Cognitive Behaviour Therapy-based Intervention by Community Health Workers for Mothers With Depression and Their Infants in Rural Pakistan: A Cluster-randomised Controlled Trial

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In a previous study in Pakistan, the authors found a prevalence of depression of 25% during pregnancy and 28% during the postnatal period. Although evidence from developed countries shows that cognitive behavior therapy (CBT), interpersonal therapy, or problem-solving are effective in treating depression, this may not hold true in rural, poor countries. Techniques shown to be effective in countries of higher income must be delivered by health workers without training in mental health in countries of lower income. This cluster-randomized controlled trial integrated CBT-based intervention into the routine work of community-based primary health workers in rural Pakistan to determine its effect on maternal depression and infant outcomes.

Forty Union Council clusters in rural Rawalpindi, Pakistan, participated and were randomly assigned in equal numbers to provide intervention (CBT therapy) or none (control) to enrolled women. Married women, aged 16 to 45 years, in the third trimester, with perinatal depression were eligible for inclusion after identification by health workers in the Union Council cluster and assessment by experienced psychiatrists for depression. The interviewers assessed depressed women at baseline with the Hamilton Depression Rating Scale and other standardized questionnaires to assess patient function and socialization. Maternal demographic data were obtained. Mothers in the intervention group had workers trained in CBT visit them every week for 2 weeks in the last month of pregnancy, three times in the first postnatal month, and nine 1-monthly sessions thereafter. Mothers in the control clusters had an equal number of visits, but by routinely trained health care workers. Mothers in both groups were interviewed again by the same psychiatrists at 6 and 12 months postnatally. Infants were weighed and measured and growth compared between groups. Rates of breast feeding were recorded and compared as well as the prevalence of maternal depression. The study was powered to have a 95% chance to detect a 0.62 standard deviation difference in infant weight for age score and a 0.3 standard deviation difference for maternal depression score.

Each group had 20 clusters, with 463 mothers in the intervention group and 440 in the control group. At both 6 and 12 mo, the prevalence of depression was much higher in the control than the intervention group (6 mo: 53% vs. 23%, respectively, \(P < 0.0001\); 12 mo: 59% vs. 27%, respectively, \(P < 0.0001\)). At 6 and 12 months, mothers in the intervention group had lower depression scores (6 mo: 4.5; 12 mo: 5.4) and lower disability scores (6 mo: 2.3; 12 mo: 2.2) months compared with control mothers (depression, 6 mo: 8.7, 12 mo: 10.7; disability, 6 mo: 4.2, 12 mo: 5.2), \((P < 0.0001\) for all comparisons between groups). The mothers in the intervention group also had better overall functioning and perception of social support than control mothers \((P < 0.0001)\). The differences remained significant when adjusted for maternal age, education, parity, infant sex, and socioeconomic status. Infants whose mothers were depressed at 6 months had significantly lower weight for age and height for age scores at both 6 and 12 months than mothers who had recovered from the baseline depression. The rate of stunting and underweight rose sharply from 6 months to 12 months in both groups, most likely because when breast-feeding stopped the risk for malnutrition increased. Infants in the intervention group were less likely to have had diarrheal episode just before the 12-mo examination [adjusted odds ratio (OR) 0.6; 95% confidence interval (CI) 0.39-0.98, \(P = 0.4\)] and were more apt to have completed the immunization schedule (OR 2.5, CI 1.47-4.72, \(P < 0.01\)). Parents in the intervention group also spent more time with their infants than that reported by control parents.

Although the intervention did not produce any significant change in infant growth indices, mothers had more symptomatic relief and better overall and social functioning. The results of this study provide directions that psychological interventions could take to integrate mental health programs into public health endeavors.

Editors Note: The following is an abstract of an editorial comment on the paper abstracted above (Rahman et al; Cognitive Behaviour Therapy-Based Intervention by Community Health Workers for Mothers with Depression and Their Infants in Rural Pakistan: A Cluster-Randomised Controlled Trial).

Perinatal Depression Treated by Community Health Workers

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Depression in mothers with newborns can have a huge adverse effect on their babies, and is associated with infant low birth weight, undernutrition and stunted growth, diarrhea, and incomplete immunization. Although brief psychological treatments are effective, they are useless if mental health workers are not available to provide such therapy. The work by Rahman and colleagues (accompanies
Despite the rapidly increasing rate of cesarean sections (CS) in obese parturients, little has been reported about the risk of abnormal labor associated with increasing body mass index (BMI). Several studies have found strong relationships between high pre-pregnancy BMI and the risk of CS at term, independent of other maternal characteristics or obstetric pathologies. Some authors have suggested that soft-tissue dystocia or the accumulation of fat in the pelvis of obese women narrow the birth canal, causing failure to progress and necessitating CS. This retrospective, historical, cohort study was designed to determine whether high maternal BMI associated with dystocia during the first stage of labor increases risk of CS in parturients without other obstetric complications among women who attempted spontaneous vaginal delivery.

Charts of all low-risk women who received prenatal care and delivered at a large, academic, inner-city/regional hospital in South Carolina between 1994 and 2004 were reviewed for eligibility. Women who delivered vaginally or by CS after trial of labor were included in the analysis. Exclusions were planned CS, induced labor, multiple gestation, non-cephalic presentation, large-for-gestational-age babies, stillbirth, medical interruption of pregnancy, preterm deliveries (<37 wk), previous CS, prepregnant or gestational diabetes, and/or other major obstetric pathologies. Maternal characteristics, BMI, prenatal care, circumstances related to the onset of labor, and neonatal birthweight were recorded. The primary outcome was mode of delivery either vaginally (spontaneous or operative), CS due to dystocia during the first stage, or CS due to other medical reasons. Adjusted odds ratios (OR’s) were calculated using a multivariate multinomial logistic regression model and the adjusted OR’s were compared using the Wald’s test.

A total of 6949 deliveries met inclusion criteria; 1155 (16.6%) occurred in women whose pregnant BMI was >35 kg/m². There were 575 (9.3%) CSs, with 286 (4.1%) due to dystocia. The remaining 289 CSs were related to other pregnancy complications. Women with a BMI >30 kg/m², aged >30 years, and nulliparous had an increased rate of CS due to dystocia or other reasons. CS for dystocia only was related to neonatal weight >3500 g, race other than Caucasian, maternal age 25 to 29 years, BMI 25 to 29.9 kg/m², and membrane rupture 24 hours before the onset of labor. Neonatal weight of 2500 to 2999 g, on the other hand, was associated with a significant decrease in the rate of CS due to dystocia; weight of <3000 g was associated with risk of CS for other reasons. The overall risk for CS due to dystocia with a BMI >35 kg/m² in low-risk pregnancies was 13.3%.

These findings confirm the authors’ hypothesis that higher maternal BMI is associated with an increased rate of CS due to dystocia. The population risk with this combination suggests that a significant number of CSs could be avoided by better weight control during pregnancy. This, along with other reasons to avoid excessive weight gain during pregnancy, should be conveyed to women who are pregnant.

Maternal Body Mass Index at Delivery and Risk of Caesarean Due to Dystocia in Low Risk Pregnancies

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