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Phyllis M. DeHaan

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Rachel F. Schiffman
Major professor

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COPING WITH INFERTILITY: STRATEGIES AND EFFECTIVENESS

By

Phyllis Marie DeHaan

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ABSTRACT

COPING WITH INFERTILITY: STRATEGIES AND EFFECTIVENESS

By

Phyllis Marie DeHaan

A nonexperimental descriptive study was done to examine the impact of infertility, identify coping strategies which infertile women utilize, and determine the effectiveness of the coping strategies. The sample of 44 infertile women had undergone at least one gonadotropin ovulation induction cycle for treatment of their infertility. The overall impact of infertility for this sample was low; however, the impact of infertility on self esteem was moderate. The most effective coping strategy "talked the problem over with someone who had been in a similar situation" was not frequently used. Four coping strategies were frequently used and effective including "thought out different ways to handle the situation", "tried to find out more about the problem", "tried to keep life as normal as possible", and "tried to think positively". Implications include professional acknowledgement of the impact of infertility on women and counseling women regarding effective coping strategies which may be utilized.

To my husband, Mark, and our children, Chris and Jodi, for their support and understanding of my academic pursuits.
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Introduction

Infertility treatment has been gaining attention in recent years due to many technological advances in both diagnosis and treatment. Procedures such as Invitro Fertilization, and alternative parenting options such as gamete donors and gestational carriers provide opportunities for infertile couples which were previously not available. The addition of these treatment options may lengthen the amount of time an infertile woman invests pursuing pregnancy. Menning (1980) defined infertility as, "the inability to achieve pregnancy after a year of regular sexual relations or the inability to carry a pregnancy to live birth" (p. 313). Infertility affects approximately 8% of women in the United States (Mosher & Pratt, 1991).

The adverse emotional effects of infertility on women have been documented in several studies (Andrews, Abbey, & Halman, 1991; Bernstein, Potts, & Mattox, 1985; Hirsch & Hirsch, 1988; Menning, 1980). The inconsistencies of health care professionals in providing emotional support to infertile women have also been documented (Mahlstedt, 1985; Olivier, Lesser, & Bell, 1984). Because of the complexity and intensity of the treatments and the need for frequent patient visits and phone consultations, the Clinical Nurse Specialist (CNS) in primary care or specialty care plays a key role in caring for this patient population.

Statement of the Problem

Many infertile women have experienced some type of distress as they are confronted with the idea that they are not able to have children as they had planned. Decreased feelings of self-esteem, increased feelings of blame and guilt, and alterations in their sexuality (Bernstein, et

al., 1985) have been reported. The stress associated with medical treatment for infertility may interfere with the marital relationship of the couple (Andrews et al., 1991). Infertile women need to cope with their infertility and the distress that it may induce. While something is known about coping strategies, little is known about the effectiveness of coping strategies of infertile women. The purpose of this study was to describe the impact of infertility on women; to identify coping strategies utilized by infertile women; and to identify which of the coping strategies the women perceived to be useful in dealing with infertility. The significance of increasing our understanding of these phenomena is to enhance the psychosocial support which the CNS in primary care or specialty care provides to infertile women.

Three research questions were identified:

1. What is the perceived impact of infertility on infertile women?
2. What coping strategies do infertile women use?
3. Which coping strategies do infertile women perceive to be most effective in dealing with their infertility?

Conceptual Definition

Coping Strategies

While ample literature exists regarding the distressing emotional aspects of infertility, little is written specifically on coping strategies used by infertile women. Some generic definitions about coping exist, however coping strategies are often described within the context of the broad definition of coping. Pearlin & Schooler (1978) define coping as the things people do to avoid being harmed by life-

strains. This concept of coping assumes that people can actively respond to situations which impinge upon them.

Lazarus & Folkman (1980) define coping as "the cognitive and behavioral efforts made to master, tolerate, or reduce external and internal demands and conflicts among them" (p. 223). They also conceptualize coping as a defense system which is meant to reduce tension and restore equilibrium while solving problems.

Jalowiec (1987) conceptualizes coping as actions which are taken to deal with stressors. Like Pearlin & Schooler (1978) and Lazarus and Folkman (1980), the stressors and coping strategies which Jalowiec (1987) refers to are not specific to infertility but may be applied to various situations.

Several authors have studied coping strategies which are specific to infertility. Davis & Dearman (1991) identified six strategies women used for coping with infertility. Although they did not include a conceptual definition of coping strategies in their report, Davis and Dearman summarized their findings by stating that women "initiated coping actions to assist themselves in managing their fears, anxieties, and disappointments" (p. 227). Their conceptualization of coping as actions which are utilized to deal with crises is similar to Pearlin and Schooler's (1978) definition as things which people do to avoid harm by life strains. Similarly, Lazarus and Folkman (1980) refer to coping as efforts made to master problems.

Baker and Quinkert (1983) reported four coping strategies used by women with various infertility problems: 1) seeking information about others with similar problems; 2) depending on one's family for support; 3) receiving comfort from existing children; and 4) viewing the

situation as God's will. While they did not define coping strategies, Baker and Quinkert's four reported strategies are actions which people do in response to infertility.

Jalowiec's (1987) concept of coping as actions which are taken to deal with stressors will be used to guide this study. Sixty individual coping strategies have been identified by Jalowiec. Furthermore, eight different styles of coping have been identified by Jalowiec. The styles are confrontive, evasive, optimistic, fatalistic, emotive, palliative, supportant, and self-reliant coping strategies. Each coping style is composed of several of the individual coping strategies. While the term styles is used by Jalowiec, in this study styles will refer to the subscales described above, and individual coping strategies will be evaluated separately. Confrontive coping styles involve facing up to the problem and constructive problem solving. Examples of individual confrontive coping strategies are finding out more about the problem, setting up a plan of action, and learning something new in order to deal with the problem.

According to Jalowiec (1987) evasive coping styles refer to evasive and avoidant activities used in coping with a situation such as thinking about something else or sleeping more than usual. Optimistic coping styles are the actions of positive thinking, positive outlook, and positive comparisons. A fatalistic coping style is one which involves pessimism, hopelessness, and feeling little control over the situation. Examples of individual fatalistic coping strategies include resigning oneself to the situation because things look hopeless and expecting the worst that can happen. Emotive coping styles are expressing and releasing emotions and ventilating feelings like getting angry and

letting off steam. Palliative coping styles include trying to reduce or control distress by making the person feel better such as eating more than usual, exercising, and using relaxation techniques. Supportant coping styles involve the use of support systems including personal, professional, and spiritual. Self-reliant coping styles refer to depending on oneself rather than on others in dealing with the situation. Examples of individual self-reliant coping strategies are keeping feelings to self and wanting to be alone to think things out. Like the previously mentioned authors, Jalowiec (1987) describes coping as actions which are taken in response to stressful situations.

For the purpose of this study, this researcher defines coping strategies of infertile women to be any physical, mental, or emotional action which an infertile woman uses to cope with her infertility.

Impact of Infertility

Infertility can have a powerful effect on a woman's self-esteem and sexuality and result in feelings of blame and guilt (Bernstein et al., 1985). According to Bernstein et al. (1985), women view their infertility as personal inadequacy and social failure. The role and gender expectations of infertile women cannot be met. The inability to conceive is often experienced by infertile women as a loss similar to a death. The loss of conception results in grieving; however, this type of grieving is not socially recognized. As a result, infertile women often feel isolated and feel as thought they have little or no support or guidance for surviving this crisis.

Menning (1980) describes infertility as a life crisis. Many feelings may be experienced by women facing the reality of infertility. These feelings include surprise or shock when they first discover that

they are infertile. Feelings of isolation, anger, and grief may also be experienced by infertile women (Menning, 1980).

Mahlstedt (1985) writes about depression which may result from infertility. Many losses occur with the diagnosis of infertility including the fear of the loss of a relationship. Emotional distancing between husband and wife may result from infertility and the different ways in which each member of the couple reacts to the reality. This distancing strains the marital relationship. Mahlstedt (1985) identifies other types of loss as well such as: the loss of health from prolonged stress as a result of infertility, the loss of an acceptable body image, and the loss of status or prestige due to the inability to conceive. Many women report a loss of self-esteem. Like Menning (1980), Mahlstedt (1985) states that infertile women often feel angry due to the unfairness and lack of control which they have over their infertility. The emotional, psychological, and physical responses to infertility may be called the impact of infertility. For the purpose of this study, this author defines the impact of infertility as the powerful effect which the emotional reactions to infertility can cause.

Review of Literature

The concept of coping strategies used by infertile women has not received much research attention. Several authors have documented emotional reactions, or the impact of infertility. Various authors' defining characteristics of these concepts to establish the emotional nature, or impact of the problem of infertility and the need to cope with the problem were reviewed.

Wilson (1979) identified a sequence of emotional reactions to infertility which included disbelief and denial, depression and anger,

optimism, desperation, and acceptance. Open-ended questionnaires were sent to 70 patients with primary infertility prior to the initial visit. The patients were then followed for at least four months after the initial infertility investigation. Recorded responses from the questionnaire and observed responses of patients throughout the period of investigation and treatment were evaluated in order to reach the study conclusions. The sequence of responses identifies that infertility is a distressing emotional experience which would logically have a significant impact on infertile women. Although the number of subjects participating in the study was relatively small (41) and the subjects were recruited from one medical practice, the results of the study are consistent with other literature.

Like Wilson (1979), Blenner (1990) describes a sequence of events which infertile women experience. Blenner's sample of 50 individuals was taken from several different sources including a non-professional infertility conference, two infertility support groups, advertisement in an infertility newsletter, and brochures placed at infertility offices throughout Southern California. In depth interviews were conducted in the patients' homes. Data were then reviewed for themes or categories that described patient's feelings regarding infertility assessment and treatment, aspects of the health care system, and patients' perceptions of health provider's management of their infertility treatment. The first event in the sequence of responses identified by Blenner (1990) is described as a "dawning of awareness" stage which occurs before a couple seeks treatment. Blenner (1990) reports that in this stage a couple slowly comes to the realization that they are not achieving pregnancy as quickly as planned. They are still very optimistic in this stage. This

stage is similar to the "hope" phase of the sequence described by Wilson.

In stage 2, the couples seek treatment for their infertility. After diagnostic work is completed and a diagnosis is made, they are faced with the reality of their problem. Stage 3 is moving on with treatment, or active participation, and Stage 4 finds the couple intensifying treatment. This stage is similar to Wilson's (1979) desperation stage. Blenner (1990) identifies the next three stages as spiraling down, where feelings of being overwhelmed are very common; letting go, when the couple still goes through the motions of infertility treatment but begin to experience a mental shut down, and the quitting and moving out stage. Both of these stages could be compared to the depression stage identified by Wilson. Finally, Blenner (1990) identifies stage 8 as shifting the focus. In this final stage, the childless couple experiences a peaceful resignation which allows them to shift their focus from reproduction to other areas which interest them. This final stage is similar to Wilson's acceptance stage. Both authors Blenner (1990) and Wilson (1979) describe the impact of infertility as well as a type of coping as the infertile "work through" the stages of infertility. The strategies discussed by Wilson (1979) and Blenner (1990) are emotional ways of coping.

Bernstein et al. (1985) reported that infertile women experienced increased feelings of blame and guilt, significantly decreased self-esteem, and problems with their sexuality as a result of the impact of infertility. Andrews et al. (1991) reported that the impact of infertility resulted in increased marital conflict, and, like

Bernstein et al., decreased sexual self-esteem, and direct negative effects on life-as-a-whole.

In a later project, Halman, Abbey, & Andrews (1993) conducted a study to determine factors related to satisfaction with infertility treatment. Personal or telephone interviews were conducted with 185 married couples with primary infertility. Escape/avoidance coping was measured with the Folkman and Lazarus ways of coping scale. A four-item Likert type scale ranging from not at all to a great deal was used to measure how often respondents used avoidance strategies such as wishing the situation would go away. Problem-solving coping was measured using three additional questions based on items developed by Folkman and Lazarus. This scale measured coping strategies such as making an action plan.

To measure the patient's perception of personal control, a series of five questions developed by Abbey and Andrews were used. A five-item Likert-type scale ranging from strongly agree to strongly disagree was used. Questions such as how much the patients felt in control of their lives were asked. The questions were open-ended and answered in interviews conducted by the researchers.

The authors found that escape/avoidance coping strategies did not increase treatment satisfaction because the less couples used them, the more satisfied they were with their treatment. Problem solving coping strategies, and maintaining a personal sense of control resulted in increased treatment satisfaction of the sample.

Davis & Dearman (1991) studied 30 infertile women from one site. The subjects were interviewed privately using an investigator-developed, semistructured interview guide. The interviews were taped and then

transcribed and subjected to a content-analysis procedure. The authors identified six strategies women used for coping with infertility: 1) increasing the space between themselves and reminders of infertility; 2) regaining control; 3) being the best; 4) looking for hidden meaning; 5) given in to feelings; and 6) sharing the burden.

Increasing the space between themselves and reminders of infertility is similar to Halman et al. (1993) escape/avoidance coping. Regaining control is similar to Halman et al. (1993) coping strategy relating to a personal sense of control.

Baker & Quinkert (1983) reported four coping strategies used by women with various reproductive problems including infertility. The questionnaire was composed of nine sections; general information, problems getting pregnant, unplanned pregnancy, abortion, miscarriage, difficult pregnancy/deliver, death of a child, tubes tied/hysterectomy, and family data. The questionnaire was developed and pretested by the authors. Specific statistical procedures used for reliability and validity testing were not included in the report. The coping strategies identified were: 1) seeking information about others with similar problems; 2) depending on one's family for support; 3) receiving comfort from existing children; and 4) viewing the situation as God's will. Baker & Quinkert's (1983) study identified additional coping strategies which Halman et al. (1993) and Davis & Dearman (1991) did not identify.

Although these studies have identified coping strategies which infertile women use, no studies were identified which measured the perceived effectiveness of the coping strategies. If the various emotional effects of infertility reported in the literature can be interpreted as the impact of infertility, many similarities exist in the

definition. All of the studies indicate that infertility has a significant impact on women and frequently results in emotional distress (Baker & Quinkert, 1983; Bernstein et al., 1985; Blenner, 1990; Davis & Dearman, 1991; Wilson, 1979).

Coping skills are reported in one study (Davis & Dearman, 1991) and some of the emotional reactions reported in other studies (Blenner, 1991; Wilson, 1979) such as blaming oneself and grieving may actually be coping strategies. Two studies referred to actions as coping strategies (Abbet et al., 1993; Baker & Quinkert, 1983). Methods used in the studies varied between interviews and questionnaires. Instruments in each study reviewed had acceptable reliability. The inconsistencies in the literature regarding terminology make the literature review challenging. If coping skills, certain emotional reactions, and coping strategies are synonymous, similarities exist. The problem with the studies has been the inconsistencies of the definitions and the lack of investigation into the effectiveness of various coping strategies.

This study attempted to fill the gap in the literature by investigating the perceived effectiveness of the coping strategies which infertile women identify using the Jalowiec Coping Scale.

Theoretical Framework

Roy's Adaptation Model (1991) and, more specifically, the concept of coping strategies and use of the cognator mechanism in the self-concept adaptive mode as identified by Roy were chosen to develop the concept of coping strategies resulting from the impact of infertility. The Roy Adaptative Model (RAM) was first used in 1968. Roy's goals was to demonstrate that the practice of nursing, based on the science of nursing, makes a difference in the health status of the population

(Lutjens, 1991). Adaptation has been described by Roy as a process involving holistic functioning to affect health positively (Roy, 1984). Process is described as the phenomenon of stress producing an interaction. For the purpose of this paper, the impact of infertility was identified as the emotional, psychological and physical effects of infertility, and the interaction is the coping strategies of the individuals. The impact of infertility triggers coping strategies described by Roy as either adaptive or maladaptive.

Four adaptive modes described by Roy are physiologic, self-concept, role-function, and inter-dependence; however, for the purpose of this paper and being consistent with the definition of coping strategies for infertility, only the self-concept adaptive mode is presented. The self-concept mode is related to the need for psychic well-being. One's image of self is established by feelings, experience and image. The impact of infertility often results in psychological distress in the form of decreased self-esteem, increased blame and guilt, and alterations in sexuality (Bernstein et al., 1985; Mahlstedt, 1985, Menning, 1980) thereby affecting the self-concept mode. Therefore, the self-concept mode is chosen because most of the reactions resulting from the impact of infertility are emotional and directly affect self-concept.

According to Roy, two types of coping mechanisms exist. These two mechanisms are linked through the process of perception. They are described as the regulator which responds to physiological stimuli, and the cognator which is used mainly as a mechanism to cope with psychosocial stimuli. Although the medical treatment of infertility requires intense use of the regulator mode, coping strategies used as a

result of the impact of infertility deal with the cognator mechanism (Figure 1).

In this study, the stimulus is the impact of infertility. Coping strategies are actions taken by infertile women in response to the impact of infertility (Figure 1). The arrow connects the stimulus to coping strategies because the impact of infertility results in coping strategies. Adaptive and maladaptive functioning is measured by effectiveness scores related to coping strategies. Although Roy uses the terms adaptive and maladaptive, in order to maintain consistency this author substituted the terms effective and ineffective. This can be visualized in Figure 1 as either an effective (adaptive) coping strategy with high effectiveness scores or a non-effective (maladaptive) coping strategy with low effectiveness scores. The CNS utilizes the nursing process to assist infertile women in identifying effective coping strategies.

The first step in this process is assessment of stimuli (see Figure 1). The stimulus is the impact of infertility which may be influencing the behavior of the infertile woman. The impact of infertility may result in decreased self-esteem, increased feelings of blame and guilt, and alterations in sexuality.

The second step for the CNS is the assessment of behavior. The behavior being assessed is the coping strategies infertile women use. Figure 1 shows an arrow from coping strategies to assessment of behavior. This is the section in which coping strategies which infertile women use are identified. Coping strategies identified by the infertile woman are then evaluated to determine whether or not they are effective.

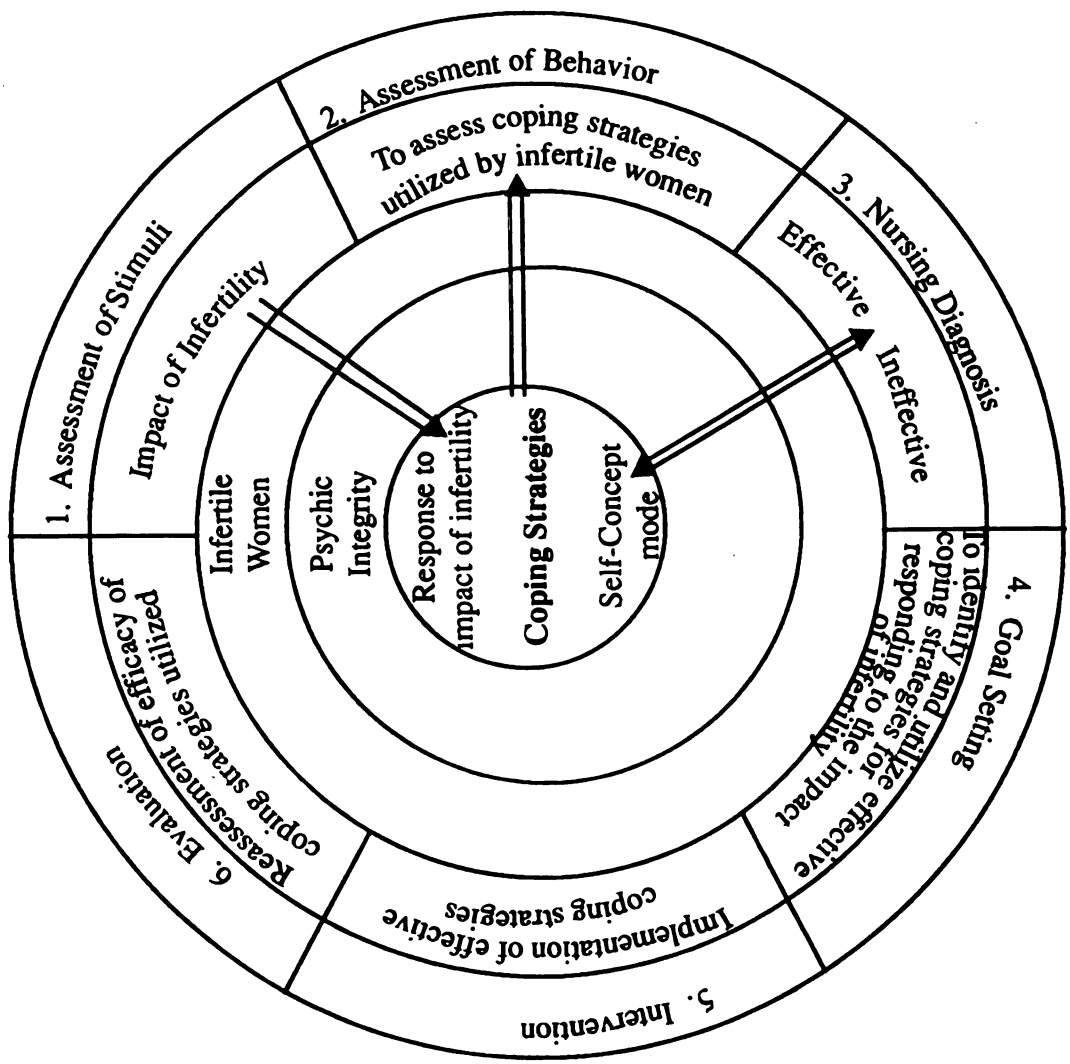

Figure 1. Conceptual Model of Coping with Infertiilty

Adapted from Roy, C. and Andrews. (1991).

Although not part of this study, the process would continue after determination of the effective or ineffective nature of the coping strategies (step three in the nursing process). The CNS together with the infertile woman would identify and set goals. For the purpose of this study, the goal is to utilize effective coping strategies to respond to the impact of infertility. This can be seen in Figure 1.

The fifth step in the process is intervention. This step focuses on the perceived effectiveness of the coping strategies. Coping strategies are evaluated and steps to implement them are taken. For example, if an infertile woman perceives exercise to be an effective coping strategy, the CNS can then assist the woman in planning ways in which the woman can utilize that particular coping mechanism. The CNS can also play a role in assisting infertile women to evaluate coping strategies and in determining the effectiveness of them.

The final step in the nursing process as seen in Figure 1, is the evaluation. In this process, the CNS with the patient, reevaluates the effectiveness of coping strategies which were identified and used. Was the goal of utilizing effective coping strategies in response to the impact of infertility met? If not, can alternate coping strategies be identified which the woman might try. The process is on-going as coping strategies as well as the impact of infertility may change over time.

Methods

Design

This research study was nonexperimental and descriptive. It was designed to describe phenomena which occur after a woman discovers that she is infertile regarding coping strategies used and the perceived

effectiveness of the coping strategies. Data were also evaluated to determine the impact of infertility on infertile women.

Sample

The sample targeted for study were 55 infertile women who sought medical treatment for infertility at Michigan State University, College of Human Medicine Reproductive Endocrinology Department. Questionnaires were returned by 44 or 80% of the women. Inclusion criteria were the ability to read and understand English, and primary infertility in women who had undergone at least one Metrodin or one Pergonal cycle which was not successful. This convenience sample of self-referred infertile women was obtained in a phased enrollment design over a three month period from July through September, 1994. Phased enrollment increased the likelihood of obtaining the desired number of participants.

Operational Definitions

Impact of Infertility. The impact of infertility in women with primary infertility and on the second or subsequent Metrodin or Pergonal cycle was measured with the Infertility Questionnaire (IFQ) (Bernstein et al., 1985) (see Appendix A). This questionnaire is a 21 item, self-reporting assessment which is divided into three subsections which measure the effect of infertility on self-esteem, questions 1-8; blame and guilt, questions 9-13; and sexuality, questions 14-21 (see Appendix A). The total scores of the three subscales of the IFQ; self-esteem, blame/guilt, and sexuality, were added together for a total impact score. This score was then divided by 21 to determine the mean score. According to Bernstein et al., a mean score of 1 to 3 represents low distress while a mean score of 3.1 to 4 represents mild to moderate distress.

Coping Strategies. Coping strategies used as well as perceived effectiveness of the strategies, were assessed using the Jalowiec Coping Scale (JCS) (see Appendix B) which identified individual strategies used and measured the perceived effectiveness of the strategies. Eight coping styles have been identified by Jalowiec. These styles have been labeled as: confrontive, evasive, optimistic, fatalistic, emotive, palliative, supportant, and self-reliant. The use score and the effectiveness scores were calculated for the individual coping strategies and for each of the eight coping styles. The 60 items on the JCS were divided by Jalowiec as follows:

1. Confrontive coping style: 10 items; items 4, 13, 16, 25, 27, 29, 33, 38, 43, and 45.
2. Evasive coping style: 13 items; items 7, 10, 14, 18, 20, 21, 28, 35, 40, 48, 55, 56, and 58.
3. Optimistic coping style: 9 items; items 2, 5, 30, 32, 39, 47, 49, 50, and 54.
4. Fatalistic coping style: 4 items; items 9, 12, 23, and 60.
5. Emotive coping style: 5 items; items 1, 8, 24, 46, and 51.
6. Palliative coping style: 7 items; items, 3, 6, 26, 34, 36, 44, and 53.
7. Supportant coping style: 5 items; items 11, 15, 17, 42, and 59.
8. Self-reliant coping style: 7 items; items 19, 22, 31, 37, 41, 52, and 57.

(see Appendix B for complete listing)

Instruments

Infertility Questionnaire. The Infertility Questionnaire (IFQ) developed by Bernstein et al. (1985) was utilized to measure the impact of infertility. This questionnaire is a 21 item, self-report assessment. The test format utilizes a five-point Likert scale. Answers range from strongly agree (5), to strongly disagree (1). Each section was scored separately. Total scores for sections were added together and divided by 21 to determine the overall mean score. This instrument was tested by Bernstein for reliability using the test-retest method and scored 0.92 indicating stability. Cronbach's alpha for the subscales were self-esteem, 0.83; blame and guilt, 0.72; and sexuality, 0.79 with a total test alpha of 0.88. An item-by-item correlation matrix was reported with correlations ranging between 0.35 and 0.45. This questionnaire was used in order to determine whether women's perceptions of the impact of their infertility were similar.

Jalowiec Coping Scale. The Jalowiec Coping Scale (JCS, 1987) was utilized to identify specific coping strategies which infertile women use. The JCS is not specific to any particular stressor or stressful situation but includes space at the beginning to list on which situation the investigator is interested in focusing. For the purpose of this investigation, the stressor/stressful situation was identified as infertility.

The JCS scale is a 60 item, self-report questionnaire which is divided into two parts: the first identifies strategies used, and a second measures the helpfulness of the strategies. Because of the multidimensional nature of coping behavior, the instrument has been divided into eight coping styles. The validity of the eight coping

styles or strategies was examined by studying the extent of agreement of a panel of researchers with the author's classifications. Percent of agreement of the panel with the author regarding coping styles was as follows: supportant, 94%; confrontive, 86%; evasive, 85%; palliative, 76%; optimistic, 72%; fatalistic, 67%; self-reliant, 66%; emotive, 54%. Construct validity has not been established by Jalowiec.

Cronbach alphas computed by Jalowiec for total use and total effectiveness scores resulted in mean alphas of .86 on total use and .90 on total effectiveness indicating a high level of reliability.

Mean alphas for use subscales calculated from 12 different studies were: Confrontive, .80; Evasive, .72; Optimistic, .68; Fatalistic, .52; Emotive, .58; Palliative, .48; Supportant, .52; and Self-reliant, .59. Mean Cronbach alphas for effectiveness subscales were: Confrontive, .80; Evasive, .74; Optimistic, .74; Fatalistic, .47; Emotive, .55; Palliative, .50; Supportant, .55; and Self-reliant, .61.

Test-retest correlations at 3, 6, 9, and 12 month intervals were .76, .68, .57, and .70 respectively indicating stability of the instrument. Jalowiec (1991) states that content validity is supported by the broad literature base and empirical base from which the items are drawn; the large number of items used to tap the conceptual domain of coping; and the inclusion of diverse types of coping behavior.

The respondent was instructed to answer the questions with a specific stressor in mind, in this situation the stressor was identified as infertility. The JCS is scored on a four point Likert scale with answers ranging from never used (0) to often used (3) on the coping scale and not helpful (0) to very helpful (3) on the effectiveness scale.

Procedures

1. The questionnaires, along with a letter of explanation and return postage, were mailed to the 55 potential participants who met the study criteria. Patients who met the required criteria and returned the questionnaires were included in the study (n = 44).
2. Return postage and envelope was provided and the completed questionnaires were mailed to the researcher's home address after completion.

Human Subjects Protection

Anonymity was assured by the questionnaire return procedure. No names were used on the questionnaires and the researcher could not identify questionnaires with any particular individual. Participants were instructed in writing that their return of the completed questionnaire implied their consent to participate in the study. Questionnaires were returned by using the stamped, self-addressed envelopes provided in the original mailing, and it was not possible for the researcher to identify participants. Permission from the institutional review board was obtained prior to commencement of the study (Appendix C). Site permission was granted from the Department of Obstetrics, Gynecology, and Reproductive Endocrinology at Michigan State University (Appendix C).

Data Analysis

Descriptive statistics on demographics were calculated for age in years, race, education, and occupation. Information about marital status, number treatment cycle, and length of infertility was also calculated.

The first research question, on the impact of infertility was answered with the IFQ. Scores 0 to 3 indicated a low impact and scores of 3.1 to 4 indicated a mild to moderate impact. Descriptive data was calculated on all items.

The second research question about coping strategies was answered with the use scale of the JCS. Descriptive statistics on all items and scales were calculated. Strategies were rank ordered by "often used" responses. Mean use frequency was calculated and most frequently used individual strategies as well as styles were determined.

The third research question about effectiveness was answered with the effectiveness scale of the JCS. Effectiveness ratings for all items used were calculated and rank ordered. Items with high scores on this scale were identified as most effective. Mean effectiveness scores of the coping styles were also calculated to determine if a particular coping style was very effective.

Limitations

Some limitations exist in the study design. First, the sample was small and taken from one site, therefore, the results and inferences made from this study are not necessarily generalizable to the entire population of infertile women.

A second limitation pertains to the differences between individuals and the fact that this design is cross sectional. Specifically, different individuals may utilize very different coping strategies. This study will not evaluate if coping strategies change over time or with the length of treatment.

Third, the JCS is a broad instrument for measuring coping strategies. It was not developed specifically for use with infertility,

therefore, some of the coping strategies might not be particularly applicable to infertility.

Assumptions

For the purpose of this research, the following assumption will be made:

1. The questionnaires were completed by the respondents honestly.

Results

This section includes a description of the results of the data analysis. Tables are provided to summarize the data and to address the research questions.

Sample

Fifty-five infertile women were identified and sent the questionnaire during the two month data collection period. Of these, 44 returned completed questionnaires (80%). The ages of the women ranged from 25 to 46 years (M = 34.3 years). The women in this sample had a 1 to 15 year history of infertility (M = 4.6) and all of the women were nulliparous. Almost all of the women were married (n = 38), 4 were single, and 2 did not indicate marital status. All of the women had completed high school, 16 (39%) had 13-17 years of school, and 17 (41.5%) reported having completed 18-24 years of school. The number of Metrodin or Pergonal cycles completed by the women ranged from 1 to 11 cycles (M = 4.3 cycles).

Impact of Infertility

The Infertility Questionnaire (IFQ) was used to answer the research question, "what is the perceived impact of infertility on infertile women?" According to Bernstein et al. (1985), mean scores of 1 to 3 on the questionnaire indicate low distress. Mean scores of 3.1 to 4

indicate mild to moderate distress. The mean score for this population was 2.99 which indicates low distress according to Bernstein et al. (1985). The range of scores on the IFQ was 2.29 to 4.00 with a SD of .38. Although the overall mean score indicated low distress, it was very close to the mild distress score of 3.1 (Table 1).

Subscale mean scores ranged from 2.35 to 3.49. The ranges on the subscales were wide indicating that there were variations among the individual subjects regarding impact of infertility (see Table 1). The guilt subscale mean indicated low distress; however, due to the wide standard deviation, a portion of the sample experienced some mild to moderate degree of guilt as a result of their infertility. The overall mean of the sexuality subscale score indicated low distress in the area of sexuality for most of the sample. The self-esteem subscale mean score was 3.49. This score was well above 3.1 and was an indication of moderate distress in the area of self-esteem as a result of infertility.

The impact of infertility on this sample was low. The overall mean score indicated that the group as a whole experienced low distress as a result of their infertility, however the group did experience moderate distress in the area of self-esteem as indicated by the score on that subscale.

Coping Strategies

Individual Coping Strategies. The Jalowiec Coping Scale was used to answer the research question "What coping strategies do infertile women use?" All of the coping strategies were used by at least one of the respondents. Ten of the coping strategies were identified as "often

Table 1

Means and standard deviations of impact of infertility

	Mean	SD	Range
Overall	2.99	.38	2.29-4.00
Subscales			
Guilt	2.35	.95	1.00-4.60
Sexuality	2.91	.49	1.75-4.00
Self-Esteem	3.49	.46	2.63-4.88

used" by at least 50% of respondents (see Table 2). The most frequently used coping strategy was item 2, "hoped that things would get better" (72.7%). The second most frequently used item was item 58, "wished that the problem would go away" (65.9%). This information indicated that many infertile women often hope things will get better and wish the problem of infertility would go away.

Four coping strategies were reported as "often used" by 61.4% of the sample. They are item 4, "thought out different ways to handle the situation"; item 27 "tried to find out more about the problem"; item 30 "tried to keep your life as normal as possible and not let the problem interfere"; and item 50 "tried to think positively". The first two, "thought out different ways to handle the situation", and "tried to find out more about the problem", indicated that education is often used by

Table 2

Rank order of individual coping strategies by frequency of "often used"

Item	Label	Percent
2	Hoped things would get better	72.7
58	Wished the problem would go away	65.9
4	Thought out different ways to handle the situation	61.4
27	Tried to find out more about problem	61.4
30	Kept life as normal as possible	61.4
50	Tried to think positively	61.4
44	Tried to keep busy	56.8
1	Worried about the problem	54.5
25	Tried to change the situation	50.0
29	Tried to handle things one at a time	50.0
38	Set up a plan of action	45.5
41	Tried to keep feelings under control	45.5
5	Told self things could be worse	43.2
17	Prayed, trusted God	43.2
39	Tried to keep sense of humor	43.2
11	Talked about problem with family or friends	40.9
13	Tried to look objectively at problem	40.9
21	Waited to see what would happen	38.6
47	Thought about good things in life	38.6
19	Kept feelings to self	36.4
36	Tried to distract yourself	36.4
42	Talked with someone with same problem	36.4
45	Learned something new about problem	36.4
10	Tried to put problem out of mind	34.1
14	Day dreamed about better life	34.1
16	Tried to keep situation under control	34.1
9	Expected the worst	29.5
22	Wanted to be alone	27.3
3	Ate or smoked more	27.3
37	Told yourself you could handle anything	27.3
6	Exercised or did physical activity	25.0
49	Compared self to others in same situation	25.0
51	Blamed self	25.0
28	Slept more	20.5
43	Practiced in mind what had to be done	20.5
57	Tried to improve self	20.5
7	Tried to get away from problem for a while	18.2
12	Accepted situation	18.2
23	Resigned self to hopelessness	18.2
31	Thought about how you had handled past problems	18.2
56	Avoided being with people	15.9
60	Told self you were having bad luck	15.9
15	Talked with a professional	13.6
40	Put off facing the problem	13.6
26	Used relaxation techniques	11.4

Table 2 (cont.)

Item	Label	Percent
32	Told yourself not to worry	11.4
33	Tried to work out a compromise	11.4
24	Took out your tensions on someone else	9.1
34	Took a drink to make yourself feel better	9.1
48	Tried to ignore or avoid the problem	9.1
54	Tried to see the good side of the situation	9.1
8	Got mad and let off steam	6.8
35	Let time take care of problem	6.8
52	Preferred to work things out yourself	6.8
18	Tried to get out of the situation	4.5
55	Told self that problem was not important	4.5
59	Depended on others	4.5
20	Told self problem was someone else's fault	2.3
46	Did something impulsive or risky	2.3
53	Took medication to reduce tension	2.3

infertile women. The second two, "tried to keep your life as normal as possible and not let the problem interfere", and "tried to think positively" indicate that infertile women often try to maintain their usual schedules and life-styles when faced with infertility. A little over half of the sample (56.8%) "often used" the coping strategy, "tried to keep busy", item 44. At least half of the sample (54.5%) frequently worried about the problem (item 1) and 50% tried to change the situation (item 25) and tried to handle things one at a time (item 29).

Mean scores of coping strategies identified 21 strategies with means of 2.0 or greater (Table 3). A score of 2 indicates a strategy which is sometimes used; a score of 3 indicates a strategy which is often used, therefore 21 strategies were sometimes to often used. The range of mean scores was .20-2.68. The range of the 21 highest mean scores was 2.02-

Table 3

Rank order of mean individual coping strategy used

Item	Label	Mean	SD
2	Hoped things would get better	2.68	.60
27	Tried to find out more about problem	2.61	.49
50	Tried to think positively	2.57	.59
30	Kept life as normal as possible	2.52	.66
4	Thought out different ways to handle situation	2.34	.57
29	Tried to handle things one at a time	2.44	.63
44	Tried to keep busy	2.43	.76
1	Worried about the problem	2.39	.78
47	Thought about good things in life	2.34	.57
41	Tried to keep feelings under control	2.32	.77
58	Wished the problem would go away	2.32	1.12
25	Tried to change the situation	2.21	1.02
11	Talked about problem with family or friends	2.21	.84
39	Tried to keep sense of humor	2.18	.90
36	Tried to distract yourself	2.18	.72
13	Tried to look objectively at problem	2.14	.88
5	Told self things could be worse	2.14	.88
38	Set up a plan of action	2.11	1.02
10	Tried to put problem out of mind	2.09	.86
21	Waited to see what would happen	2.07	.97
16	Tried to keep situation under control	2.02	.94
17	Prayed, trusted God	1.98	1.09
19	Kept feelings to self	1.89	1.13
7	Tried to get away from problem for a while	1.89	.78
42	Talked with someone with same problem	1.88	1.07
45	Learned something new about problem	1.88	1.14
14	Daydreamed about better life	1.86	1.11
6	Exercised or did physical activity	1.84	.94
37	Told yourself you could handle anything	1.77	1.04
22	Wanted to be alone	1.73	1.09
49	Compared self to others in same situation	1.73	1.04
54	Tried to see the good side of the situation	1.66	.83
57	Tried to improve self	1.61	1.06
9	Expected the worst	1.57	1.15
24	Took out your tensions on someone else	1.50	.82
43	Practiced in mind what had to be done	1.48	1.11
12	Accepted situation	1.43	1.02
31	Thought about how you had handled past problems	1.42	1.10
32	Told yourself not to worry	1.41	.92
3	Ate or smoked more	1.40	1.28
23	Resigned self to hopelessness	1.35	1.11
51	Blamed self	1.34	1.24
8	Got mad and let off steam	1.32	.88
28	Slept more	1.32	1.16
56	Avoided being with people	1.27	1.11

Table 3 (cont.)

Item	Label	Mean	SD
15	Talked with a professional	1.25	1.10
26	Used relaxation techniques	1.23	1.03
59	Depended on others	1.18	.90
52	Preferred to work things out yourself	1.16	.95
35	Let time take care of problem	1.12	1.05
33	Tried to work out a compromise	1.09	1.05
40	Put off facing the problem	1.05	1.11
60	Told self you were having bad luck	1.00	1.14
48	Tried to ignore or avoid the problem	.86	1.00
18	Tried to get out of the situation	.57	.95
34	Took a drink to make yourself feel better	.45	.66
46	Did something impulsive or risky	.40	.76
55	Told self that problem was not important	.30	.55
53	Took medication to reduce tension	.23	.64
20	Told self problem was some else's fault	.70	.46

2.68 (Table 3). Four coping strategies had mean scores above 2.5. They were item 30, "tried to keep your life as normal as possible", item 50, "tried to think positively", item 27, "tried to find out more about the problem", and item 2, "hoped things would get better". These coping strategies were among the top six "often used" coping strategies.

Coping Styles

Mean scores on the subscales ranged from 1.30 for Evasive to 2.14 for Optimistic (Table 4).

The optimistic coping style subscale had the highest mean score of all the subscales (M = 2.14) indicating that optimistic coping styles were "sometimes used" to "often used" by the sample. Individual strategies on the optimistic coping style subscale which received high often used scores were "hoped that things would get better", "tried to

Table 4

Rank order of coping by mean use

	M	SD	Range
Optimistic	2.14	.42	1.11-2.89
Confrontive	2.05	.48	1.10-2.80
Self reliant	1.70	.50	.43-2.57
Supportant	1.68	.59	.20-2.80
Palliative	1.39	.38	.57-2.43
Emotive	1.39	.58	.40-2.80
Fatal	1.34	.78	.00-3.00
Evasive	1.30	.44	.54-2.31

keep life as normal as possible", "tried to keep a sense of humor", and "tried to think positively".

Confrontive coping styles (M = 2.05) received the next highest mean score on the coping styles subscales. The individual coping strategies with high scores which fall within this subscale include "thought out different ways to handle the situation", and "tried to find out more about the problem". These strategies received high individual "often used" frequencies (61.4%) and high mean use scores (M = 2.48 and M = 2.61 respectively).

Effectiveness of Coping Strategies

Individual Coping Strategies. To answer the third research question "what coping strategies do infertile women perceive to be most helpful", the second part of the JCS was evaluated. Effectiveness scores by

percent of "very helpful" responses ranged from 2.3% - 40.9% (Table 5). The highest score on this scale was 40.9% on item 42, "talked with someone with the same problem". This indicates that of the women who used this strategy, 40.9% found it very helpful.

The next highest score on the percent effectiveness scale for individual coping strategies was 34.1% on item 27 "tried to find out more about the problem". This indicates that of the women who used this coping strategy, 34.1% found it very helpful.

Two coping strategies, item 39, "tried to keep a sense of humor", and item 11, "talked about the problem with family or friends" were rated very helpful by 31.8% of the women. This indicates that of the women who used these coping strategies, 31.8% of them found the strategies to be very helpful.

Individual effectiveness mean scores were rank ordered with means ranging from .21 - 2.1 (Table 6). Three items had 2.00 or higher on effectiveness scores with the highest effectiveness score being 2.14. A score of 2 on the effectiveness section indicates "fairly helpful" and a score of 3 on this section indicates "very helpful". The highest mean effectiveness score was 2.14 on item 42, "talked the problem over with someone who had been in a similar situation". This coping strategy also received the highest individual percent effectiveness score, indicating that the women who used this coping strategy found it to be fairly to very helpful.

The next highest mean effectiveness score was 2.09 on item 27, "tried to find out more about the problem". Of the women who "often used" this strategy, 34.1% found it to be very helpful. The mean

Table 5

Rank order of effectiveness of individual coping strategies by frequency of "very helpful" responses

Item	Label	Percent Very Helpful
42	Talked with someone with same problem	40.9
27	Tried to find out more about problem	34.1
39	Tried to keep sense of humor	31.8
11	Talked about problem with family or friends	31.8
17	Prayed, trusted God	29.5
38	Set up a plan of action	27.3
36	Tried to distract yourself	25.0
6	Exercised or did physical activity	25.0
44	Tried to keep busy	22.7
50	Tried to think positively	22.7
4	Thought out different ways to handle situation	20.5
30	Kept life as normal as possible	20.5
29	Tried to handle things one at a time	18.2
47	Thought about good things in life	18.2
13	Tried to look objectively at problem	15.9
10	Tried to put problem out of mind	15.9
7	Tried to get away from problem for a while	15.9
15	Talked with a professional	15.9
25	Tried to change the situation	13.6
43	Practiced in mind what had to be done	13.6
26	Used relaxation techniques	13.6
22	Wanted to be alone	11.4
57	Tried to improve self	11.4
35	Let time take care of problem	11.4
12	Accepted situation	9.1
31	Thought about how you had handled past problems	9.1
23	Resigned self to hopelessness	6.8
8	Got mad an let off steam	6.8
41	Tried to keep feelings under control	6.8
5	Told self things could be worse	6.8
16	Tried to keep situation under control	6.8
9	Expected the worse	6.8
3	Ate or smoked more	6.8
37	Told yourself you could handle anything	5.0
49	Compared self to others in same situation	4.5
28	Slept more	4.5
40	Put off facing the problem	4.5
33	Tried to work out a compromise	4.5
34	Took a drink to make yourself feel better	4.5
52	Preferred to work things out yourself	4.5
18	Tried to get out of the situation	4.5
55	Told self that problem was not important	4.5
59	Depended on others	4.5
20	Told self problem was someone else's fault	4.5
46	Did something impulsive or risky	4.5

Table 5 (cont.)

Item	Label	Percent Very Helpful
58	Wished the problem would go away	4.5
19	Kept feelings to self	4.5
21	Waited to see what would happen	2.3
1	Worried about the problem	2.3
2	Hoped things would get better	2.3
53	Took medication to reduce tension	2.3
48	Tried to ignore or avoid the problem	2.3
24	Took out your tensions on someone else	2.3
32	Told yourself not to worry	2.3
60	Told self you were having bad luck	2.3
56	Avoided being with people	2.3
33	Tried to work out a compromise	2.3
54	Tried to see the good side of the situation	0.0

Table 6

Rank order of mean effectiveness score for individual strategies

Item	Label	Mean	SD
42	Talked with someone with same problem	2.14	1.05
27	Tried to find out more about problem	2.09	.81
39	Tried to keep sense of humor	2.00	.96
6	Exercised or did physical activity	1.95	.90
45	Learned something new about problem	1.94	.91
36	Tried to distract yourself	1.93	.81
38	Set up a plan of action	1.92	.93
47	Thought about good things in life	1.86	.71
11	Talked about problem with family or friends	1.85	1.01
17	Prayed, trusted God	1.76	1.10
29	Tried to handle things one at a time	1.76	.85
30	Kept life as normal as possible	1.72	.88
50	Tried to think positively	1.72	.98
44	Tried to keep busy	1.71	.89
4	Thought out different ways to handle the situation	1.71	.92
15	Talked with a professional	1.68	1.01
7	Tried to get away from problem for a while	1.65	.89
13	Tried to look objectively at problem	1.55	.94
43	Practiced in mind what had to be done	1.55	.87
57	Tried to improve self	1.53	.92
26	Used relaxation techniques	1.50	1.02
22	Wanted to be alone	1.49	.90

Table 6 (cont.)

Item	Label	Mean	SD
16	Tried to keep situation under control	1.47	.80
37	Told yourself you could handle anything	1.46	.89
10	Tried to put problem out of mind	1.37	.98
25	Tried to change the situation	1.31	1.09
31	Thought about how you had handled past problems	1.24	1.00
41	Tried to keep feelings under control	1.24	.79
59	Depended on others	1.18	.88
2	Hoped things would get better	1.16	.81
54	Tried to see the good side of the situation	1.16	.73
33	Tried to work out a compromise	1.14	.97
8	Got mad and let off steam	1.11	.90
5	Told self things could be worse	1.05	.83
49	Compared self to others in same situation	1.03	.84
18	Tried to get out of situation	1.00	1.10
12	Accepted situation	1.00	1.02
28	Slept more	.97	.93
32	Told yourself not to worry	.89	.80
46	Did something impulsive or risky	.88	1.05
56	Avoid being with people	.87	.78
35	Let time take care of problem	.86	.71
23	Resigned self to hopelessness	.77	.96
21	Waited to see what would happen	.76	.82
14	Daydreamed about better life	.69	.82
53	Took medication to reduce tension	.69	1.03
19	Kept feelings to self	.64	.87
52	Preferred to work things out yourself	.61	.84
34	Took a drink to make yourself feel better	.61	.89
58	Wished the problem would go away	.61	.89
48	Tried to ignore or avoid problem	.60	.91
9	Expected the worst	.60	.91
3	Ate or smoked more	.58	1.03
40	Put off facing the problem	.57	.92
55	Told self that problem was not important	.56	1.09
20	Told self problem was someone else's fault	.53	1.06
60	Told self you were having bad luck	.44	.77
24	Took out your tensions on someone else	.33	.66
51	Blamed self	.25	.70
1	Worried about the problem	.21	.47

effectiveness score was 2.09 which indicates that the women who used this strategy found it to be fairly to very helpful.

The third highest mean effectiveness score was 2.0 on the strategy "tried to keep a sense of humor". The women who used this coping strategy also found it to be fairly to very helpful.

Effectiveness by Coping Styles. Mean effectiveness scores of coping styles ranged from .53 - 1.75 (Table 7). The four highest mean effectiveness scores by scales were Optimistic, Palliative, Confrontive, and Supportant (Table 7); however, the subscale scores were not above 2.0, "fairly helpful". All the subscale scores fell within the range of not helpful to slightly helpful. This indicates that one specific type of style was not identified as being fairly to very helpful.

Table 7

Rank order of mean coping styles

Variable	Mean	SD
Supportant	1.75	.67
Confrontive	1.65	.64
Palliative	1.46	.61
Optimistic	1.40	.51
Self reliant	1.17	.56
Evasive	.85	.46
Fatalistic	.71	.74
Emotive	.53	.41

Discussion

Impact of Infertility

According to Bernstein et al. (1985) mean scores of 1-3 on the questionnaire indicate low distress. Mean scores of 3.1 - 4 indicate mild to moderate distress. The mean score for this population was 2.99 which indicates low distress according to Bernstein. The minimum score was 2.29 and the maximum score was 4.00 with a SD of .38. Although the overall mean score indicated low distress, the self-esteem subscale mean was in the moderate distress range at 3.49. The guilt subscale mean was 2.35 (SD = .95). The standard deviation of the guilt subscale was wide indicating that some of the sample experienced some degree of guilt as a result of their infertility. The sexuality subscale mean score was 2.91 (SD = .49). The overall mean of this subscale indicated low distress in the area of sexuality for most of the sample. The self-esteem subscale mean score was 3.49 (SD = .46). This score was well above 3.1 and was an indication of moderate distress in the area of self-esteem as a result of infertility. The impact of infertility was in self-esteem rather than in guilt or sexuality.

Although the Bernstein et al. (1985) sample indicated mild to moderate distress in all three areas of the IFQ, this sample did not. The mean score (2.99) was close to the 3.1 score of mild distress but over. This may be due to the small sample size and sample fluctuations. The self-esteem subscale mean score did indicate moderate distress as it was 3.49. This finding is consistent with Bernstein et al. (1985) and Andrews et al. (1991). The fact that the mean score on the IFQ was 2.99 was not expected. Interactions by telephone and in person with infertility patients indicate that they are anxious and concerned,

therefore, one would expect that the impact of infertility scores would be higher. A possible explanation for this finding might be the fact that the sample was recruited from one clinical site located on a University campus. The sample was well educated and most of the women had challenging careers. Perhaps the satisfaction that the women felt regarding their careers eased the distress they felt in response to the impact of infertility.

Another possible explanation for the low distress scores might be that in addition to their careers, the women are aware of a change in societal expectations of them. A decade or two ago the primary societal expectation of women was reproduction. Presently, it is increasingly more socially acceptable for a woman to remain childless by choice.

Coping Strategies

Individual Coping Strategies. The coping strategies "hoped that things would get better", item 2; and "wished the problem would go away", item 58 were the two most frequently used coping strategies of this study. When challenged by any stressful, disappointing situation, it seems understandable that individuals would wish the problem would go away and hope that things would get better. It is not surprising to this author that these items were frequently used, rather, this finding seems consistent with human nature.

The four coping strategies which were next highest on the use scale were item 4, "thought out different ways to handle the situation", item 27, "tried to find out more about the problem", item 30, "tried to keep life as normal as possible", and item 50, "tried to think positively" were all used frequently by 61.4% of the sample. The fact that this sample was primarily composed of professional, working women may explain

this finding. The women in the sample had apparently delayed childbearing (mean age = 34.3 years) and pursued careers. Problem-solving is an activity which is practiced frequently in the workplace. Problems are identified, information is gathered, and a plan of action is decided on. Similarly, the infertile women in this study identified the problem as infertility, they gathered information by finding out more about the problem, and they developed a plan of action based on the information they gathered. This seems to be a logical and understandable sequence of events particularly for educated, professional women. These findings are consistent with Blenner (1990) who described a sequence of events which infertile women experience. Identification of the problem is similar to Blenner's (1990) "dawning of awareness" stage. Stage 2 and 3 according to Blenner (1990) is seeking treatment and moving on with treatment which is consistent with the findings of this study, "find out more about the problem" and "develop a plan of action". Andrews et al. (1993) also found that the coping strategy of problem solving was utilized by the infertile women in their study.

The coping strategy "tried to keep life as normal as possible and not let the problem interfere" is consistent with Davis and Dearman's (1991) findings that infertile women tend to increase the space between themselves and reminders of infertility, and attempt to regain control. By keeping life as normal as possible and not letting the problem interfere, women can put space between themselves and reminders of infertility. the daily demands of work and career may divert attention from the problem, if only temporarily.

Coping Styles

Two of the coping styles received mean use scores greater than 2.0. They were the confrontive coping style and the optimistic coping style. The confrontive coping style subscale is comprised of 10 items which relate to confrontation of the situation and constructive problem-solving. Two of these items received high individual use scores which helped raise the mean score of this particular style. The two items are item 4, "thought out different ways to handle the situation", and item 27, "tried to find out more about the problem". This is consistent with the findings from the individual coping strategies. Two additional items which were "often used" by 50% of the subjects were item 25, "tried to change the situation", and item 29, "tried to handle things one step at a time". The mean use scores of items 25 and 29 were 2.21 and 2.44; therefore, it is apparent that these coping strategies also helped raise the confrontive style use score. Item 38, "set up a plan of action" was often used by 45.5% of the sample ($\underline{M}$ = 2.11). These strategies all fall under the coping style of confrontive and indicate that the infertile women in this study use the problem solving techniques described earlier to cope with the challenge of infertility.

Optimistic coping styles refers to strategies which relate to positive thinking, positive outlook and positive comparisons. Three of the nine individual coping strategies in this subscale received high use scores. They are item 2, "hoped that things would get better", item 30, "tried to keep your life as normal as possible and not let the problem interfere", and item 50, "tried to think positively". The high use percents on these items raise the mean use score for the subscale of

optimistic coping styles. The next highest use scores on individual coping strategies within the optimistic coping style were item 5, "told yourself that things could be much worse", and item 39, "tried to keep a sense of humor". This again is consistent with the findings from the individual strategies and indicates that the women in this study used optimistic coping strategies when dealing with the impact of infertility.

The use of optimistic coping styles might also be related to the low impact of infertility on this sample. It might be easier to be optimistic and to use optimistic coping strategies when a situation is not perceived to be mild to moderately distressing.

The high use scores related to the strategies in the optimistic coping styles may be explained by the fact that the individual coping strategy "hoped that things would get better" scored highest overall on both the percent of "often used" and on the mean use scores. Most subjects in the sample used this strategy which is a natural human reaction to any stressful event. It is consistent with human nature to hope that things will get better. Another individual strategy within the optimistic coping styles subscale which was frequently used was item 30, "tried to keep your life as normal as possible". The use of this strategy can be explained by the fact that most of the women in the sample were employed. It is logical that it would be both helpful and important for them to maintain their employment and commitment to their jobs while undergoing infertility treatment. By keeping their lives as normal as possible, the women would probably reduce stress which might result from missing work as a result of treatment. By maintaining their

daily routines, they would also put some space between themselves and reminders of infertility. Additionally, these women have probably been successful at projects in the workplace which were implemented over time. They may be accustomed to delayed gratification.

Effectiveness

Individual Coping Strategies. The coping strategy which scored highest on both the percent of very helpful responses (40.9) and on the mean effectiveness scale ($\underline{M}$ = 2.14) was item 42 "talked the problem over with someone who had been in a similar situation". Women who shared their burden with another person who was facing the same challenge found this sharing to be helpful. This finding is understandable as sharing the burden is helpful to many people. This action also seems to be consistent with human nature and is the framework for support groups. The women may be used to sharing problems in their lives with others such as close friends or co-workers.

The coping strategy "tried to find out more about the problem" received the second highest effectiveness score ($\underline{M}$ = 2.1) of all 60 variables. This finding may be due to the education levels of the women in the sample. Most of the women in this sample had some post high school education and many of them had graduate education. It is reasonable to assume that the women in this study were accustomed to educating themselves regarding situations about which they wanted to know more. Even though this strategy received one of the highest effectiveness scores of the study, the score indicates that the strategy was only fairly helpful. The fact that the highest effectiveness score was just above fairly helpful supports the idea that infertility is a

life crisis which has an impact on women's lives. If a coping strategy could take away the pain of infertility, the problem would not seem as severe. The fact that not one coping strategy received a mean effectiveness score in the "very helpful" range indicates that this is a problem which does not go away and which has an impact on the lives of the women who experience it.

The third highest effectiveness item was a "very helpful" frequency rating of 31.8% ($\underline{M}$ = 2.0) on item 39, "tried to keep a sense of humor". It is possible that women found this coping strategy to be helpful because many times, when dealing with the treatment of infertility, specific requests regarding timing of sexual intercourse are made. For example, if a post coital test is recommended, the couple may need to meet on their lunch hour in the middle of a busy day in order to have intercourse. Perhaps by keeping a sense of humor, the women dissipate some of the pressure which their spouses might feel to "perform" on demand. Another situation in which humor might be helpful is when injection techniques are explained for medication administration when ovulation induction is indicated. In this situation, the husband is usually instructed in injection techniques so that the woman may receive medication which will stimulate the development of ovarian follicles. Humor is often demonstrated by the couples when these teaching sessions occur and it seems to alleviate some of the tension felt by the patients at this time.

Item 11, "talked the problem over with family or friends" also received 31.8% on "very helpful" responses and a mean effectiveness rating of 1.85. Although the percent of very helpful responses was the

same as item 39, the mean score was somewhat lower. This item was fourth highest on the "very helpful" responses scale. Although it was the fourth highest score, the low percent of effectiveness indicates that only 31.8% of the women who used this strategy found it to be very helpful. Although the number of women finding this strategy to be effective was not high, it is important to note that it was useful for some of the sample. This coping strategy should not be confused with the unsolicited advice which women occasionally receive from well-meaning family and friends but which is not always perceived as helpful. The point to be made from this finding is that it may be very effective for women to talk the problem over with self-selected family and friends. When the woman chooses the person to confide in and initiates the discussion, this coping strategy can be very effective.

The coping strategies "hoped things would get better" (item 2) and "wished the problem would go away" (item 58), were found to be ineffective by the women who reported using them. This was not an unexpected finding. Although the strategies fit the conceptual definition of any physical, mental, or emotional action which an infertile woman may use to cope with her infertility, they are not likely to produce significant results. As stated earlier, it seems consistent with human nature to wish things would get better and to wish that the problem would go away when faced with a crisis such as infertility.

Effectiveness of Coping Styles. Mean effectiveness scores of the coping styles were fairly low indicating that one particular coping style was not identified as being very helpful. The highest effectiveness score was on the supportant subscale. The mean

effectiveness score for the supportant subscale was 1.75 which indicates that this coping style was slightly to fairly helpful. Items included in the supportant coping style are item 11, "talked the problem over with family or friends", item 15, "talked the problem over with a professional person", item 17, "prayed or put your trust in God", item 42, "talked the problem over with people who had been in a similar situation", and item 59, "depended on others to help you out". All of these items involve the action or discussion of the problem with trusted individuals. The women who used this coping style found it to be slightly to fairly helpful.

The next highest mean score on the coping styles was 1.65 for the confrontive coping style. This is the coping style which includes individual coping strategies such as item 27, "find out more about the problem", item 4, "thought out different ways to handle the situation", and item 29, "tried to handle things one step at a time". The remaining mean coping style scores ranged from .53 for emotive coping style of 1.46 for the palliative coping style. Although no one particular coping style was identified as being very helpful, many of the coping styles had individual coping strategies in them which did receive high effectiveness scores. Therefore, women use a variety of coping styles.

Coping Strategies by Use and Effectiveness

Although two coping strategies in this study scored the highest on the use scale, the same strategies scored the lowest on the effectiveness scale. These strategies were item 2, "hoped things would get better" (72.7% "often used"), and item 58, "wished the problem would go away" (65.9% "often used") (Table 2). These findings can be explained by their consistency with human nature. It is expected that

humans would wish the problem would go away and hope that things would get better when faced with difficult situations. Even though it is normal to hope for an improvement of the situation, the wishing and hoping are not likely to change much. The low effectiveness ratings of these two coping strategies indicate that the women realize that the two strategies will not improve the situation even if they are used.

The four coping strategies which were next highest (61.4% "often used") were "thought out different ways to handle the situation", "tried to find out more about the problem", "tried to keep life as normal as possible and not let the problem interfere", and "tried to think positively" are consistent with findings by Halman et al. (1993), Davis & Dearman (1991), and Baker & Quinkert (1983). These strategies also scored fairly high on the effectiveness scale (1.71 and 2.09 respectively). The 2.09 effectiveness score on finding out more about the problem was the second highest effectiveness score of all 60 variables. Both the strategy "thought out different ways to handle the situation" and "tried to find out more about the problem" indicate that it is important and helpful for women to learn more about the problem. This finding can be related to the education and employment status of the individuals in the sample and the fact that they are accustomed to problem-solving in such a manner.

Two of the subscales received mean use scores greater than 2.0. They were the confrontive subscale ($\underline{M}$ = 2.05) and the optimistic subscale ($\underline{M}$ = 2.14). The effectiveness of these two subscales were 1.65 and 1.40 respectively indicating that they were slightly to fairly helpful. Although individual strategies within each subscale did

receive high use and effectiveness scores, one particular style of coping did not appear to be very helpful.

Perhaps the most important aspect of this study is the perceived effectiveness of the coping strategies. Only three individual coping strategies had mean effectiveness scores of 2.00 (fairly helpful) or over. "Tried to keep a sense of humor" was often used by 43.2 percent of the sample and was perceived to be fairly helpful ($\underline{M}$ = 2.00). This is an indication that for some patients, humor is helpful. "Tried to find out more about the problem" was often used by 61.4% of the sample and was found to be fairly to very helpful ($\underline{M}$ = 2.09). This indicates that women perceive finding out more about the problem to be fairly to very helpful. "Talked the problem over with someone who had been in a similar situation" was often used by only 36.4% ($\underline{M}$ = 1.88) of the sample but received the highest effectiveness score ($\underline{M}$ = 2.14) of the all 60 items. Although a small percentage of the sample used this coping strategy, it was perceived to be very helpful by the women who used it. This finding may indicate that support groups are effective for the women who participate in them, but it is unknown which of these women participated in support groups. It is interesting that the strategy received such a high effectiveness score but received a low use score. The low use score may be due to patient's lack of information regarding support groups. If the low use scores are not the result of lack of knowledge, then they might be attributed to personality differences among patients. While some women find it helpful to talk to others about the problem, others may wish to keep their situation private.

Support for Theoretical Framework

The findings of this study support the theoretical framework. For example, women identified finding out more about the problem as an often used and helpful coping strategy. The women in this sample utilized this coping strategy as a result of the impact of infertility on their lives. The impact of infertility is the stimulus (see Figure 1). The coping strategy is the action taken in response to the stimulus. The coping strategies are then assessed by effectiveness scores. The coping strategy "find out more about the problem" had high effectiveness scores. The nurse can formulate this interpretation through communicating with the patient and by observation. The coping strategy "find out more about the problem" was found to be effective. A nursing diagnosis can be made at this point indicating that "finding out more about the problem" is an effective coping strategy. As an effective coping strategy, finding out more about the problem can then become recognized as such and be utilized. The nursing intervention specific to the coping strategy is patient education. Implementation of the intervention (patient education) is the next step, followed by evaluation of the strategy and intervention which is conducted by the infertile woman and the nurse (see Figure 1).

Similarly, as a result of the stimulus, the coping strategy "wished the problem would go away" was utilized. This coping strategy was found to be ineffective based on the results of its effectiveness score. The CNS along with the infertile woman determines that the strategy is ineffective, therefore an alternate strategy is tried. As part of the nursing process, the CNS assists the infertile woman in identification and implementation of effective coping strategies.

The sample in this study was small and the participants were recruited from one practice. The cross sectional nature of the study also limits the inferences which can be made. It is impossible to determine at what point in their cycles women received and completed the questionnaire which might also influence their responses. The women all lived in the same general Midwest geographic location. Over 90% of the women had post high school education and were employed outside of the home. Perhaps the fact that the women were educated and busy with careers can explain the overall score on the IFQ which indicated low distress. In spite of the limitations of the study, some useful findings were gleaned about use and effectiveness of coping strategies.

Implications

Impact of Infertility

Although the sample in this study scored low in the range of distress on the Infertility Questionnaire, they did indicate moderate distress on the self-esteem subscale ($M = 3.49$). This finding is important for infertility health care providers and has important implications for advanced practice nurses. Specific items which make up the self-esteem subscale on the IFQ can be reviewed in Appendix A. Recognition of the potential emotional impact on the self-esteem of infertility patients must be made by the CNS. Knowing that infertility is a serious disease with significant emotional consequence will enable the nurse to be sensitive to the emotional support which infertile women may need. It is often helpful for the nurse to counsel infertile women, acknowledging that infertility can be very distressing. By acknowledging that fact, the nurse in a sense, validates the emotions

which the woman might have been feeling therefore giving the woman "permission" to express her frustration. Often, support can be provided to infertile women in the form of listening. The nurse is a "safe" person to whom infertile woman can express feelings. Frustrations, disappointments, and grief can be verbalized to the nurse with the assurance that the infertile woman's concerns are being heard by an empathetic, non-judgmental, confidential ear.

The nurse can provide support by knowing that infertility impacts infertile women in many different ways. Individual responses to infertility must be recognized and if necessary, appropriate referrals for counseling may need to be recommended. Support can be given by providing patient education. Education can be accomplished by answering patient questions, explaining indications for and actions of medications, and by providing appropriate literature for the patient's review. By assisting the infertile woman in finding out more about the problem, the CNS may help the patient to feel better about herself by increasing her understanding of the problem and its treatment and helping the patient to feel as if she is actively involved in her treatment plan.

The CNS in primary care must not only recognize the disease of infertility, she/he must be aware of the emotional implications associated with the disease. As the primary care provider, the CNS will provide the patient with the appropriate referral to a Reproductive Endocrinologist for evaluation and treatment of the disease. Furthermore, attention should be directed to the patient's emotional well-being and her method of coping with her infertility. The primary care provider may provide emotional support in the form of counseling.

If necessary, referral to a professional counselor can be made. By maintaining contact with the patient and the specialist, the primary care CNS can assist the patient in coping with infertility. The primary care of the patient must continue and should not be ignored while the patient is seeking specialty treatment. It is important that the primary care CNS clarify with the patient that the need for regular health assessments continues concurrently with her infertility healthcare.

Coping Strategies

Finding out more about the problem is both important and effective. As a member of the healthcare team, the Clinical Nurse Specialist must possess knowledge and understanding of the reproductive process, various treatment modalities, alternatives and resources. Patient education is an important nursing intervention in assisting the infertile woman to find out more about the problem. Patient questions must be answered promptly and knowledgeably and treatment options including indications and risks, thoroughly explained. By providing appropriate patient education, the infertile woman will be equipped to make informed decisions about her infertility care and treatment. Reference literature should be available to patients and the CNS should be aware of the information in the literature in order to identify specific pamphlets or books which an individual might benefit from. This study indicates that infertile women frequently use education strategies and find them to be effective.

Education, evaluating different ways to handle the situation, and setting up a plan of action are all confrontive coping strategies. The

CNS can assist the couple as they evaluate options and select a treatment plan which is most appropriate for them. Being available to answer questions and to provide appropriate resources are important implications for the CNS providing care to infertile women. Knowledge about this confrontive style and the specific individual coping strategies which were often used and found to be effective will enhance the CNS' understanding of the importance of providing this type of support.

Infertile women from this sample who utilized support groups or talked with someone else who had a similar problem found this coping strategy to be the most effective of the strategies. The CNS should include information regarding support groups and/or counseling to the patient. Specific meeting dates and contact people and phone numbers should be provided to infertile women. The nurse should encourage infertile women to try support groups for a time to evaluate if this coping strategy would be helpful. If the woman does not decide to use or to continue use of this resource, it would not be for lack of knowing about it. Some women prefer to keep their infertility private and might not feel comfortable discussing the issue with someone else. The nurse must be aware of and respect individual preferences while encouraging different strategies. It is important, however, to provide the woman with the information so that she can make her own choice of coping strategies based on her individual needs and personality.

Professional endorsement of support groups can be provided by attending meetings and offerings to speak on a specific subject. By being available and involved in this manner, the nurse communicates a commitment to the emotional and educational needs of infertile women.

Another possibility is for the CNS to form a smaller support group by providing informal evening opportunities for information sharing with patients from the practice in which she/he works. The smaller size of the group as well as the familiar setting of the office and their relationship with the CNS might encourage the participation of women who are reluctant to attend the larger general meetings.

The use of humor, keeping life as normal as possible, and thinking positively may also be shared with the patients as possible effective coping strategies to utilize. These coping strategies are included in the optimistic coping styles subscale. Ways in which the CNS can assist particularly with keeping life normal, is to provide flexibility in scheduling labs and procedures such as ultrasounds. Many infertile women appreciate early morning ultrasounds so they do not need to take time off from their work. The CNS can individualize treatment plans for individuals in order to minimize disruption for the patient. For example, if a woman was planning to be out of town for the weekend of a treatment cycle, the CNS could assist the woman in locating a lab in the area she will be which could draw the blood and report lab values.

Some infertile women found it helpful to keep a sense of humor. The nurse must be sensitive in this area as some women might be offended by the use of humor. Awareness of the legitimacy of humor as a coping strategy as well as sensitivity to the uniqueness of each individual will enable the nurse to interject humor appropriately and to help willing patients use humor.

Thinking positively is a coping strategy which was often used and was found to be fairly to very helpful. The CNS should encourage

infertile women to think positively, however, it is important to be honest with these women about success and failure rates of various treatment options. Optimism is always appropriate for if a woman has no hope, why would she be undergoing treatment for the problem? Even if a woman's chances for success are low, the positive as well as the negative findings should be explained. This information will be helpful to infertile women in their decision-making.

The broader implications of this study for nursing practice are to establish a broader knowledge base with respect to coping strategies utilized by infertile women, and especially the effectiveness of the coping strategies. By increasing the knowledge base, clinicians will be better able to provide the support that is essential to infertile women.

Professional nursing education both at the undergraduate and graduate level should include information about the disease of infertility. With increased treatment options and opportunities, women can be expected to seek information about these options and opportunities from their primary health care providers. The CNS in primary care should possess an understanding of the causes of infertility as well as treatment options the woman might be given. Knowledge regarding appropriate referral sources should also be current. The CNS in primary care must be capable of providing the infertile woman with the information which she needs in order to make informed decisions about her care. The CNS in specialty care could provide guest lectures for students at both the undergraduate and graduate level.

It is important that the CNS recognize that each woman is an individual and that what works for one woman may not work for another.

The CNS should attempt to identify unique personality characteristics of infertile women in order to assist them in identifying and utilizing effective coping strategies.

Implications for Research

Further research on this subject should focus on a larger sample and should include patients from multiple clinical sites. Inclusion of the partners in studies of this nature would further expand the knowledge base and enhance the understanding of coping strategies. Additional studies on the perceived effectiveness of coping strategies are important as effectiveness has not been measured before. Additional statistical analyses might be performed on the existing data to determine if variations exist within the sample due to the duration of infertility or the age or education of the woman.

Additional studies should be conducted to examine differences in patient populations. For example, do single women or women from different ethnic or racial cultures use different coping strategies than married women and are there differences in the perceived effectiveness of the coping strategies. Similarly, the differences, if any, in the coping strategies used and the effectiveness of the strategies between homosexual and heterosexual women could be examined. Longitudinal studies should be conducted to determine differences in coping strategies and effectiveness over time.

Many possibilities for future research exist regarding the subject of coping with infertility. Replication of this study would also be helpful in determining if the findings can be repeated with a different sample. More information is needed regarding the effectiveness of

coping strategies and styles in order to provide the best possible care to the infertile woman.

In conclusion, infertile women appear to experience a moderate degree of distress in the area of self-esteem. The women found that it was helpful to talk to someone who was experiencing the same type of problem. They also found it helpful to find out more about the problem and to consider different possible solutions to the situation thereby developing a plan of action. It is apparent that the CNS can provide assistance with counseling and education.

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APPENDICES

APPENDIX A

Judith Bernstein, RNC, MSN

51 Highland Street, Newton MA 02165 * (617)527-4203/Fax 630-9923

January 11, 1993

Phyllis DeHaan
2434 Dobie Rd.
Mason MI 48854

Dear Phyllis:

I've been out of town and just came back to your letter. Please use the IFQ. I have included copies of the scoring sheets. Unfortunately I have never had time to summarize data from the more than 50 graduate student theses that have used the IFQ, but I can tell you that none have experienced major problems, and narrative accounts describe good correlation with other testing. None of this is useful, however, until I do the vast amount of statistical work to assemble a second-level validation analysis.

Good luck to you; I would only ask that you send me a summary of results.

Sincerely,

Judith Bernstein, RNC, MSN

IFQ

Instructions: Please circle the number closest to the reaction that most accurately expresses your current feelings.

Answer:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Circle:	5	4	3	2	1

1. I feel bad about my body because of our inability to have a child.

   5 4 3 2 1

2. Since our infertility I feel I can do anything as well as I used to.

   5 4 3 2 1

3. I feel I am as attractive as before our infertility.

   5 4 3 2 1

4. I feel less masculine/feminine because of our inability to have a child.

   5 4 3 2 1

5. Compared with others, I feel I am a worthwhile person.

   5 4 3 2 1

6. Lately, I feel I am sexually attractive to my partner.

   5 4 3 2 1

7. I feel I will be incomplete as a man/woman if we cannot have a child.

   5 4 3 2 1

8. Having an infertility problem makes me feel physically incompetent.

   5 4 3 2 1

9. I feel guilty about somehow causing our infertility.

   5 4 3 2 1

10. I wonder if our infertility problem is due to something I did in the past.

    5 4 3 2 1

11. My spouse makes me feel guilty about our problem.

    5 4 3 2 1

12. There are times when I blame my partner four our infertility.

    5 4 3 2 1

13. I feel I am being punished because of our infertility.

    5 4 3 2 1

14. Lately, I feel I am able to respond to my spouse sexually.

    5 4 3 2 1

(CONTINUED)

Answer:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Circle:	5	4	3	2	1

15. I feel sex is a duty, not a pleasure.

5 4 3 2 1

16. Since our infertility problem, I enjoy sexual relations with my spouse.

5 4 3 2 1

17. We have sexual relations for the purpose of trying to conceive.

5 4 3 2 1

18. Sometimes I feel like a "sex machine" programmed to have sex during the fertile period.

5 4 3 2 1

19. Impaired fertility has helped our sexual relationship.

5 4 3 2 1

20. Our inability to have a child has <u>increased</u> my desire for sexual relations.

5 4 3 2 1

21. Our inability to have a child has <u>decreased</u> my desire for sexual relations.

5 4 3 2 1

APPENDIX B

PERMISSION FOR USE OF JCS

PERMISSION IS HEREBY GRANTED TO

Phyllis De Haan

TO USE THE JALOWIEC COPING SCALE

IN A STUDY OR PROJECT

Anne Jalowiec

ANNE JALOWIEC, RN, PHD

LOYOLA UNIVERSITY OF CHICAGO

DATE: November 10, 1993

 Study # _____

JALOWIEC COPING SCALE

This questionnaire is about how you cope with stress and tension, and what you do to handle stressful situations. In particular, I am interested in how you have coped with the stress of:

_____

This questionnaire lists many different ways of coping with stress. Some people use a lot of different coping methods; some people use only a few.

You will be asked two questions about each different way of coping with stress:

Part A

How often have you used that coping method to handle the stress listed above?

For each coping method listed, circle one number in Part A to show how often you have used that method to cope with the stress listed above. The meaning of the numbers in Part A is as follows:

0 = never used
1 = seldom used
2 = sometimes used
3 = often used

Part B

If you have used that coping method, how helpful was it in dealing with that stress?

For each coping method that you have used, circle a number in Part B to show how helpful that method was in coping with the stress listed above. The meaning of the numbers in Part B is as follows:

0 = not helpful
1 = slightly helpful
2 = fairly helpful
3 = very helpful

If you did not use a particular coping method, then do not circle any number in Part B for that coping method.

COPING METHODS	Part A How often have you used each coping method?				Part B If you have used that coping method, how helpful was it?			
	Never Used	Seldom Used	Sometimes Used	Often Used	Not Helpful	Slightly Helpful	Fairly Helpful	Very Helpful
1. Worried about the problem	0	1	2	3	0	1	2	3
2. Hoped that things would get better	0	1	2	3	0	1	2	3
3. Ate or smoked more than usual	0	1	2	3	0	1	2	3
4. Thought out different ways to handle the situation	0	1	2	3	0	1	2	3
5. Told yourself that things could be much worse	0	1	2	3	0	1	2	3
6. Exercised or did some physical activity	0	1	2	3	0	1	2	3
7. Tried to get away from the problem for a while	0	1	2	3	0	1	2	3
8. Got mad and let off steam	0	1	2	3	0	1	2	3
9. Expected the worst that could happen	0	1	2	3	0	1	2	3
10. Tried to put the problem out of your mind and think of something else	0	1	2	3	0	1	2	3
11. Talked the problem over with family or friends	0	1	2	3	0	1	2	3
12. Accepted the situation because very little could be done	0	1	2	3	0	1	2	3
13. Tried to look at the problem objectively and see all sides	0	1	2	3	0	1	2	3
14. Daydreamed about a better life	0	1	2	3	0	1	2	3
15. Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)	0	1	2	3	0	1	2	3
16. Tried to keep the situation under control	0	1	2	3	0	1	2	3
17. Prayed or put your trust in God	0	1	2	3	0	1	2	3
18. Tried to get out of the situation	0	1	2	3	0	1	2	3
19. Kept your feelings to yourself	0	1	2	3	0	1	2	3
20. Told yourself that the problem was someone else's fault	0	1	2	3	0	1	2	3
21. Waited to see what would happen	0	1	2	3	0	1	2	3
22. Wanted to be alone to think things out	0	1	2	3	0	1	2	3
23. Resigned yourself to the situation because things looked hopeless	0	1	2	3	0	1	2	3

COPING METHODS	Part A How often have you used each coping method?				Part B If you have used that coping method, how helpful was it?			
	Never Used	Seldom Used	Sometimes Used	Often Used	Not Helpful	Slightly Helpful	Fairly Helpful	Very Helpful
24. Took out your tensions on someone else	0	1	2	3	0	1	2	3
25. Tried to change the situation	0	1	2	3	0	1	2	3
26. Used relaxation techniques	0	1	2	3	0	1	2	3
27. Tried to find out more about the problem	0	1	2	3	0	1	2	3
28. Slept more than usual	0	1	2	3	0	1	2	3
29. Tried to handle things one step at a time	0	1	2	3	0	1	2	3
30. Tried to keep your life as normal as possible and not let the problem interfere	0	1	2	3	0	1	2	3
31. Thought about how you had handled other problems in the past	0	1	2	3	0	1	2	3
32. Told yourself not to worry because everything would work out fine	0	1	2	3	0	1	2	3
33. Tried to work out a compromise	0	1	2	3	0	1	2	3
34. Took a drink to make yourself feel better	0	1	2	3	0	1	2	3
35. Let time take care of the problem	0	1	2	3	0	1	2	3
36. Tried to distract yourself by doing something that you enjoy	0	1	2	3	0	1	2	3
37. Told yourself that you could handle anything no matter how hard	0	1	2	3	0	1	2	3
38. Set up a plan of action	0	1	2	3	0	1	2	3
39. Tried to keep a sense of humor	0	1	2	3	0	1	2	3
40. Put off facing up to the problem	0	1	2	3	0	1	2	3
41. Tried to keep your feelings under control	0	1	2	3	0	1	2	3
42. Talked the problem over with someone who had been in a similar situation	0	1	2	3	0	1	2	3
43. Practiced in your mind what had to be done	0	1	2	3	0	1	2	3
44. Tried to keep busy	0	1	2	3	0	1	2	3
45. Learned something new in order to deal with the problem	0	1	2	3	0	1	2	3
46. Did something impulsive or risky that you would not usually do	0	1	2	3	0	1	2	3

COPING METHODS	Part A How often have you used each coping method?				Part B If you have used that coping method, how helpful was it?			
	Never Used	Seldom Used	Sometimes Used	Often Used	Not Helpful	Slightly Helpful	Fairly Helpful	Very Helpful
47. Thought about the good things in your life	0	1	2	3	0	1	2	3
48. Tried to ignore or avoid the problem	0	1	2	3	0	1	2	3
49. Compared yourself with other people who were in the same situation	0	1	2	3	0	1	2	3
50. Tried to think positively	0	1	2	3	0	1	2	3
51. Blamed yourself for getting into such a situation	0	1	2	3	0	1	2	3
52. Preferred to work things out yourself	0	1	2	3	0	1	2	3
53. Took medications to reduce tension	0	1	2	3	0	1	2	3
54. Tried to see the good side of the situation	0	1	2	3	0	1	2	3
55. Told yourself that this problem was really not that important	0	1	2	3	0	1	2	3
56. Avoided being with people	0	1	2	3	0	1	2	3
57. Tried to improve yourself in some way so you could handle the situation better	0	1	2	3	0	1	2	3
58. Wished that the problem would go away	0	1	2	3	0	1	2	3
59. Depended on others to help you out	0	1	2	3	0	1	2	3
60. Told yourself that you were just having some bad luck	0	1	2	3	0	1	2	3

If there are any other things you did to handle the stress mentioned at the beginning, that are not on this list, please write those coping methods in the spaces below. Then circle how often you have used each coping method, and how helpful each coping method has been.

61.	1	2	3	0	1	2	3
62.	1	2	3	0	1	2	3
63.	1	2	3	0	1	2	3

Revised 7/90

EIGHT COPING STYLES ON THE JALOWIEC COPING SCALE

1. Confrontive Coping Style: 10 items
   confront the situation, face up to the problem, constructive problem-solving

   4. Thought out different ways to handle the situation
   13. Tried to look at the problem objectively and see all sides
   16. Tried to keep the situation under control
   25. Tried to change the situation
   27. Tried to find out more about the problem
   29. Tried to handle things one step at a time
   33. Tried to work out a compromise
   38. Set up a plan of action
   43. Practiced in your mind what had to be done
   45. Learned something new in order to deal with the problem

2. Evasive Coping Style: 13 items
   evasive and avoidant activities used in coping with a situation

   7. Tried to get away from the problem for a while
   10. Tried to put the problem out of your mind and think of something else
   14. Daydreamed about a better life
   18. Tried to get out of the situation
   20. Told yourself that the problem was someone else's fault
   21. Waited to see what would happen
   28. Slept more than usual
   35. Let time take care of the problem
   40. Put off facing up to the problem
   48. Tried to ignore or avoid the problem
   55. Told yourself that this problem was really not that important
   56. Avoided being with people
   58. Wished that the problem would go away

3. Optimistic Coping Style: 9 items
   positive thinking, positive outlook, positive comparisons

   2. Hoped that things would get better
   5. Told yourself that things could be much worse
   30. Tried to keep your life as normal as possible and not let the problem interfere
   32. Told yourself not to worry because everything would probably work out fine
   39. Tried to keep a sense of humor
   47. Thought about the good things in your life
   49. Compared yourself with other people who were in the same situation
   50. Tried to think positively
   54. Tried to see the good side of the situation

4. Fatalistic Coping Style: 4 items
pessimism, hopelessness, feeling of little control over the situation
   9. Expected the worst that could happen
  12. Accepted the situation because very little could be done
  23. Resigned yourself to the situation because things looked hopeless
  60. Told yourself that you were just having some bad luck

5. Emotive Coping Style: 5 items
expressing and releasing emotions, ventilating feelings

   1. Worried about the problem
   8. Got mad and let off steam
  24. Took out your tensions on someone else
  46. Did something impulsive or risky that you would not usually do
  51. Blamed yourself for getting into such a situation

6. Palliative Coping Style: 7 items
trying to reduce or control distress by making the person feel better

   3. Ate or smoked more than usual
   6. Exercised or did some physical activity
  26. Used relaxation techniques
  34. Took a drink to make yourself feel better
  36. Tried to distract yourself by doing something that you enjoy
  44. Tried to keep busy
  53. Took medications to reduce tension

7. Supportant Coping Style: 5 items
using support systems: personal, professional, spiritual

  11. Talked the problem over with family or friends
  15. Talked the problem over with a professional person (such as a doctor, nurse, minister, teacher, counselor)
  17. Prayed or put your trust in God
  42. Talked the problem over with people who had been in a similar situation
  59. Depended on others to help you out

8. Self-reliant Coping Style: 7 items
depending on yourself rather than on others in dealing with the situation

  19. Kept your feelings to yourself
  22. Wanted to be alone to think thing out
  31. Thought about how you had handled other problems in the past
  37. Told yourself that you could handle anything no matter how hard
  41. Tried to keep your feelings under control
  52. Preferred to work things out yourself
  57. Tried to improve yourself in some way so you could handle the situation better

APPENDIX C

MICHIGAN STATE
UNIVERSITY

June 9, 1994

MEMORANDUM

TO: Rachel Schiffman, Ph.D.
College of Nursing

FROM: Bruce H. Drukker, M.D.
Professor and Chairperson

RE: Research Proposal - Coping With Infertility

The above referenced project will be conducted by Ms. Phyllis DeHaan, Nurse Manager for the Department of Obstetrics, Gynecology and Reproductive Biology and a Master's candidate in the College of Nursing. Ms. DeHaan is authorized to utilize patients seeking infertility services in the Department of Obstetrics, Gynecology and Reproductive Biology Faculty Group Practice for this project. The project, however, cannot be undertaken until institutional review has given its approval.

BHD/msm

DEPARTMENT OF
OBSTETRICS, GYNECOLOGY & REPRODUCTIVE BIOLOGY

Michigan State University
B316 Clinical Center
East Lansing, Michigan
48824-1315

Phone: 517 / 353-4740
FAX: 517 / 355-8341

MICHIGAN STATE
UNIVERSITY

June 29, 1994

TO: Phyllis M. De Haan
2434 Dobie Road
Mason, MI 48854

RE: IRB#: 94-297
TITLE: COPING WITH INFERTILITY
REVISION REQUESTED: N/A
CATEGORY: 1-C
APPROVAL DATE: 06/28/94

The University Committee on Research Involving Human Subjects'(UCRIHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project including any revision listed above.

RENEWAL: UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must use the green renewal form (enclosed with the original approval letter or when a project is renewed) to seek updated certification. There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

REVISIONS: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB # and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.

PROBLEMS/ CHANGES: Should either of the following arise during the course of the work, investigators must notify UCRIHS promptly: (1) problems (unexpected side effects, complaints, etc.) involving human subjects or (2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of any future help, please do not hesitate to contact us at (517)355-2180 or FAX (517)336-1171.

Sincerely,

David E. Wright, Ph.D.
UCRIHS Chair

DEW:pjm

cc: Rachel F. Schiffman

OFFICE OF
RESEARCH
AND
GRADUATE
STUDIES
University Committee on
Research Involving
Human Subjects
(UCRIHS)
Michigan State University
225 Administration Building
East Lansing, Michigan
48824-1046
517/355-2180
FAX 517/336-1171

July 21, 1994

Dear Patient,

I am a Registered Nurse working in the Department of OB/GYN and Reproductive Endocrinology at Michigan State University. I am also a Graduate Student in the College of Nursing at Michigan State University. I am studying the impact of infertility on infertile women and ways in which these women cope with their infertility. How infertility affects you and how you cope is very important to me.

Information from you and other infertile women will help me to learn more about the many emotional aspects of infertility. Your responses to the questions will be anonymous and you will remain anonymous throughout the study. There will be no way for me to identify you individually with your responses.

You are being requested to complete two questionnaires, the Infertility Questionnaire, and the Jalowiec Coping Scale. There are no right or wrong answers to the questions. You do not have to respond to any item on the questionnaire that you do not want to answer. Your continued or future care does NOT depend on your taking part in this survey. PARTICIPATION IS VOLUNTARY. You indicate your voluntary agreement to participate in this study by completing and returning these questionnaires.

The information you provide will increase the knowledge base regarding the emotional aspects of infertility. Your honest responses will help in completing this project. Completing the questionnaires will take about 15 minutes of your time. Please return the questionnaires in the enclosed postage paid envelope by August 30, 1994.

If the completion of this questionnaire causes some unforeseen concerns to you, please call Dr. Sauer at 353-4740, or 483-9047.

Thank you for your participation.

Sincerely,

Phyllis DeHaan, RNC

DEMOGRAPHICS

How old were you on your last birthday?

Race: 1=white, 2=black, 3=hispanic, 4=oriental, 5=American Indian, 6=other _____

How many years of school have you completed? _____

Occupation (job title): _____

Marital Status: 1=single, 2=married, 3=separated/divorced, 4=widowed _____

How long have you been trying to achieve a pregnancy? _____

How many Metrodin or Pergonal cycles have you tried including your current treatment course?
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, more than 10