Case Report

Outcomes of Structured Psychotherapy for Emotional Adjustment in a Childless Couple diagnosed with Recurrent Pregnancy Loss: A Unique Investigation

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Abstract

Losing a much-awaited pregnancy and an unborn child, time and again is known to be a painful experience in recurrent miscarriage or pregnancy loss (RPL). Literature on psychological consequences of RPL is abundant. Nonetheless, application of psychological intervention in RPL remains to be an overlooked area. Using a repeated measures design and standardized psychological measures, this case study assessed the outcomes of mindfulness-based therapy administered with routine fertility treatment in a couple with the history of recurrent miscarriages and secondary infertility. Data analysis was done using clinically significant change and analysis of graphic trends. Psychotherapy helped the couple initiate a meaningful discourse with the stress following miscarriage, uncertainty of pregnancy, and fertility-related emotional struggles by mindfully transforming stressors into less painful experiences. Control studies on applications of such therapies are needed to provide definitive answers to "what works, for whom, when, and how," with distressed patients experiencing RPL.

Keywords: *Case study, counseling, couple, emotional distress, infertility, mindfulness, psychotherapy, recurrent miscarriages*

Introduction

Recurrent miscarriage or pregnancy loss (RPL) is experienced by couples when two or more miscarriages occur before the pregnancies reach 20 weeks.[1] It is known to be a distressing condition as several cases have uncertain etiology.[1] The psychological consequence and implications of repeated miscarriages are well acknowledged.[1] Studies have emphasized on the abortogenic effects of high stress on the hypothalamic–pituitary–adrenal axis, particularly during early gestation.[2] Evidences on psychoneuroimmunological causes behind RPL suggests that emotional grief, guilt, and distress contributes to alterations in cortisol, NK cell activity, CD3+, CD8+, CD56+, T cells, Th1 and Th2 helper cells, uterine receptivity, and progesterone-induced blocking factor mechanisms, thus dwindling the fate of pregnancy.[1,3,4] Research substantiates that depression, state or trait anxiety, personal and social stress, grief, relational conflict, poor psychological adjustment, and marital distress are consequences of RPL.[5] In addition, 41% of women experience high stress and affective disturbances in RPL and these rates are comparable to a typical psychiatric population.[6,7] Evidence-based guidelines for RPL recommend couple-based psychological care for patients as psychological support is known to cause two-to-four-fold reduction in miscarriage and improved live birth rates.[8]

While there are some evidences in the literature on the benefits of psychotherapy in RPL,[5,9,10] no such research has been reported from the Indian context. This case report is the first of its kind which makes a new attempt to document the outcomes of structured

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psychological intervention administered on a couple experiencing RPL in the fertility clinic setup at a time when they were undergoing cycles of intrauterine insemination.

Case Report

Background fertility history

The index couple was a 38-year-old male (with mild oligospermia) and 32-year-old female (with Poly Cystic Ovarian Disease) belonging to the upper middle class, residing in a nuclear urban family setup, diagnosed with secondary infertility with secondary infertility and RPL. The couple were married and trying to conceive since 8 years. The couple had an obstetric history of two spontaneous conceptions in 2009 and 2011, and one *in vitro* fertilization (IVF) conception in 2014, all of which were followed by reduced cardiac activity in the fetus and spontaneous miscarriages within 6 weeks of gestation. They were undergoing assisted reproductive treatments for the past 2 years and had a history of one abandoned IVF cycle (poor response) and one successful IVF (antagonist protocol) in 2013. Persistent genetic anomalies identified (factor V Leiden Mutation) were identified as a possible cause leading to RPL. At present, after their detailed investigations, the couple was keen for IUI. The fertility experts planned the couple for treatments with heparin and aspirin in view of RPL. In addition, owing to high stress in her, she was referred by infertility staff for the study. Ethical guidelines (such as institutional approval, written informed consent, privacy of records, confidentiality, the right to withdraw from the study, and finally the use of data strictly for research purpose and benefits of others with RPL) were maintained throughout the study. It was a part of preliminary work for a WHO-registered randomized controlled trial (RCT) on effectiveness of psychotherapy in infertility (REF/2014/05/006991).

Detailed psychological consultation

The couple were seen by a Licensed Clinical Psychologist who was a trained personnel (in basic aspects of infertility, ART and reproductive psychology), functioning as a full-time doctoral scholar at the study site. In intake interview with the wife, her symptoms were suggestive of adjustment disorder (with gradual onset for the past 1.5 years), characterized by mixed affective disturbances, high-infertility-related distress-related coping inabilities, sleep disturbances, labile mood, GI disturbances, tension headaches, palpitations, ruminations, worries, occasional crying spells, bodily preoccupation, and guilt that peaked during premenstrual and menstrual time. The husband's history revealed nonpervasive and subclinical depressive symptoms. His history was suggestive of mild-moderate fertility-related distress and maladaptive coping strategies such as avoidance and disengagement. The couple's history was not suggestive of morbid grief, marital discord, or other psychological morbidity.

Psychological assessments

To evaluate the outcomes of psychotherapy, the couple was further assessed using a repeated measures design, using the scales those scores have been summarized in Figures 1-3.

Psychotherapy module

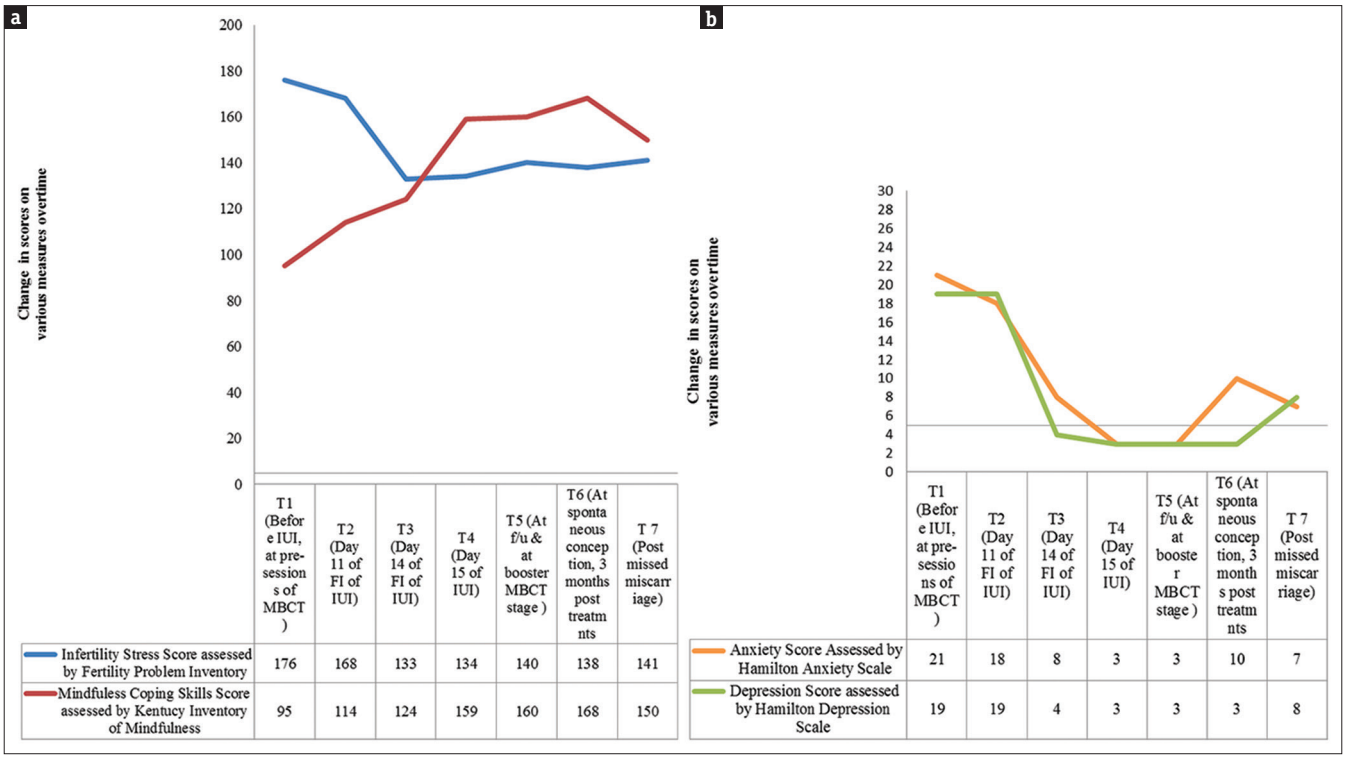
Modified mindfulness-based cognitive was administered on the couple in 6-daily 90-min session structure with predesignated daily homework tasks, which they underwent along with routine-assisted conception treatments. The details of mindfulness-based cognitive therapy (MBCT) are summarized in Table 1. Change on the outcome measures was assessed before (T1) and after the intervention (T2, T3, and T4), at booster MBCT sessions done for 1 month followed by the last IUI (T5), at spontaneous conception (confirmed by transvaginal scan and blood tests) after 3 months IUI pregnancy (T6), and at missed miscarriage stage (T7).

Data analysis

Visual analysis of graphic trends [Figures 1-3] and clinically significant therapeutic changes (50% and above from T1 to T7) for wife's scores were calculated [Table 2] for estimating effect size of psychotherapy using formula given by Blanchard and Schwartz, 1998 (prescore − postscore/prescore × 100).

Results

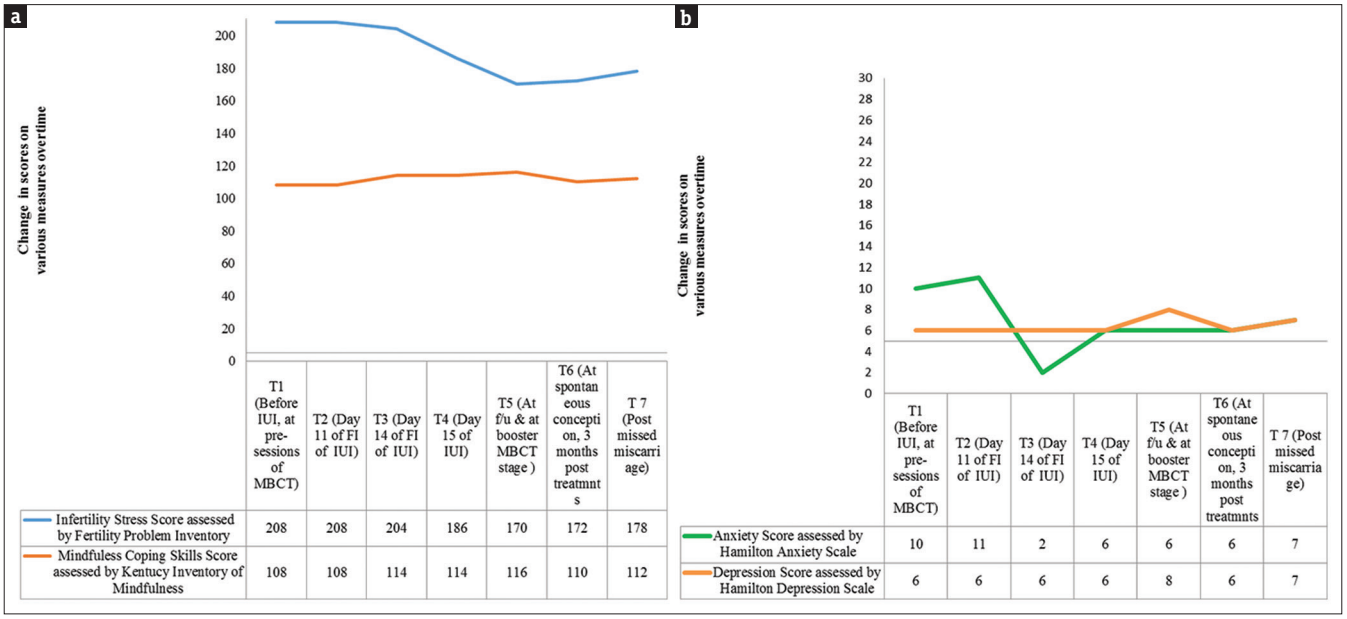
Visual analysis of graphic trends in data was seen, at various time-points from pre-post MBCT. Outcomes in wife [Figure 1a and b] suggest minor fluctuations in infertility stress experienced by her. However, as coping skills gradually increased, she experienced a stable improvement. Anxiety and depression reduced and remained below the critical cutoff points in wife and husband. These scores remained low in stressful events and stressors (such as a failure of IUI cycle, conception stress, and miscarriage) faced by the couple in the months that followed therapy. Outcomes in husband [Figure 2a and b] suggest that although he attended only two sessions, his scores on stress, anxiety, and depression reduced. This suggests the dyadic benefits of therapy even if one partner opts for it. Couple's feedback revealed that each partner mutually experienced mind–body well-being posttherapy reflected in improved quality of life scores [Figure 3].



	T1 (Before IUI, at pre-sessions of MBCT)	T2 (Day 11 of FI of IUI)	T3 (Day 14 of FI of IUI)	T4 (Day 15 of IUI)	T5 (At f/u & at booster MBCT stage)	T6 (At spontaneous conception, 3 months post treatments	T 7 (Post missed miscarriage)
Infertility Stress Score assessed by Fertility Problem Inventory	176	168	133	134	140	138	141
Mindfuless Coping Skills Score assessed by Kentucy Inventory of Mindfulness	95	114	124	159	160	168	150

	T1 (Before IUI, at pre-sessions of MBCT)	T2 (Day 11 of FI of IUI)	T3 (Day 14 of FI of IUI)	T4 (Day 15 of IUI)	T5 (At f/u & at booster MBCT stage)	T6 (At spontaneous conception, 3 months post treatments	T 7 (Post missed miscarriage)
Anxiety Score Assessed by Hamilton Anxiety Scale	21	18	8	3	3	10	7
Depression Score assessed by Hamilton Depression Scale	19	19	4	3	3	3	8

Figure 1: (a) The change in scores on infertility specific stress and mindfulness coping for the wife at different time points. (b) The change in scores on on anxiety and depression for the wife at different time points



	T1 (Before IUI, at pre-sessions of MBCT)	T2 (Day 11 of FI of IUI)	T3 (Day 14 of FI of IUI)	T4 (Day 15 of IUI)	T5 (At f/u & at booster MBCT stage)	T6 (At spontaneous conception, 3 months post treatmnts	T 7 (Post missed miscarriage)
Infertility Stress Score assessed by Fertility Problem Inventory	208	208	204	186	170	172	178
Mindfuless Coping Skills Score assessed by Kentucy Inventory of Mindfulness	108	108	114	114	116	110	112

	T1 (Before IUI, at pre-sessions of MBCT)	T2 (Day 11 of FI of IUI)	T3 (Day 14 of FI of IUI)	T4 (Day 15 of IUI)	T5 (At f/u & at booster MBCT stage)	T6 (At spontaneous conception, 3 months post treatmnts	T 7 (Post missed miscarriage)
Anxiety Score assessed by Hamilton Anxiety Scale	10	11	2	6	6	6	7
Depression Score assessed by Hamilton Depression Scale	6	6	6	6	8	6	7

Figure 2: (a) The change in scores on infertility specific stress and mindfulness coping for the husband at different time points. (b) The change in scores on anxiety and depression for the husband at different time points

Discussion

Couples with RPL are known to experience fluctuating patterns of unresolved grief, series of losses, and associated emotional pain. Evidence from this study is in-line with other studies[9,10] which urge that brief psychotherapy may be useful in the patients with RPL, as it helps in meaning-based coping. A steady improvement in psychological symptoms in this study suggested a possible enhancement in the ability of the couple to recoil back to life after a miscarriage, readjust, and move toward meaningful resolution, growth, and fulfillment of other life goals. The strengths of modified MBCT module were its good internal validity, brevity, focus, and application

Table 1: Details of conduct of mindfulness-based cognitive therapy with intrauterine insemination

Schedule of IUI cycle: Executed by infertility experts	Psychotherapy session: Executed by licensed, trained clinical psychologist	Psychotherapy session content and skills
A month immediately before the IUI cycle was planned	Presession (T1)	**Therapeutic content** Forming therapeutic alliance Normalizing struggles Psychological preparedness for outcomes of RPL and IUI Orientation to psychotherapy with IUI, contracting and clarifications **Therapeutic strategies** Micro skills of therapy, psychoeducation, informational exchange Demonstrations of downward emotional spiral in infertile couples Motivation enhancement
The couple takes CC50 mg OD from day 2 to day 6 of the menstrual cycle and injectable FSH 150 mg on day 7 and day 9 of the menstrual cycle and is scheduled to report for follicular imaging and IUI from day 11 to day 14 at an infertility clinic		
*On day 11 of IUI to day 14 (couple report for follicular imaging on day 11 to day 12 and on day 13 and day 14 they have two insemination procedures)	Psychotherapy starts postfollicular imaging from day 11 (T2) to day 14 (T3) and IUI procedures	**Therapeutic content** Recapitulation of IUI schedule and preparing for outcomes of daily IUI events Introducing mindfulness, counter-effective mechanisms coping MBCT attitudes and skills: Attending, allowing, acknowledging, accepting their bodies, life, emotions, and present-moment experiences "as it is" with nonjudgmentally and noncriticality Emphasis on breath as an anchor for stabilizing distress Coping skills for minor stressors of daily life Acceptance and let-go skills for uncontrollable life aspects **Therapeutic strategies**: *In vivo* experience and practice of The "doing versus being" mode of mind Mindfulness attitudes. Mindful coping for palpitations, gastritis, tension headaches, sleep disturbances, ruminations, worries Cognitive coping: Anxiety and depressive thoughts MBCT skills: Eating mindfulness, experiencing how routine task can be done mindfully, and body scan, breath and body skills, 3-min breathing space, sitting mindfulness meditation
*Day 15 of IUI (couple sent home with Rx for progesterone support (day 16-28) and advise on outcomes after IUI. Emergency indications shared	Termination session (T4)	**Therapeutic content** Feedbacks were taken Skill consolidation, windup of sessions Emphasis on daily skill practice Advice on lifestyle modification for mind-body well-being Plan for relapse prevention of distress **Therapeutic strategies** Skill review, addressing doubts, hurdles in practice, and ways of enabling compliance over time Educating and fixing a time with the couple for telephonic follow-up and booster sessions next month

Each session begins with the home-work review, feedback, and recapitulation of skills taught in the last session. For home practice, the patient was given audio recorded tapes of coping skills and self-monitoring charts for tracking compliance and coping. Due to occupational reasons, the male partner attended only the presession and termination session with the wife. Booster MBCT sessions were given after 1 month posttherapy. Postpsychotherapeutic termination, the weekly review was carried out telephonically. Cumulative compliance of wife in homework tasks of 6 MBCT sessions: 78%, Compliance of wife to MBCT skills, at follow-up 1 month posttherapy (from T4 to T5): 51%, At T5, MBCT booster sessions offered to the couple. The only wife attended, compliance: 81%, Compliance at T6 (when the couple had a spontaneous conception): 56%, Compliance at T7 (when the couple had missed miscarriage): 51%. IUI=Intrauterine insemination, MBCT=Mindfulness-based cognitive therapy, FSH=Follicle-stimulating hormone, PRL=Recurrent pregnancy loss

Table 2: Clinically significant change in wife on various psychological measures

Outcome measures	Pretherapy At baseline consultation (T1)	Posttherapy At missed miscarriage at 10 weeks of pregnancy (T7)	Improvement in score
Infertility-specific stress score	176	141	19.88
Anxiety symptoms score	21	7	66.66
Depressive symptoms score	19	8	57.89
Mindfulness coping skills score	95	150	57.89
Fertility-related QOL score	287	435	51.55

QOL=Quality of life

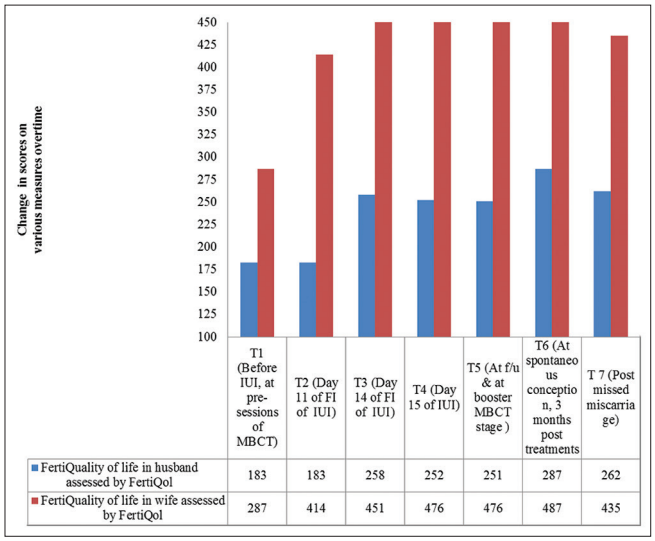


Figure 3: The change in scores on fertility quality of life scores for husband and wife at different time points

of limited core MBCT skills to achieve the desired short-term mental health goals. In addition, this study was a collaborative team effort of infertility experts and mental health experts and combined evidence-based elements such as patients' psychoeducation, fertility education, lifestyle modification, knowledge of their medical status and planned treatment goals, and mind and body coping skills to psychologically preparing the patients for outcomes of RPL and subfertility. Finally, therapy helped in creating a sense of controllability and containment as the couple was able to cope with the positive, predictable aspects, and the unpredictable negative aspects of RPL. Even in the antenatal times and at miscarriage, a mindful approach was enabled in liberating patients from their past and future worries. Grounded in elements of positive psychological change, MBCT helped the couple create a realistic hope, meaning, courage, and optimism toward life in the long term, both in terms of fertility and otherwise. Limitations of this study are its short-term focus and brief follow-up period, biases due to reactivity, restricted external validity, and errors such as autocorrelation due to which it needs be improved in its design. In addition, marginal changes in infertility stress were observed and thus to facilitate long-term psychological adaptation continuous weekly therapy is needed. In closing, supplementary research with controlled trials and adequate sample size is required in this overlooked area to provide us with authoritative evidences to support the validity of present work. The broader implementation of this study is that it became a part of pilot work for a larger doctoral project that provided us a basis for designing RCT on effectiveness of psychotherapy in infertility.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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