

# Illness Cognitions, Anxiety, and Depression in Men and Women Undergoing Fertility Treatments: A Dyadic Approach

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ABSTRACT

**Background:** Emotional response to infertility is mediated by numerous interrelated psychological variables such as personality, health perceptions, cognitive appraisals, coping, and social support. While men and women respond to infertility differently, illness cognitions are a vital component of their emotional adjustment. The aim of this study is to compare the infertile men and women undergoing fertility treatments on perceived distress, helplessness, acceptance, benefits, anxiety, and depression. **Materials and Methods:** Eighty-one infertile couples, undergoing intrauterine insemination participated in the study. They were assessed on the presence of infertility distress using the fertility problem inventory, for psychiatric morbidity using the Mini International Neuropsychiatric Interview, for affective disturbances using the Hamilton Anxiety and Depression scales, and for illness cognitions using the Illness Cognition Questionnaire. **Statistical Analysis:** Data are analyzed using SPSS version 15. The paired sample *t*-test is performed for assessing differences on normally distributed data. The Wilcoxon Signed-Rank test is performed for assessing differences in medians obtained on data that was skewed. **Results and Discussion:** Infertile women (wives) were more emotionally distressed, anxious, and depressed than men (husbands). Gender-wise differences were found for perceptions of helplessness and acceptance of infertility. Infertility was perceived to be a nonbeneficial event for both partners investigated. **Conclusion:** Negative cognitions and affective disturbances may contribute to higher treatment burden in couples seeking-assisted conception. The present study suggests that psychosocial intervention for couples plays a central role and should be integrated within the conventional treatments for infertility.

**KEYWORDS:** *Anxiety, appraisal, assisted conception, burden, cognition, couple, depression, Infertility specific stress, men, treatments, women*

## INTRODUCTION

One of the earliest definitions of “cognition” defines it as a mental process of knowing, by which internal and external sensory input is transformed, reduced, elaborated, stored, recovered, and used.<sup>[1]</sup> It comprises all activities related to perceiving, thinking, remembering, planning, and making choices in daily lives. “Illness cognitions” are terms used to describe a range of cognitive processes underlying the human behavior in response to the illness-related information. Illness cognitions exist in each person, in the presence of physical illness and even in its absence. The self-regulatory model of illness perceptions proposes

that many features of one’s medical illness, namely its label, identity, short-term and long-term consequences, temporal course, causes, curability, and controllability affects the way people cope and recover from it.<sup>[2]</sup> From this analogy, psychological distress due to a medical illness is higher if it is perceived as dangerous, life-changing, threatening, chronic, continuous, and

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incurable. There also exists a close association between illness cognitions and other health-related behaviors such as treatment-seeking, self-care, lifestyle habits, compliance, and adherence.<sup>[3]</sup> The complex and reciprocal interplay of personality characteristics, emotions, and cognitions governs the personal representations of health and illness.<sup>[4]</sup> For instance, if a person with a fairly stable personality believes that an illness is caused by identifiable factors, is curable, has shorter duration, then it has relatively minor psychological consequences for him/her.

Illness perceptions and cognitions are also known to be independent contributors to disease management, morbidity, well-being, functional recovery, and comorbid psychiatric disorders in individuals with acute and chronic disease.<sup>[5-9]</sup> Numerous studies have highlighted the role of cognitions in coping with acute and chronic medical illnesses.<sup>[10]</sup>

In the light of these perspectives, it is worth hypothesizing that an individual's cognitive appraisal with regard to "being childless" considerably impacts the magnitude of perceived stress. Review supports that intrusive ideation increases distress in infertility.<sup>[11]</sup> Furthermore, the emotional struggles of infertile couples often elevate when treatments span over several years, and they endure undesirable treatment outcomes over and over again. This may be the reason that distress gradually elevates after the third year of fertility treatment.<sup>[12,13]</sup> Research on stress and coping in infertility reveals that core cognitions associated with this condition are unpredictability, negativity, uncontrollability, and ambiguity.<sup>[14]</sup> Furthermore, studies accentuate the importance of cognitions such as personal threat, powerlessness, helplessness, hopelessness, and nonacceptance in infertility.

Cognitions of powerlessness in infertility stem from an unfavorable diagnostic labels such as severe sperm defects,<sup>[15]</sup> premature ovarian failure,<sup>[16]</sup> treatment outcomes like limited success rates per cycle, poor or nonresponse,<sup>[17]</sup> side-effects like ovarian hyperstimulation syndrome,<sup>[18]</sup> nonfulfilment of social role, stigma, discrimination, exclusion from entitled family roles, and kinships and auspicious rituals.<sup>[19,20]</sup> Feelings of uncontrollability develop as patients experience a loss of control over several aspects such as one's own body (in controlled ovarian hyperstimulation cycles and otherwise), sexuality, intimate lives, loss of privacy, and an increased sense of being invaded.<sup>[21,22]</sup> Moreover, feelings of powerlessness and uncontrollability worsen with elevating distress and psychopathology further leading to a poorer psychological adjustment in women during *in vitro*

fertilization (IVF).<sup>[23]</sup> Men's psychological adjustment also gets affected overtime as it is indirectly related to their spouse's emotional well-being.<sup>[24]</sup> Research also reports that "perception of heightened threat and uncontrollability" can stem due to three causes.<sup>[25]</sup> Firstly, if stress keeps on increasing it will naturally cause a decline in one's the psychological endurance over time. Secondly despite best efforts, if the desired results are not attained it leads to frustrations and disappointments. Moreover, finally, uncontrollability arises when random rather than predictable and planned course of events affect the pregnancy outcomes.

Data from the latest investigation reflects that "hope" is a mental state that protects women from getting depressed.<sup>[26]</sup> Furthermore, women who receive social support and patient-centric professional support from infertility staff are emotionally stronger even in times of high stress.<sup>[27]</sup> Hopelessness develops overtime in women and is governed by two factors, namely chronic treatment failures and increasing duration of infertility.<sup>[26]</sup> It is also documented that feelings of helplessness coupled with hopelessness are highest around events such as poor treatment response, abandoned cycles, failed fertilization, miscarriages, repeated pregnancy loss, and other complications.<sup>[28,29]</sup> In addition, during the pretreatment phases, helplessness serves as a vulnerability factor whereas acceptance and hope serve as protective factors against psychological distress in infertile women undergoing cycles of IVF/intracytoplasmic sperm injection.<sup>[30,31]</sup> Hopelessness is found to be more prevalent in infertile women with low educational achievement, uneducated spouse, and unemployment and is not related to factors such as the age of patients, length of marital duration, and cause of infertility.<sup>[27,32,33]</sup>

Theoretically speaking, "learned helplessness" is another related psychological phenomenon that may explain why distressed patients prematurely drop out from fertility treatments. Learned helplessness<sup>[34]</sup> is "a mental state in which an organism who is forced to bear aversive or unpleasant stimuli, becomes unable or unwilling to avoid subsequent encounters with those stimuli, even if they are "escapable," presumably because he has learned that it cannot control the situation."<sup>[35]</sup>

Acceptance of infertility as a medical and social condition is a complex process rather than a stage-specific event. It evolves gradually, over several years and course of events faced by childless couples.<sup>[36]</sup> Acceptance in those who face less (<two cycles of IVFs per year) or high amounts of treatment failure (>seven cycles of failed IVFs per year) is usually stable. It fluctuates in those who face moderate

amount of IVF failure (four cycles of conventional and aggressive treatment failures per year) since their mind set dwindles between periods of optimism and despair.<sup>[37]</sup> The later researcher also highlights that acceptance and adjustment is not associated with age of women and the duration of infertility or treatments.

In addition to these facts, it is believed that health beliefs and illness cognitions serve as important predictors of “coping with infertility.” Evidences support that positive mental states such as acknowledging fertility struggles, realistic optimism, emotion-focused efforts, active problem-solving, grief resolution, mindful compassion, empathetic partner communication, and acceptance are associated with constructive coping, healthy, and speedy recovery from infertility crisis.<sup>[38-42]</sup> On the other hand, responses such as denial, blaming, and active or passive avoidance are associated with negative psychological health.<sup>[18-22]</sup>

Despite these evidences on the importance of “cognitive beliefs and appraisals in infertility,” limited Indian studies have ventured into this area. The emotional trauma and grief of treatment repeaters, particularly in “pronatalic Indian setups,” are often neglected.<sup>[15,16,20]</sup> Accordingly, as cited in Western literature one cannot rule out the possibility that even in our kind of setups “psychological factors” elevate overall dropouts from fertility treatments.<sup>[43]</sup> Research also supports that critical events (such as repeated IVF failures) is known to be associated with adverse beliefs such as “infertility is chronic, has adverse consequences, and is uncontrollable,” and this lowers patient’s confidence in its treatment efficacy.<sup>[44]</sup>

Moreover, the physical and emotional burden are reported to be among the top three causes of treatment discontinuation from medically assisted reproductive treatments, even in those having a favorable diagnosis.<sup>[44-46]</sup>

With these considerations, the present research was planned to explore the role of illness cognitions in distressed couples with infertility as there have been limited studies highlighting the importance of such an exploration. In addition, the rationale of this study was to compare men and women on their illness perceptions as these can serve as vital agents for planning psychological interventions for them. The aim of this study was to compare the infertile men and women undergoing fertility treatments on levels of experienced helplessness, acceptance, perceived benefits, anxiety, and depression.

## MATERIALS AND METHODS

### Study participants

This study is conducted during July 2013–August 2014 and is a part of a larger project which on the effectiveness of psychotherapy for distressed couples with infertility. The principal investigator screened 181 couples for inclusion in the larger project of which a pool of 81 couples was enrolled in this particular investigation using purposive sampling. The participants were screened using fertility problem inventory (FPI)<sup>[47]</sup> and Mini International Neuropsychiatric Interview (MINI Version 5.00).<sup>[48]</sup>

### Inclusion criteria for this study

Both husband and wife being highly distressed due to infertility (raw score of 167 or above on FPI as assessed in females and of 147 or above on FPI as assessed in males<sup>[47]</sup>). None of them met any criteria for major psychiatric illness (as assessed by MINI).

### Excluded participants

Couples who were nondistressed or moderately distressed (44 in number) or nonwilling to participate (50 in number) were excluded from the study. Further, six of 181 couples originally screened were excluded from research as they were found to be suffering from a major psychiatric illness, and thus referred to Department of Psychiatry for careful clinical management.

### Ethical statement

This study was conducted after its review and clearance by the Institutional Ethics Committee. An informed written consent was taken by the participants before the conduct of this work and the rights of information, confidentiality, and withdrawal from the study was reserved. All ethical guidelines (in accordance with the Declaration of Helsinki) were followed while the conduct of this work.

### Data collection

The study participants were administered the Kuppuswamy’s revised socioeconomic scale for collecting sociodemographic information.<sup>[49]</sup> Clinical details were collected using a structured interview schedule devised by the investigator. Finally, the psychological questionnaires were administered to them. These included the Hamilton anxiety and depression scales,<sup>[50,51]</sup> and the “Illness Cognition Questionnaire (ICQ)”<sup>[52]</sup> administered by men and women.

### Description of the psychological measures

The Hamilton scales are clinician-rated gold standard scales for assessing psychic anxiety and depressive features, respectively. For the Hamilton anxiety scale, the preestablished cutoff score is 17 which indicate mild

severity. The internal consistency reliability ranges from 0.77 to 0.81 and test-retest reliability is 0.96. This scale also shows good construct validity and factorial validity and showing statistically significant relationships with self-report measures of anxiety variables for adults. The internal consistency reliability of different versions of Hamilton depression scale ranges from 0.48 to 0.92, and inter-rater reliability is 0.60 for the 21-item scale. The validity of Hamilton depression scale is reported to be ranging from 0.65 to 0.90 with Montgomery–Asberg depression scale. For the Hamilton depression scale, the preestablished cutoff score is eight. The ICQ<sup>[52]</sup> assesses cognitions such as helplessness, acceptance, and benefits perceived by patients with chronic medical diseases. The original version of this questionnaire was administered in this study. The principal investigator assisted the participants in understanding and answering the questionnaire within the context of infertility. This measure has a preestablished cutoff for helplessness as 14. Cronbach’s alpha of this scale ranges from 0.84 to 0.91, and test-retest reliability is 0.67. Evidence has also been found for its good concurrent and predictive validity.

### Statistical analysis

Data are entered and analyzed using SPSS (version 15, September 2007, SPSS Inc., Chicago, IL, USA). The descriptive data analysis is performed using means, medians, quartiles, frequencies, and percentages. The paired sample *t*-test is performed for assessing the significance of the difference between men (husbands) and women (wives) on infertility specific stress, anxiety, depression, cognitions of helplessness, and cognitions of acceptance. The Wilcoxon signed-rank test is carried out for assessing the significance of the difference in medians obtained in men and women on perceived benefits since this variable was found to be skewed. The value of  $P < 0.05$  is considered as statistically significant.

## RESULTS

Table 1 presents the results of descriptive data analysis. The table shows that the study participants were middle-aged couples, most of which were educated up to high school. The medians for the duration of infertility were 4 years. The median for the duration of fertility treatment is 3 years, within which 43% had a history of undergoing 6–8 cycles of ovulation induction (OI) treatments and 58% had histories of unsuccessful intrauterine inseminations (IUIs). 28% of the participants were diagnosed with combined factor infertility.

Table 2 presents the results for paired sample *t*-test carried out for assessing the significance of the difference between men and women on infertility

**Table 1: Descriptive data**

Characteristics	Frequencies
Age (mean)	
Men	29 (3.5)
Women	35 (4.3)
Education	
Men (%)	
10 <sup>th</sup>	3 (4)
12 <sup>th</sup>	40 (49)
Graduate	29 (36)
Postgraduate	9 (11)
Women (%)	
10 <sup>th</sup>	5 (6)
12 <sup>th</sup>	35 (43)
Graduate	37 (47)
Postgraduate	5 (6)
Duration of infertility (median with 1 <sup>st</sup> and 3 <sup>rd</sup> quartile)	4 (2, 5)
Years since taking fertility treatments (median with 1 <sup>st</sup> and 3 <sup>rd</sup> quartile)	3 (1, 4)
Infertility type (%)	
Female factor	20 (24)
Male factor	14 (17)
Combined factor	38 (28)
Unexplained	10 (12)
Past history of number of cycles of ovulation induction undergone (%)	
0-3	16 (20)
4-6	30 (37)
6-8	35 (43)
Past history of number of cycles of intrauterine insemination undergone (%)	
None	32 (40)
1-3	47 (58)
4-5	2 (2)
Past cycles of <i>in vitro</i> -fertilization (%)	
None	78 (96)
1-2	3 (4)

specific stress. Data reveals that women report greater stress, anxiety, and depressive features in comparison to the men. Furthermore, helplessness is higher in women than in men. In comparison to men, the women report lower acceptance of their fertility struggles and the status of “being infertile as a couple.”

Table 3 presents the results for the difference in medians obtained in men and women on perceived benefits. Table 3 shows no differences in scores obtained among men and women, and thus data on this variable were not subjected to any further statistical analysis. Furthermore, low scores on this measure reflect that neither men nor the women perceived that being infertile has benefitted them in any manner.

Table 4 presents item-wise frequency counts given by the participants on various questions of the ICQ.

**Table 2: Paired sample *t*-test for the significance of difference between male and female partners on infertility specific stress**

Variable name	Mean (SD)		Paired difference	95% CI	P
	Women (wives)	Men (husbands)			
Infertility specific stress	182 (15.33)	175 (18.50)	7 (20.1)	2.60-11.47	0.002
Anxiety	14.93 (6.71)	9.8 (6.0)	5.11 (7.22)	3.51-6.70	<0.001
Depression	11.59 (6.65)	7.6 (5.76)	3.95 (7.58)	2.27-5.62	<0.001
Cognitions of helplessness	19.11 (3.49)	17.80 (4.14)	1.30 (4.45)	0.32-2.29	0.01
Cognitions of acceptance	7.85 (1.68)	8.69 (2.41)	-0.83 (2.98)	-1.49--0.17	0.01

SD=Standard deviation, CI=Confidence interval

**Table 3: Significance of median differences between men and women on perceived benefits**

Variables	Male, median (1 <sup>st</sup> quartile, 3 <sup>rd</sup> quartile)	Female, median (1 <sup>st</sup> quartile, 3 <sup>rd</sup> quartile)	95% CI for median difference
Perceived benefits of being a childless couple	6 (6, 8)	6 (6, 8)	-

CI=Confidence interval

## DISCUSSION

This study aims to investigate the presence of illness cognitions in distressed couples undergoing fertility treatments and compare the men (husbands) and women (wives) on domains of anxiety, depression, helplessness, acceptance, and perceived benefits.

The results of the present investigation depict that infertile women report more distress while taking fertility treatments than the infertile men. Within the couple as a dyad, husband and wife differ clinically and statistically on levels of stress, anxiety, and depression. Furthermore, women have subclinical levels of anxiety and mild depressive features. Whereas, the men report subclinical levels of both anxiety and depression. These facts clearly suggest that the emotional strain is more on the women in comparison to their husbands, and that the men are indirectly affected by treatment-related stressors. Men suffer more in the context of their wife's distress in context of their wife's suffering.<sup>[24]</sup> These findings are in coherence with other studies.<sup>[53-56]</sup>

A comparison of the profile of cognitions associated with infertility depicts that women report helplessness more often than the men. Fifty-two percentage of the female participants in this study said that infertility makes them feel helpless, whereas 43% of men reported the same. Data of this exploration also shows that one in every two women and one in every three men undergoing IUI feel that infertility regimens have taken over their normal daily routines. Furthermore, both men and women equally felt a sense of personal inadequacy. In the verbatim interviews with patient's helplessness is reported within the context of "failed attempts at conceptions in nature cycles," "uncertainties related to success of treatments," their outcomes (endless attempts, physical side-effects, and normality of the child

conceived), and "the frustrated wish for a child." Patients report that "trying hard is not enough; one needs good fortune, money, and patience too." Similar outcomes have also been reported by other investigations.<sup>[28,30,57]</sup>

Acceptance is another key cognition that is closely related to coping patterns, and was thus explored in this study. Acceptance refers to the acknowledgment and assent to a negative situation that helps individuals appraise stressors in a realistic and effective manner. Acceptance of the diagnosis and of involuntary childlessness on the whole is found to be lower in women than men. This finding was in conjunction with other studies,<sup>[36,37]</sup> which urge that patients with a history of moderate treatment failure in OI and IUI (<4 cycles per year) tend to hope for the success of pregnancy either spontaneously or with more aggressive treatments. Patients go on to explain that "they have not given up on their faith in God." Most of them adhere to the belief that "as of now they may be childless, but one day they shall be blessed with a baby."

In addition, 67% of the women, whereas 43% of men reported that they cannot handle the consequences of infertility. These include the decisions of how much treatment is needed, high financial cost of repeated cycles, distressing investigations (Trans-vaginal USG and Semen tests), interpersonal conflicts due to demeaning remarks and intrusive questioning of family members, in-laws, peers, and the sociocultural bias held against them. About 10% of the participants have made attempts to adjust to a child-free lifestyle and accept limitations associated with subfertility by moving on to their career goals. These patients report that "they have tried as much as they could and find it too much to tolerate. For the time being, they have decided to try one last time and then take a break from treatments by focusing on other things in life."

**Table 4: Item-wise frequency counts on various questions of the illness cognition questionnaire answered by infertile females and males**

	Response categories (%)*	
	Not at all/somewhat	A lot of time/completely
Cognitions of helplessness		
Because of infertility, I miss the things I like to do most		
Females	27	73
Males	45	55
My infertility controls my life		
Females	11	89
Males	29	71
My infertility makes me feel useless at times		
Females	2	98
Males	22	78
My infertility prevents me from doing what I would really like to do		
Females	28	72
Males	35	65
My infertility limits me in everything that is important to me		
Females	36	64
Males	45	55
My infertility frequently makes me feel helpless		
Females	8	92
Males	14	86
Cognitions of acceptance		
I can handle the problems related to my infertility		
Females	98	2
Males	45	55
I have learned to live with my infertility		
Females	96	4
Males	98	2
I have learned to accept the limitations imposed by my infertility		
Females	100	0
Males	98	2
I can accept my infertility well		
Females	89	11
Males	97	3
I think I can handle the problems related to my infertility, even if it gets worse		
Females	95	5
Males	95	5
I can cope effectively with my infertility		
Females	97	3
Males	87	13
Perceived benefits		
Dealing with my infertility has made me a stronger person		
Females	99	1
Males	96	4
I have learned a great deal from my infertility		
Females	100	0
Males	100	0
My infertility had made life more precious to me		
Females	99	1
Males	99	1
Looking back, I can see that my infertility has also brought about some positive changes in my life		

Contd...

Table 4: Contd...

	Response categories (%)*	
	Not at all/somewhat	A lot of time/completely
Females	99	1
Males	100	0
My infertility has helped me realize what is important in life		
Females	89	11
Males	95	5
My infertility has taught me to enjoy the moment more		
Females	100	0
Males	97	3

\*1=Not at all, 2=Somewhat, 3=Lot of time, 4=Completely

The present study reveals that one in every eight women and one in every five men report of having coping problems. A small number and barely 5% of study participants, irrespective of gender report that they would be able to deal and handle their issues even if their conception difficulties worsened. Coping issues were predominantly related to “maintaining emotional stability, composure, tackling the identity crisis, sexual interest, and pleasure; marital well-being, handling unsolicited questioning by others, difficulty in guarding their private matters, protecting oneself from social politicization of reproductive loss and sexual inadequacy; and guarding oneself from magic-religious social beliefs and cures, stigma, social alienation, and exclusion.”

A comparison of the profile on the measure of perceived benefits reveals no differences in men and women. A large number of participants report coping problems in this study. Nearly, all men and women (90% of them) felt that they did not emerge as a stronger person after facing and coping with infertility crisis. In addition to this, 99%, i. e., 80 couples who participated in the research reported that infertility did not bring about any positive change in their life. These results are supported by previous investigations conducted in India, that brings forth the relevance of psychosocial counseling for not only the distressed women but also for the men in Indian setups.<sup>[15,16,20]</sup>

This study highlights certain glaring psychological issues faced by infertile couples coming for treatments. The present study purports that high distress coupled with helplessness and low acceptance in infertile women makes them exceedingly vulnerable. This may place the women (wives) more at risk of deteriorating mental illness than their better halves. Theoretically, low acceptance also makes the women more likely to experience unresolved grief.<sup>[34]</sup>

Powerlessness over the infertility situation may also be attributed to an inability to embrace events the way “as they are” and recreate life around other meaningful

life goals. The constant struggle for “being someone else or having some other kind of life” increases the dissatisfaction from present living and sense of self.<sup>[58]</sup> Studies reveal that in extreme cases of infertility distress, the person moves toward an unhealthy wish for a child wherein he/she experiences massive pressures for conception, demands a child at any cost, feels that having a child is the only success in their lives, and insists for repeated invasive high-risk treatments.<sup>[59]</sup> Whereas, in the same situation, a healthy wish for a child reflects true psychological acceptance which can be transformative. A “healthy wish for a child” is when couples perceive moderate pressures for conception, express hesitancy for invasive treatments, and in the case of renunciation of the wish, these couples experience distress but at the same time they tend to readjust toward a power-balanced doctor–patient relationship.<sup>[59]</sup> When true acceptance permeates through one’s mind, it makes radical changes in the way patients perceive and cope with their problems.<sup>[60,61]</sup> This does not denote that one has to “swallow the hard truth or the worst possible outcome.” Rather, it means that the patients can deal with the low-control situations by developing an ability to “take reality for what it is,” having a realistic hope, regulate emotions, find workable solutions toward solvable aspects, and develop resilience toward unsolvable issues related to their infertility experience.<sup>[60,61]</sup> Often this has been referred to as “radical acceptance,” and this has been known to set individuals free from any trauma, be it physical or psychological.<sup>[61]</sup> Research suggests that such approach-oriented ways of coping (including a balance between problem-solving, emotional processing, and expression) are related to psychological well-being.<sup>[14,24,58,62-65]</sup> This relates to a coping pattern in which one becomes mindfully aware of life, tries to slow down, and resonate with enjoyable moments of life, rather than rush from one thing to the next. The idea is to apply tenets of positive psychology by replacing learnt helplessness with learnt optimism even in times of high distress since negative appraisals

are inversely related to psychosocial well-being.<sup>[31,34,65,66]</sup> Thus, psychosocial management of infertile patients should focus on effective stress management and cognitive behavioral coping as these predict infertility distress at all levels of fertility treatments.<sup>[67]</sup> In this light, literature also supports that cognitive behavior therapy approaches can be applied as these effectively focus on positive reappraisals, reduce helplessness, and depression in infertility.<sup>[68-72]</sup>

Psychologists postulate that “that chronicity of a disease effects personal distress, coping, and depression rather than the mere diagnosis of it.”<sup>[10]</sup> Comparative research on the psychological impact of infertility and other medical conditions reveals that infertility specific distress has serious consequences. It is comparable to the distress experienced in chronic medical conditions such as cancer, hypertension, and cardiac diseases but it is less severe to that experienced in chronic pain and HIV.<sup>[73]</sup> It is also believed that “internal, stable, and controllable cognitive attributions” to one’s medical condition is associated with positive psychological adjustment and coping. Psychological avoidance and resistance are correlated with uncertainty, thus impeding the functional impairment in chronic medical conditions.<sup>[74]</sup> Accordingly, further studies may expand the scope of the present work by investigating the differences in illness cognitions and psychological morbidity in infertility versus other chronic medical conditions using a multiple comparison-group design.

The limitations of this research are that it was an uncontrolled trial and captured selective information and specific cognitive variables related to distress in infertile couples. Moreover, cultural-specific elements of illness beliefs may have been missed in our cross-sectional research as the English version of original ICQ was used. The future studies can plan to implement a qualitative investigation to understand the “disease identity” of infertile patients in the Indian scenario. Yet, the restricted findings of this study are valuable as it became a foreground for developing psychotherapy module for managing distress in couples with infertility at the study site.

## CONCLUSION

Human minds are active and effective problem solvers. The psychological model of coping suggests that illness cognitions predict emotional well-being and health behaviors. Thus, coping with infertility is crucially important during treatment times, particularly when the conception related stressors begin to elude one’s health.

The findings from this study suggest that when examining intracouple dynamics, the women (wives) report greater distress, anxiety, and depressive symptoms

than the men (husbands). In men, subclinical depressive and anxiety features are more common. Coping problems are found in both partners of the couple. Helplessness and poor acceptance are more in women than men. Within Indian setups, neither men nor women believe that infertility benefits them in any way. All of these psychological factors may contribute to higher treatment burden in patients seeking assisted conception. Thus, psychosocial care for couples plays a centrally important role and should be integrated within the conventional treatment pathway.

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## Conflicts of interest

There are no conflicts of interest.

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