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Effect of psychosocial environment in children having mother with schizophrenia

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ABSTRACT

The process of child's mental development depends heavily on the social interrelationship between the mother and her child. Schizophrenia in mothers potentially disrupts mother–infant relationship and adaptation to motherhood. Literature is limited on evaluating the emotional and behavioral problems of children of mother having schizophrenia with nearly none from the Indian subcontinent. The aim of the current study was to examine the effect of psychosocial environment in children of females with schizophrenia. Thirty children of mothers suffering with schizophrenia were evaluated with Child Behavior Checklist (CBCL) and Mini International Neuropsychiatric Interview for children and adolescents. The psychosocial environment was assessed using Parent Interview Schedule. Control group of 30 children were evaluated in the same way as the cases. The children of female patients with schizophrenia were found to score significantly higher on internalizing and externalizing behavioral problems on CBCL as compared to control group, along with significant differences in the psychosocial environment between the groups. We conclude that there is a need for screening and evaluation of children of mothers diagnosed with schizophrenia, for identifying and managing possible mental and behavioral problems in them, and to assess the psychosocial environment and provide interventions for issues related to it.

1. Introduction

The process of child's mental development depends heavily on the social interrelationship between the mother and her child. Mothers are usually having a closer relationship to their children behaving as the more influential of the parent thus influencing majorly in this regard (Rothbaum and Weisz, 1994).

Children devoid of such an inter-relationship because of diverse reasons are often at risk for development of emotional and behavioral problems (Vafaei and Seidy, 2003). Researchers have reported severe developmental retardation among those children who had been neglected and had not received proper attention and care (Kaplan and Sadock, 1998). Maternal mental illness is one such factor that may have potential deleterious effect on infant development. Vulnerability in such children may arise as a result of gene–environment interaction (Seeman, 2002). Literature associates maternal depression as a risk factor for development of childhood behavior problems with parenting and parent–child interaction playing major role (Cummings et al., 2005; Elgar et al., 2007; Foster et al., 2008; Lunkenheimer et al., 2013). A poor child-rearing environment with low mother–child interaction has also been associated with maternal schizophrenia in various studies (Goodman, 1987; Niemi et al., 2003; Wan et al., 2008; Gearing et al., 2012).

Schizophrenia in mothers potentially disrupts mother–infant relationship and adaptation to motherhood. While positive symptoms lead to unwanted behaviors, negative symptoms tend to exert their influence through the absence of desirable behaviors. Besides the positive and negative symptoms of psychosis, women suffering from schizophrenia frequently experience problems of interpersonal, mood, cognitive, and behavior abnormalities that interfere with optimal parenting. The culminating parental discord, aggressive behavior, impaired maternal sensitivity and maladaptive bonding behavior adversely impact child rearing, compromising the value of family as an important component of a child's personality development (Reupert and Maybery, 2007). Performance deficits, low self esteem and severely debilitating social functioning further compounds the problem. A severe and long-standing illness in parent may increase the risk of psychological problems in their children (Willinger et al., 2002).

The Stony Brook High Risk Study revealed greater marital discord and found the family environment to be unstable, disorganized and

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unpredictable in families with schizophrenia parent (Weintraub, 1987). Social isolation to the extent of minimal social contact was observed in 46% families consisting of women suffering from schizophrenia (Webster, 1992). Residential instability has been associated with patient's inability to care for their offspring (Caton et al., 1998). The Indian Council of Medical Research (ICMR) study revealed following psychosocial situations to be common in children with a psychiatric diagnosis; "living conditions that create a potentially hazardous psychosocial situation, physical abuse, parental mental disorder/deviance and intrafamilial discord" (Srinath et al., 2005).

The Emory University Project reported that the overall environment provided by mothers with schizophrenia was poorest, consisting of less play stimulation, learning experiences, emotional and verbal involvement (Goodman, 1987). The possible protective factors in mothers identified in the project were of lesser severity of illness, older age, higher education, higher intelligence quotient, work experience, and the presence of spouse, boyfriend, or other relative to help in child care (Goodman, 1987).

Several studies reported a kind of maladaptive bonding called "affectionless control" represented by less care and more overprotection in schizophrenic patients (Willinger et al., 2002). The disturbed family environment and poor parental emotional responses to children of affected parents spawn an increased risk of emotional and behavioral problems in such children.

Literature is limited on evaluating the emotional and behavioral problems of children of mother having schizophrenia and nearly none from the Indian subcontinent. This study was carried out to explore for emotional and behavioral problems in such children in comparison with healthy controls from the community.

2. Methods

2.1. Participants

This cross sectional study was conducted at the Institute of Human Behavior and Allied Sciences, New Delhi, India. Thirty families of consecutive female patients with schizophrenia attending the outpatient department of psychiatry were included. The institutional ethics committee approved the protocol.

Female patients providing informed consent and fulfilling the criteria for schizophrenia as per the International Classification of Diseases and Related Health Problems, 10th revision, Diagnostic Criteria for Research (ICD-10-DCR) were included in the study (World Health Organization, 2004). Patients having minimum illness duration of 2 years, below the age of 45 years, educated up to middle school and living in a nuclear family were included in the study. Children between age group 5 and 16 years, whose mother fulfilled the inclusion criteria's, were included along with their father. Eldest child in the family was taken for assessment.

Nursing staff and attendants working at the hospital, matched on age, years of education and family income were taken up as healthy controls along with their families.

Those patients requiring acute inpatient care or acute short-term management or disorganized, disruptive, mute, uncooperative for meaningful conversation or with disabling medical conditions were excluded. Subjects who were separated, divorced or widowed were excluded. Subjects were also excluded if the healthy controls or any of the spouses were having psychiatric illness (assessed using General Health Questionnaire-12), substance abuse (except nicotine and caffeine) or serious medical illness. Families where spouses refused informed consent for self or the concerned child were also excluded. Children with mental retardation, serious medical or neurological condition were excluded.

2.2. Measures

2.2.1. Socio-demographic performa

A semi-structured performa was used to collect detailed information about the socio-demographic parameters of the subjects as well as the controls.

2.2.2. Positive and Negative Syndrome Scale for Schizophrenia (PANSS)

The PANSS is specially developed to assess individuals with schizophrenia and is widely used in research settings (Kay et al., 1987). It includes three subscales namely positive scale, negative scale and general psychopathology scale. A composite score is also obtained to reflect the degree of predominance of one syndrome over the other, and its valence (positive or negative) may serve for typological characterization.

2.2.3. Mini International Neuropsychiatric Interview for children and adolescents (MINI–KID)

This is a short diagnostic semi-structured interview of approximately 15 min, which explores Axis I diagnosis compatible with ICD-10 criteria and focuses on the existence of current disorders (Sheehan et al., 1998).

2.2.4. General Health Questionnaire-12 (GHQ)

This is a self-administered screening instrument to detect psychiatric disorder in the community setting (Goldberg and Hiller, 1979).

2.2.5. Child Behavior Checklist (CBCL) – Parent Version

It is an assessment tool intended to be a part of a comprehensive, multi-informant evaluation of a child's behavior (Achenbach and Edelbrock, 1983). It evaluates pathological behavior and social competence in children of 4–16 years of age. It consists of a 113-item behavioral problem checklist and a 7-item social competency checklist. Each item is scored on a three step response scale ranging from 0 to 2 where 0 is "not true", 1 is "somewhat or sometime true" and 2 is "very true or often true". These items elicit two major types of behavioral problems – internalizing and externalizing.

The raw scores for each individual scale are obtained by summing up all the 1 s and 2 s of the items on a particular scale. The raw scores are then converted into "*T*" scores using the "*T*" score table. Separate *T* score for emotional, behavioral and total problems are calculated. Test–retest reliability of the scale is 0.74 and 0.69 over 3 and 6 months time period, respectively. Construct validity of this instrument has been found in the range from 0.71 to 0.92. A *T*-score of 63 is considered as an upper limit of normal range for childhood emotional and behavioral problems.

2.2.6. Parent Interview Schedule (PIS)

This is a semi-structured instrument for systematic collection of information about the child's psychosocial environment (World Health Organization, 1990; van Goor-Lambo et al., 1990). A shortened version was used covering areas of intrafamilial communication, qualities of upbringing, nature of immediate environment, life events, societal stresses, and interpersonal stress at home, school or work (Srinath et al., 2005). Some culturally relevant items like excessive parental control, family level stresses/life events, change of academic environment, and excessive academic pressure at school, are also present. Categories 1 through 5 relate to unusual family environments, 7 and 8 to factors in the wider surroundings, and 6 to acute life events. Category 9 is the only category pertaining to events brought about by the child's own behavior. The scoring used is 0 for situation absent, 1 for the situation definitely present but not in required severity and 2 for the situation definitely present.

2.3. Study design

The study was cross sectional in design, involving interview of female patients having schizophrenia along with their spouses and children. Subjects fulfilling the inclusion and exclusion criteria were provided a date for detailed evaluation of family members. On the given date, severity of illness in subjects was assessed using PANSS and the spouses were assessed using GHQ. Spouses were further interviewed with PIS to assess the psychosocial environment of the family. The children were made comfortable in a separate interview room and assessed using CBCL and MINI–KID. Family assessment of healthy controls was done in the same way as the study group.

2.4. Statistical analysis

Independent sample *t*-test (for continuous variables) and chi-square test (for categorical variables) were used to find difference between the case and the control groups on different variables. Additionally Cramer's *V* test and phi test were used for 2×4 contingency tables. Pearson's analysis was used to comprehend the correlation of maternal psychopathology variables, psychosocial environment and CBCL scores. The cut-off level for statistical significance was set at $p < 0.05$, 2-tailed. Data handling and analyses were carried out using SPSS version 17.0.

3. Results

A total of 47 female patients with their spouses were approached, out of which three did not give consent for the study, six did not conform to the inclusion and exclusion criteria's, five did not turn up for allotted appointment and the interview for three patients was not found satisfactory. The final sample included in analysis was of 30 families in each case and control group.