

Enhancing Mother Infant Interactions through Video Feedback Enabled Interventions in Women with Schizophrenia: A Single Subject Research Design Study

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ABSTRACT

Background: It has been shown that mother infant interactions are often impaired in mothers with schizophrenia. Contributory factors include psychotic symptoms, negative symptoms and surrogate parenting by others. **Aim:** This study describes the effectiveness of video feedback in enhancing mother-infant interaction in mothers with schizophrenia who have impaired interaction with their infant. **Materials and Methods:** Two women with schizophrenia who were admitted for persistent psychotic symptoms and poor mothering skills, participated in the intervention. Pre intervention parenting assessment was done using video recording of mother infant interaction. Six sessions of mothering intervention were provided using video feedback and a repeat recording was done. Pre-and post-intervention videos were subsequently rated in a blind fashion by an independent expert in perinatal psychiatry using the pediatric infant parent exam (PIPE) scale. **Results:** Pre and post intervention comparison of PIPE scores indicating significant improvement in several areas of mothering. **Conclusions:** Video feedback is a simple and inexpensive tool which can be used for improving mothering skills among mothers with postpartum psychosis or schizophrenia even in low resource settings.

Key words: *Mother infant interaction, postpartum psychosis, schizophrenia, video feedback*

INTRODUCTION

In India, marital rates of persons with schizophrenia are high compared to western countries.^[1] Most women with schizophrenia do become mothers and raise their own children.^[2,3] Parenting difficulties in women with

psychosis are common and could be due to social cognitive impairments,^[4,5] specific positive symptoms^[6,7] the presence of social stressors (e.g. chronic social adversity, stigma^[8] or a lack of protective factors (e.g. low social and partner support; eroded empowerment).^[9,10]

However, the demands of parenting while managing a mental illness can be challenging.^[11-17] Empirical studies suggest that mothers with schizophrenia are particularly vulnerable to difficulties with parenting^[2] and interacting sensitively with their infants,^[9,18-20] leading to risk of infants developing insecure attachment,^[21,22] or being removed to care^[2,23] and less infant focused speech.^[24]

Nearly a third of parents with psychotic disorders

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stated that they were reluctant to seek help with child care because they feared that their children would be taken away from them and they also acknowledged that they needed support in caring for their children.^[25] An intervention study aimed at enhancing parental sensitivity,^[26] provided adolescent mothers with a videotape to help them enhance their sensitivity during mealtime. It was found that the video feedback method was more effective than interventions that did not use video feedback method.^[27] Video feedback and baby diary sessions were found to be useful for mothers with schizophrenia.^[24]

In the video-feedback intervention to promote positive parenting (VIPP) program, parent and child are videotaped during daily situations at home. Video feedback provides the opportunity to focus the mother's attention on her child's videotaped signals and expressions, thereby stimulating her observational skills and empathy for her own child. It enables positive reinforcement of the parent's moments of sensitive behavior shown on the videotape, thus addressing both parts of definition of sensitivity: (a) Accurately perceiving the child's signals and (b) adequately responding to them.^[28] Studies with the VIPP approach illustrated positive outcomes on parental sensitivity and/or attachment security in nonclinical groups^[29] and in at-risk and clinical groups, such as mothers with an insecure representation of attachment. Intervention mothers significantly improved their sensitive responsiveness through participation in VIPP.^[30] In enhancing maternal sensitivity the video group improved significantly compared with the control group.^[31] With the wide use of mobile phone technology to capture videos, video feedback can be a low cost method of assessing and intervening in handling poor parenting in mentally ill mothers in low resource settings such as India.

MATERIALS AND METHODS

The aim of the present study was to test the effectiveness of video feedback in enhancing mother and child interaction in mothers having schizophrenia. The single subject research design (AB) was applied to both the cases. There were two phases in AB single subject research design, which includes pre intervention assessment phase (A) and intervention phase and post intervention phase (B).^[32]

Sample

Two women who were admitted to the Mother Baby Unit of Psychiatry at National Institute of Mental Health and Neuro Sciences with specific concerns of poor mother infant interactions and poor parenting were included for this study. The age of the infants

was 6 months and 1 year. According to family members and the mothers, their major concern was an inability to care for the child, poor emotional expression and attachment, including difficulty in interacting with the infant. This was despite being on regular medication and the schizophrenic symptoms being in control. Both women did not have active psychotic symptoms.

Study instrument

Pediatric infant parent exam (PIPE)^[33] is an observational rating of the quality of early parent child interactions. PIPE uses behavioral referents for parent and infant as parental behaviors may have different meanings depending on infants unique set of responses. PIPE can be used when infant is awake, alert and comfortable. The PIPE can be applied in the mother-infant face to face interviews as well as in mother infant video recorded interviews. The PIPE assesses different areas which include easy engagement, infant difficult to engage, parent disengaged, Parent disengaged/Infant protest, Intrusive engagement/infant avoids, flat affect or protest at the starting of the interaction. PIPE also measures the overall impression of interaction and clinician can judge it as typical or atypical interaction. Lower scores reflect more favorable interaction patterns. A total score is calculated by summing from the three segments of interaction. The total score of PIPE 3-4 indicates highly adaptive, between 5 and 9 shows marginally adaptive and scores of 10-18 shows problematic interaction.

In a study examining the reliability and discriminant validity of the PIPE, interaction summary scores differentiated between infants of varying risk levels; high risk infants displayed over twice the rate of problematic dyadic interactions compared with low risk infants.^[33] The inter rater reliability was 0.74 for exact agreement across all segments of observation and 0.92 for agreement within one point across all segments. In addition PIPE scores for the beginning, middle and end of the interaction were highly correlated within each group (r 's ranged from 0.65 to 0.90).

Procedure

Structured parenting skills assessment using PIPE was conducted by two mental health professionals using the video recording. The below mentioned procedure was followed.

Video recording

A 10 min play interaction between mother and the infant was recorded in a neutral environment. Instructions to the mother included being as natural as possible and involving the infant in interaction. No interruptions, suggestions or questions were raised by the treating team during the task. The video was shown to the mothers

and they were asked to identify areas of mother infant interaction, which could be improved. The mothers themselves were able to identify several areas of parenting with the help of mental health professional.

A qualified mental health professional had six thirty minute sessions with the mother focusing on parenting skills. In the intervention, the deficit areas and faulty interactions identified by the therapists and mothers after viewing the video were discussed. Mothers were taught skills such as maintaining eye to eye contact, cooing, singing lullabies, smiling at the baby, understanding cues from the baby (hunger, sleep etc.), playing with baby and stimulating the baby using toys. The mother was encouraged to practice these skills in between sessions and her concerns were revised in each session.

Following the intervention, a repeat video recording of the mother infant interaction was done. Both the videos (pre and post intervention) were subsequently rated by an independent expert in perinatal psychiatry who was trained in PIPE and was blind to the intervention and was not aware which video was pre or post intervention. Informed written consent was obtained from both the mothers.

RESULTS

Mother infant interaction in both the videos was assessed at pre intervention and post intervention using the PIPE. Blind rating of the pre and post videos indicated the following - Mother 1: The pre intervention total PIPE score was 8 whereas post intervention score was 3. Mother 2: The pre intervention total PIPE score was 12 post intervention score was 8. This indicated that there was a significant improvement in several areas of mothering following the intervention.

Figure 1 shows the scores on PIPE at pre intervention and post intervention in mother 1. The scores in beginning, middle and ending phases of mother infant interaction indicates disengagement in mother. The deficits in mothering were: Poor eye to eye contact, lack of emotional expression, passive involvement, instructing the baby, unable to recognize danger to the baby. The total pre intervention score of PIPE was eight indicated that the interaction was marginally adaptive as there were signs of disengagement in mother. The post intervention score decreased to one in the beginning phase, maintaining phase and ending phase of the interaction. The total score on PIPE was three indicates that the mother infant interaction was improved significantly.

Figure 2 shows that in mother 2, the pre intervention

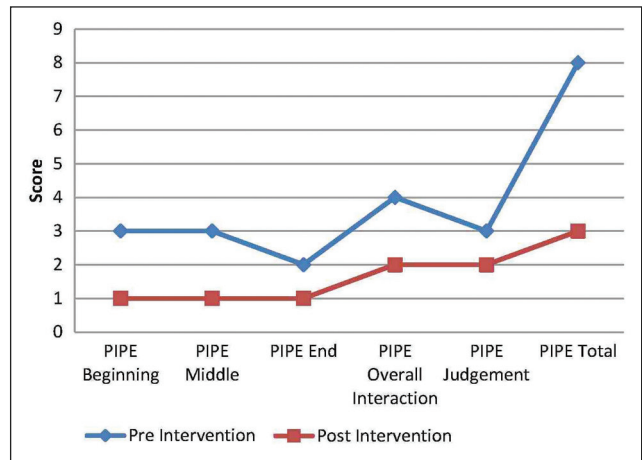


Figure 1: Pre intervention and Post intervention scores on pediatric infant parent exam scale in mother 1

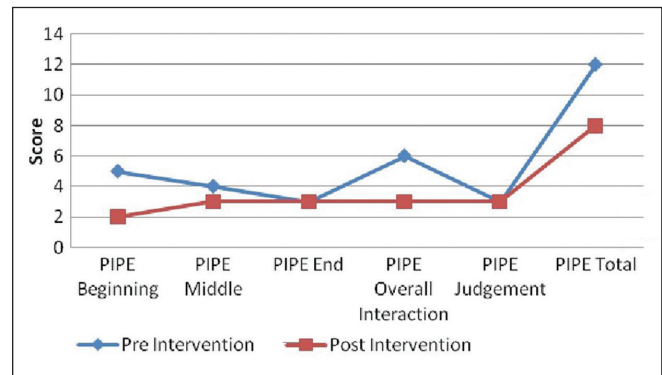


Figure 2: Pre intervention and Post intervention scores on pediatric infant parent exam scale in mother 2

score in the beginning, middle and ending phases indicates that there was poor eye to eye contact, intrusiveness, mechanical interaction, low tone of voice, frustration, low interest levels, lack of emotional expression, frequently withdrawn from interaction. The total pre intervention score on PIPE depicts twelve, which shows that there was maternal disengagement and negative affect in the infant. The post intervention video rating scores shows that there is moderate improvement in the mothering skills in mother 2. The total PIPE score was eight which indicates that the mother infant interaction was improved, but there were occasional signs of maternal disengagement.

DISCUSSION

This brief low cost intervention for mothering skills using mobile technology to shoot a video indicated that mothering skills improved significantly in several areas after video feedback intervention. In their study Bakermans-Kranenburg *et al.*^[31] reported that video feedback intervention enhanced maternal sensitivity of preoccupied mothers. Bakermans-Kranenburg *et al.*^[27]

in their study analyzed 81 studies and found that the most effective methods focused on video feedback in enhancing behavioral sensitivity in post-partum women.

When the videos were shown to our mothers they could recognize areas of inadequate mothering. The video gave them an opportunity to objectively view their interaction with the infant. Video-based sensitivity training may aid reflection and encourage insight in mothers with schizophrenia into how their behaviors affect their children.^[34] Involving the two mothers in identifying areas of deficits in mothering helped mothers in identifying poor parenting including inadequate mother-infant interaction patterns. The mothers were able to acknowledge their deficits in mothering and they were prepared to receive mothering interventions.

Video feedback allows mothers to reflect on mother infant interaction and infant behavior.^[30] There was less improvement with respect to mother infant interactions in the second mother; which could be because of severity of psychiatric illness, low interest in caring for baby, irritability, low motivation levels compare to first mother. Particularly in low resource situations like India where mental health professionals have little time for interventions, this method can be effectively used. A counselor, nurse or psychiatric social worker can even use a mobile phone to provide video feedback intervention.

In the current study, systematic evaluation of mother infant interactions was done using standardized scales and blind rating of the video by an independent expert rater. The scientific research design, i.e., single subject research design was applied to both the mothers in the study. The limitations of this study are that systematic assessment of schizophrenic symptoms with standard tools was not done and the study had only two mothers, hence the findings of the study cannot be generalized. The current study assessed only the short term gains of the mothers and there is a need to conduct more longitudinal research studies to assess the sustenance of these gains.

CONCLUSION

This brief video feedback enabled intervention appears to be an effective tool for enhancing mother infant interactions in mothers with schizophrenia and appears to be acceptable to the mothers. These interventions are cost-effective and use easily available technology and are easy for mental health professionals to incorporate into routine clinical practice.

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