in agreement in their readiness to redefine the infertility. Physicians and mental health professionals can use the findings from this study to educate their patients regarding the benefits of meaning-based coping for women and their partners as well as the gender differences that exist when men engage in meaning-based coping.

Tamres et al. (2002) conducted a meta-analytic review of sex differences in coping and found support to the idea that gender differences in stressor appraisal accounted for some of the differences in coping. Specifically, studies where the women appraised the stressor as more severe found women to use active coping, avoidance, positive re-appraisal and self-blame more than men. The strategy positive re-appraisal overlapped the meaning-based coping strategy used in our COMPI study (Schmidt et al., 2005a). In the COMPI Infertility Cohort, there was a gender difference in stressor appraisals. Significantly more women than men strongly agreed that their life has been disrupted because of the fertility problem. Further, significantly more women than men strongly agreed that having a child was very important to them. Society also has a gender specific perspective of the importance of parenthood in relation to being a mature adult. Women with no children are frequently perceived as if they have not fulfilled their role as women until they have become mothers. In contrast, parenthood among men is not regarded as a prerequisite for being a ’real man’ (Schmidt, 1996). It is likely that the differences in the effects of meaning-based coping for men and women are reflective of these gender perspectives on the importance of parenthood.

Limitations
It is worth noting that the majority of significant actor effects were stronger in their relative contribution to explained variance of the dependent variables than significant partner effects. The only exceptions to this were active-confronting on marital distress and meaning-based coping on social distress. These data demonstrate that the way an individual copes with infertility stress typically explains the greatest amount of variance in the coping models. Although partner effects are present, the effect sizes are much smaller and explain less variance in the model. As such, when actor effects are stronger than partner effects, findings should be interpreted with this caveat in mind, noting that actor effects have stronger effect sizes even when significant partner effects are present.

The current study is also limited by a cross-sectional design. Because of this, we cannot make causal inferences about the impact of partner coping. In cross-sectional research, the directionality of findings between stress and coping is not possible to determine. Although increased use of coping in one area may have a corresponding relationship to stress in the personal, marital or social domain, increased stress in these domains
may lead to increased use of coping. Furthermore, the point in time that couples completed the measures should be taken into consideration. Couples in the study completed the study measures at the beginning of treatment and how they cope with infertility and the impact this has on one’s partner may differ at later points in time. The results of the current study should be interpreted with this caveats in mind. Future studies that examine the longitudinal nature of partner coping will help shed light on the impact of partner coping over time.

Finally, the COMPI scales used in this study have not yet been validated in large-scale psychometric studies. However, the measures were adopted from existing scales and developed after in-depth qualitative interviews with Danish fertility patients. In addition, both measures were stressor specific to infertility and were not instruments measuring general stress and coping.

**Conclusion**

In conclusion, coping processes and their effects are complex phenomena. Although it is possible with multilevel analyses based on survey data to study both actor and partner effects, it should be kept in mind that the inclusion of field studies and qualitative interviews can be useful in deepening our understanding of complex social-psychological processes such as coping with infertility. The present study found that partner effects are present in couples experiencing infertility, supporting the idea that an individual’s coping strategies can impact his or her partner’s reports of personal, social and marital distress. Future studies that continue to explore the impact of partner coping on individual stress appear warranted.

**Funding**

The Infertility Cohort is part of The Copenhagen Multi-centre Psychosocial Infertility (COMPI) Research Programme initiated by Dr. Lone Schmidt, University of Copenhagen, 2000. The programme is a collaboration between the public Fertility Clinics at Braelstrup Hospital; Herlev University Hospital; The Juliane Marie Centre, Rigshospitalet; Odense University Hospital. This study has received support from the Danish Health Insurance Fund (J.nr. 11/097-97), the Else and Mogens Wedell-Wedellsborgs Fund, the manager E. Daniel-sens and Wife’s Fund, the merchant L.F. Foghts Fund, the Jacob Madsen and Wife Olga Madsen’s Fund, and the Engineer K.A. Rohde and Wife’s Fund.

**References**


Submitted on December 19, 2007; resubmitted on February 6, 2008; accepted on February 12, 2008

Appendix

The COMPI coping strategy scales

People cope with their fertility problem in different ways. How do you cope?

I...

Active-avoidance coping scale

(i) Avoid being with pregnant women or children.
(ii) Leave, when people are talking about pregnancies and children.
(iii) Try to keep my feelings to myself.
(iv) Turn to work or substitute activity to take my mind off things.

Active-confronting coping scale

(i) Let my feelings out somehow.
(ii) Accept sympathy and understanding from someone.
(iii) Ask other childless people for advice.
(iv) Ask a relative or friend for advice.
(v) Read or watch television about childlessness.
(vi) Talk to someone about my emotions as childless.
(vii) Talk to someone about how tests and treatments affect me emotionally.

Passive-avoidance coping scale

(i) Hope a miracle will happen.
(ii) Feel that the only thing I can do is to wait.
(iii) Have fantasies and wishes about how things might turn out.

Meaning-based coping scale

(i) Have grown as a person in a good way.
(ii) Think about the infertility in a positive light.
(iii) Find my marriage/partnership even more valuable now.
(iv) Find other life goals.
(v) Believe there is a meaning in our difficulties in having children.

Response key: (1) not used, (2) used somewhat, (3) used quite a bit, (4) used a great deal.