

The Effect of Social Coping Resources and Growth-Fostering Relationships on Infertility Stress in Women

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Abstract:

The experience of infertility creates negative economic, physical, social, and psychological effects, especially for women. This often results in multiple stresses and needs for coping in these women. Because the manner in which women cope with these experiences are not fully understood, existing counseling interventions fail to adequately meet the needs of women experiencing infertility. Eighty-three women receiving varied services at assisted reproduction clinics participated in a study of the relationship between the use of social coping resources, growth fostering relationships, and infertility stress. The results support the use of social coping resources for coping with infertility stress. In addition, the results indicate the usefulness of understanding the types of growth-fostering relationships that can be an additional resource for helping counselors conceptualize women's experiences and design effective interventions to help women cope with infertility stress.

Article:

Infertility, the inability to achieve a pregnancy after one year of regular sexual intercourse without the use of contraception (Cook, 1987; Meyers et al., 1995; van Balen, Verdurmen, Ketting, 1997) is experienced by approximately 2.1 million married couples in the United States (Center for Disease Control, 1998). Because childbearing is a major, normative transition for both men and women (Korpatnick, Daniluk, & Pattinson, 1993), the experience of infertility constitutes a nonevent transition (Korpatnick et al., 1993) and has been conceptualized as a "crisis" (Atwood & Dobkin, 1992; Butler & Koraleski, 1990; Slade, Raval, Buck, & Lieberman, 1992). This crisis is complex and consists of multiple physical (Robinson & Stewart, 1995), financial (Meyers et al., 1995), social (Atwood & Dobkin, 1992; Cook, 1987; Edelman & Connolly, 1996; Matthews & Matthews, 1986; Reed, 1987), and psychological stressors (Abbey, Andrews, & Halman, 1991; Brand, 1989; Daniluk, 1997; Domar, 1997; Edelman & Connolly, 1996; Jones & Hunter, 1996; Keystone & Kaffko, 1992; Shepherd, 1992; University of North Carolina Hospitals, 1998).

Overall, women experience more negative effects than men throughout the entire infertility diagnostic and treatment process (Abbey et al., 1991; Benazon, Wright, & Sabourin, 1992; Berg & Wilson, 1991; McEwan, Costello, & Taylor, 1987; Ulbrich, Coyle, & Llabre, 1990). Common effects include a greater sense of loss of control than men have (Stanton, Tennen, Affleck, Mendola, 1992) and a greater tendency to blame themselves for the couple's infertility (McEwan et al., 1987). In addition, women are more likely to perceive childlessness as simply unacceptable (Ulbrich et al., 1990). Not surprisingly, then, a variety of authors have noted gender differences in coping with infertility (Connolly & Cooke, 1987; Levin, Sher, & Theodos, 1997; Ulbrich et al., 1990).

Models of stress and coping have been proposed to explain how people appraise stressful situations, attribute the responsibility for stressors, handle the loss of life goals, and process their expectation of control in stressful situations (Brickman et al., 1982; Folkman & Lazarus, 1980; Klinger, 1975; Lazarus & Folkman, 1984; Wortman & Brehm, 1975). Myers and Wark (1996) have used coping models of appraisal in cognitive-behavioral therapy to help couples experiencing infertility, and grief counseling has been used with individuals and groups (Forrest & Gilbert, 1992). In addition, there are studies in which the importance of social support as

a coping, mechanism for women has been established (Billings & Moos, 1984; Flieshman, 1984; Heppner, Reeder, & Larson, 1983; Ptacek, Smith, & Zanas, 1992; Stanton, 1991; Stanton et al., 1992; Stone & Neale, 1984). However, the *types* of social relationships that provide support in stressful situations have not been explored, primarily due to a lack of theory and research explaining women's social relationships. However, the Relational Model of Development, a relatively new model developed by a group of psychologists at the Stone Center at Wellesley College (Jordan, 1995), provides a theoretical base to research these relationships.

The Relational Model of Development proposes that women are relational beings and grow in, through, and toward relationship (Jordan, 1995; Jordan, Kaplan, Miller, Stirrer, St. Surrey, 1991). Connection to others, through growth-fostering relationships, is central to the psychological well-being of women. As a consequence, women's experiences in relationships may be used to promote their psychological well-being. The Relational Model has been applied in counseling with individuals, couples, families, and groups who are experiencing a variety of issues (Bergman, 1991; Fedele & Harrington, 1990; Jordan, 1995; Miller & Stiver, 1997; Philipson, 1993), including infertility (Gibson & Myers, 2000; Schiller, 1997). However, an empirical link between growth-fostering relationships used in coping and improvement in women's psychological well-being has not been established. If a positive correlation between these factors exists, this link could provide a basis for counselors to develop specific interventions to help decrease women's infertility stress.

In this article, the results of a study investigating the use of growth-fostering relationships and social coping resources by infertile women are presented. The primary purpose of the study was to determine the relationship between the use of social coping resources, growth-fostering relationships, and the amount of infertility stress reported by infertile women. The main research question was whether social coping resources and growth-fostering relationships would account for a significant variance in infertility stress. Additional research questions included: What is the relationship between: (1) the use of social coping resources and growth-fostering relationships in infertile women, (2) the use of social coping resources and the amount of infertility stress reported by infertile women, and (3) the use of growth-fostering relationships and the amount of infertility stress reported by infertile women?

METHOD

The population of interest included women who had been diagnosed as infertile and were receiving treatment intended to help them conceive. Permission to recruit participants was granted from two major assisted-reproduction and technology medical clinics in the Southeast. At each site, all of the women who met the criteria for primary or secondary infertility were asked to volunteer for the study, regardless of the type of treatment they were receiving, the type of infertility they were experiencing, or their age. Participants were solicited by the nursing coordinators and staff nurses at each site, all of whom had been briefed on the study and the procedures for recruitment and administration of instruments. After consent was obtained, participants received envelopes that contained three questionnaires, a demographic form, and instructions for completing the packet. Although they were encouraged to complete their packets while at the clinic, participants were allowed to take the packets home and return them via mail or return visit to the clinic.

Participants

A total of 100 women were asked to participate in the study, of whom 83 completed the surveys described below. Thus the overall response rate was 83%. Among the participants, 94% identified themselves as White, 1% as Black, and 1% as Asian. The mean age for the women was 34 years old, with 45% being in the 30-34 year old range, 29% in the 35-39 year range, 16% being in the 27-29 year range, and 10% being over the age of 45. Approximately 95% reported they were married, and 5% reported not being married ($n = 4$) at the time they completed the survey.

The majority (55%) of the participants reported having a college education, with 29% having completed a graduate degree. Eight percent reported a high school education only, and 7% reported completing post-graduate school. In regard to income, 42% reported incomes above \$99,000, 10% between \$90,000 and \$99,000, 10% between \$80,000 and \$89,999, and 10% between \$60,000 and \$69,999. Overall, 83% reported

primary infertility status, and 17% reported secondary infertility status.

Over one third of the participants (39.8%) reported that they were receiving in vitro fertilization treatment for infertility. Thirteen percent reported receiving artificial insemination as their only treatment with 9.6% reporting that they received injectable hormones as their sole treatment. Other treatment types that represented less than 8% of the participants for each type of treatment included controlled ovarian stimulation, artificial insemination with hormones, Clomid, artificial insemination with injectable hormones, artificial insemination with controlled ovarian stimulation, diagnostic laparoscopy, frozen embryo transfer, or reversed tubal ligation. Just under two thirds (60%) reported that their fertility problem was female factor, 12% reported male factor as their infertility problem, 13% reported an unexplained infertility problem, and 12% reported a combination of female and male factor infertility problems.

Participants were asked to identify sources of social support, specifically the gender of a peer sought for support and the type of community group they looked to for support. The majority of participants chose a female peer (92%), while only four participants (5%) chose a male peer, and 4% indicated no preference. Community preferences for social support included: work (46%), religious group (24%), school (16%), support group (4%), volunteer activity group (1%), hobby group (1%), or no choice (8%).

Instrumentation

In addition to the demographic questionnaire, three published assessment instruments were completed by participants: the Coping Resources Inventory (Hammer & Matting, 1988), the Fertility Problem Questionnaire (Newton, Sherrard, Glavac., 1999), and the Relational Health Indices (Liang et al., 1998).

Coping Resources Inventory. The 60-item Coping Resources Inventory (CRI; Hammer & Marting, 1988) was developed to provide a standardized measure of coping resources, defined as "resources inherent in individuals that enable them to handle stressors more effectively, to experience fewer or less intense symptoms upon exposure to a stressor, or to recover faster from exposure" (Hammer & Marting, p. 2). Although the CRI consists of five domains to measure coping resources (i.e., physical, spiritual, cognitive, emotional, social), the social domain was the only one that was examined in this study. This domain is defined as the "degree to which individuals are imbedded in social networks that are able to provide support in times of stress" (Hammer & Marting, p. 3). Based on responses to a 4-point Likert scale for each of the 13 items in the social domain, raw scores are computed and converted to T scores that may then be compared to norms.

Hammer and Marting (1988) reported a Cronbach of .79 for the social coping scale. The test-retest reliability coefficient was .78 for a sample of 115 high school students. Evidence of convergent validity was provided based on correlations of .61 to .80 across the five different domains with a correlation of .63 reported for the Social coping subscale. Using a multitrait-multimethod analysis of two methods, the Coping Resource Inventory and self-ratings of coping resources, evidence of convergent and divergent validity was obtained.

The Fertility Problem Inventory. The Fertility Problem Inventory (FPI) is a 46-item instrument that measures domains considered important in understanding perceived infertility-related stress (Newton et al., 1999). It was initially normed with individuals who were receiving medical treatment for infertility, ranging in age from 27 to 40 years of age. The FPI consists of five subscales—social concern, sexual concern, relationship concern, need for parenthood, and rejection of childfree lifestyle—and one overall global index of infertility-related stress.

Raw scores for each subscale are computed based on responses to 6-point Likert scale items (Newton et al., 1999). The global stress index is calculated by summing all of the 46 items or all of the five subscale scores. Raw scores are then converted to percentiles that may be compared to norms for either men or women. A high score indicates that the individual is experiencing more psychological stress than the average individual of the same sex who is seen for infertility treatment. Only the global stress index scores were examined in this study.

Cronbach's alpha coefficients of internal consistency range from .77 to .93 for all five subscales and the composite stress index for a sample of 1,151 men and women (Newton et al., 1999). Test-retest reliability coefficients for global stress were .83 for women and .84 for men. Convergent validity was established by examining the intercorrelations between FPI scales and standardized measures of depression, anxiety, and marital adjustment. Significant correlations were reported between women's global stress scores on the FPI and measures of depression ($r = .60, p < .001$), anxiety ($r = .37, p < .001$), and marital adjustment ($r = -.40, p < .01$). Newton et al. (1999) reported the results revealed that the correlations were indicative of adequate convergent validity in these areas.

The Relational Health Indices. The Relational Health Indices (RHI) were designed to measure growth-fostering connections with peers, mentors, and communities (Liang et al., 1998). On the RHI, peers are close friends to whom individuals feel attached through respect, affection and/or common interests, excluding family members or romantic partners. Communities are any group affiliations or relationships with whom the individual can identify that contribute to a sense of belonging and a sense of feeling like they are an integral part of that system or environment. Only the Peer and Community scales were administered and consisted of 13 and 14 items, respectively.

For each scale, a mean score is computed based on a 5-point Liked scale representing how the statement applies to one's relationships with either a close friend or community of one's choice. A mean score is computed for each scale to represent how the specific relationship fosters growth for the individual (e.g., a high mean score on the peer scale indicates that the relationship with the peer promotes the individual's psychological well-being.) For the purpose of this study, the community and peer subscale items were combined to provide the mean score.

Liang et al. (1998) reported Cronbach's alpha coefficients ranging from .69 to .85 on the peer subscale and .75 to .90 on the community subscale and a coefficient of .90 on the combined scales. The authors also reported the results of several concurrent validation studies using measures of social support, loneliness, depression, stress, and self-esteem. The results of the studies indicated that the peer ($r = .18, p < .01$) and community ($r = .23, p < .01$) subscales are positively associated with self-esteem, and the community ($r = -.33, p < .01$) subscale negatively correlated with stress. The researchers reported that associations between RHI scales and validation scales were significant and in the direction hypothesized (Liang et al., 1998).

Data Analyses

Frequencies were computed for all demographic data. The primary research question was examined using regression analysis. Pearson Product Moment correlations were computed to test three secondary research questions (see Table 1).

Table 1. Means, Standard Deviations, and Pearson Product Moment Correlations of Participants' Scores for the Fertility Problem Inventory (FPI), Social Coping Resources (SCR), Relational Health Indices Total (RHIT), Partner Support (PS), and Family Support (FS)

Variable	Mean	SD	Correlations				
			FPI	SCR	RHIT	PS	FS
FPI	3.32	1.83	—	-.35	-.16	-.47	-.36
SCR	3.13	.78	-.35	—	.74	.31	.12
RHIT	3.77	.99	-.16	.74	—	.19	.19
PS	4.95	1.00	-.47	.31	.19	—	.42
FS	4.85	1.06	-.36	.12	.19	.42	—

Note: Score ranges for the Fertility Problem Inventory, Partner Support, and Family Support are 1 to 6 for each item. Score ranges for the Social Coping Resources subscale and Relational Health Indices Total are 1 to 5 for each item.

Table 2. Multiple Regression Analysis for Social Coping Resources (SCR), Growth-Fostering Relationships (GFR), Partner Support (PS), Family Support (FS), and Infertility Stress

Variable	R Square	R Square Change	F Change Beta	F	standardized	t	p
SCR	.149	.149	10.87	.002	-.53	-3.20	.002
GFR	.189	.040	3.03	.087	.33	2.10	.040
PS	.319	.129	11.37	.001	-.27	-2.26	.030
FS	.367	.048	4.48	.039	-.25	-2.12	.040

$R^2 = .37, df = 63, p = .0001$

RESULTS

A multiple regression analysis was used to estimate the amount of variance in infertility stress that can be accounted for by the use of social coping resources, growth-fostering relationships, partner support, and family support. As shown in Table 2, all of the variables accounted for a significant amount of the variance in infertility stress ($R^2 = .37, p = .0001$) and contributed significantly to the prediction of infertility stress. In an examination of the standardized beta coefficients, the standardized beta coefficient of social coping resources appears to contribute the most to the prediction of the variance in infertility stress (standardized beta = $-.53, p = .002$) when growth-fostering relationships, partner support, and family support are held constant. Growth-fostering relationships (standardized beta = $.34, p = .04$), partner support (standardized beta = $-.27, p = .03$), and family support (standardized beta = $-.25, p = .04$) contributed somewhat equally to the prediction of variance in infertility stress when the other variables were held constant. However, the standardized beta coefficient for growth-fostering relationships was positive while the other variables' beta coefficients were negative. Furthermore, the R square change values resulted in F changes that were significant for social coping resources (F change = 10.87, $p = .002$), Partner Support (F change = 11.37, $p = .001$), and Family Support (F change = 4.48, $p = .04$).

Pearson Product Moment Correlations were calculated to examine the relationships between social coping resources and growth-fostering relationships, social coping resources and infertility stress, and growth-fostering relationships and infertility stress (shown in Table 1). A strong (and significant) positive correlation was found between social coping resources and growth-fostering relationships ($r = .74, p = .01$). Significant negative correlations were found between social coping resources and infertility stress ($r = -.35, p = .001$) and between growth-fostering relationships and infertility stress ($r = -.16, p = .05$). These results supported hypotheses two, three and four. Although positive correlations were not originally hypothesized between social coping resources and partner and family support, and between growth-fostering relationships and partner and family support, analyses of these relationships indicated significant positive correlations between social coping resources and partner support ($r = .31, p = .006$) and between growth-fostering relationships and partner support ($r = .19, p = .05$).

DISCUSSION

This study examined the relationships among social coping resources, growth-fostering relationships, and infertility stress in women participating in fertility treatments at urban medical clinics. The findings indicate that both social coping resources and growth-fostering relationships contribute significantly to the variance in infertility stress, with infertility stress decreasing as social coping resources increase. This finding is consistent

with the findings of earlier research on the positive effects of social coping on emotional health (Boyce et al., 1998, Dalgard, Bjork, Tambs, 1995; Komproe, Rijken, Ros, & Winnubst, 1997; Lee, 1997), especially in infertile women (Fouad & Fahje, 1989). Furthermore, partner support and family support contribute significantly to the prediction of the variance in infertility stress. Based on these results, it is clear that family and partner supports are very important coping resources for women coping with infertility stress.

Upon closer examination of the results, social coping resources and growth-fostering relationships may have been assessing similar constructs. The strong positive correlation between the two variables ($r = .74$, $p = .01$) is consistent with literature that supports the relationship between them (Connor, Powers, & Bultena, 1979; Genero, Miller, Surrey, & Baldwin, 1992; Jordan, 1997; Liang et al., 1998). Although the correlation is not strong enough to suggest multicollinearity, the regression statistics should be interpreted with caution due to the potential adverse effects of correlated independent variables on the estimation of those statistics (Pedhazur, 1997). For example, an examination of the standardized beta coefficients revealed that all of the coefficients were negative with the exception of growth-fostering relationships. Based on these results, an increase in the score for growth-fostering relationships means an increase in the score for infertility stress. However, this is not theoretically sound if growth-fostering relationships and social coping resources are assessing the same construct. Furthermore, the amount of variance in infertility stress that is accounted for by social coping resources and growth-fostering relationships may actually be smaller than what is reported in the current analysis. In other words, coping resources may be overshadowing the impact of the specific growth-fostering relationships being used as coping resources by infertile women, not allowing for a better understanding of these relationships. However, the usefulness of social coping resources, partner and family support should not be overlooked. There is strong support for using these coping methods in dealing with infertility-related stress.

As is true of all studies using self-report measures, the possibility of bias in responding must be considered a potential limitation in interpreting the present findings. The sensitive nature of infertility issues is an additional possible confound; however, the procedures for recruitment of participants were designed to help overcome these limitations by motivating participants to provide information to help health care providers enhance the quality of services provided during their infertility treatment program. In addition, although the sample for this study was relatively small and restricted to one geographic region of the country, the proportional representation of demographic factors (e. g., economic level, marital status, infertility status, type of infertility, and type of treatment) was consistent with many studies that have been conducted at specialized infertility treatment centers (Abbey et al., 1991; Brand, 1989; Jones & Hunter, 1996; McEwan et al., 1987., Raval, Slade, Buck, & Lieberman, 1987; Wright, Allard, Lecours, & Sabourin, 1989). As a consequence, the findings may provide evidence of trends that further researchers may want to evaluate more closely.

It was interesting to note that differences in the variables of interest did not emerge based on any of the demographic variables of interest for the study. In particular, the nature or type of infertility problem was not related to infertility stress. Rather, the fact of infertility itself was the major issue, and the presence of growth-fostering relationships, social, partner, and family support were the major factors resulting in stress reduction for all of the women who responded. These findings have implications for counseling practice as well as further research.

IMPLICATIONS

As noted earlier, counseling interventions with infertile women have met with only limited success. Counselors can use the findings of this study to design interventions that have the potential to be effective by using social coping resources as part of their treatment plans. Understanding the types of social coping resources will help counselors understand the needs of their infertile clients and how these resources can alleviate stress related to infertility. Counselors can begin to model these resources by creating growth-fostering relationships with their Clients. Additionally, counselors can encourage clients to identify peers and communities that either provide or have the potential to provide these types of relationships. Because family and partner support were found to be important in coping with infertility, counselors may want to help their infertile clients through either couples and family counseling, or both.

Further research is needed to better understand the social coping resources that are beneficial in alleviating infertility stress in women. It would be helpful to replicate the results of the present study with larger sample sizes that are inclusive of a wide variety of demographic factors. It would be interesting to include both males and females in studies on the effects of the use of social coping resources and growth-fostering relationships on infertility stress as well as persons of different ethnic backgrounds and sexual orientation. Learning more about the use of social coping resources and growth-fostering relationships by both infertile men and women can increase counselors' awareness of the needs of this population and provide a knowledge base for designing effective counseling interventions.

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