Short- and Long-Term Impacts of Cognitive Behavioral Therapy on Maternal Depression in Pakistan

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Sector(s): Health

Location: Gujar Khan and Kallar Syedan, Pakistan

Sample: 903 women during original RCT, 585 during follow-up survey

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Data: OpenICPSR

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In low- and middle-income countries (LMICs), approximately twenty percent of women who bear children experience depression during pregnancy or in the year after their child's birthday, called perinatal depression, but they are rarely diagnosed or treated. Researchers evaluated the impact of a cognitive behavioral therapy (CBT) program on the mental health, financial empowerment, and parenting decisions of 903 women with perinatal depression in Pakistan. They found that the CBT program reduced postpartum depression. The program also had long-term outcomes: seven years later, a different team of researchers found a reduction in depression rates, an improvement in financial empowerment, and an increase in time- and money-related parental investments, particularly for mothers of girls.

Policy issue

Approximately thirteen percent of the global population is affected by depression, and this burden is two times higher for women. Women are particularly at risk of experiencing perinatal depression. In LMICs, approximately twenty percent of women may experience perinatal depression, which is double the rate of women in high-income countries, and they are unlikely to receive a diagnosis or treatment.

Depression and economic decision-making are negatively associated, but there is limited evidence to support a causal link between them. The symptoms of depression, like sadness and loss of agency, have the potential to hinder productivity, impact economic decision-making, and affect women's financial empowerment. Further, depression can make it difficult for women to work, which subsequently may exacerbate the lower level of control over household spending many women in LMICs already face. The potential consequences of women's depression may also extend to children: because women's contributions to household income often increase spending on children, a woman's diminished ability to work and make financial decisions can be a detriment to her children's long-term outcomes.

What are the short- and long-term impacts of providing treatment for women with perinatal depression on women's mental health, financial empowerment, and parental investment in children?

Context of the evaluation

This evaluation took place across forty communities in two rural areas of Pakistan, Gujar Khan and Kallar Syedan. In rural Pakistan, primary health care is provided via a network of Basic Health Units, which are staffed by a doctor, a midwife, a vaccinator, and a team of village-based community health workers called Lady Health Workers (LHWs).[1]

A 2003 study found 25 percent of pregnant rural Pakistani women experienced depression and 28 percent experienced postpartum depression.[2] However, in these two rural areas, it was difficult to receive treatment—there were no psychologists working in the public health system and only three psychiatrists in the entire region. Furthermore, antidepressant medication was not easily accessible.

Additionally, in many parts of Pakistan, there are strict gender norms and low levels of women's empowerment, with many women being excluded from making decisions in the household.



An Accredited Social Health Activist (ASHA) interacts with a young mother during a home visit in Bihar, India.

Paula Bronstein/Getty Images/Images of Empowerment

Details of the intervention

A team of researchers worked with Basic Health Units in Gujar Khan and Kallar Syedan to evaluate the impact of CBT on women with perinatal depression.[3] They developed a CBT-style program called the Thinking Healthy Program (THP), which involved identifying and modifying common depression-related thinking patterns, using active listening techniques, working closely with the women's families, and providing a supported discovery of healthy thinking by gently asking about the family's health beliefs and prompting alternative ideas. LHWs were trained to deliver the THP. When the LHW delivered the THP, it was not portrayed as

treatment for a mental health condition.

Researchers randomly chose forty communities from the two rural areas. Across these forty communities, 3,518 women in their third trimester of pregnancy were assessed for prenatal depression. Twenty-six percent, or 903 women, were found to suffer from major depression. Researchers then randomly split the forty communities into two groups:

Comparison group: 440 women with perinatal depression who lived in the twenty communities of the comparison group were provided with routine maternal and health care services.

Intervention group: 463 women with perinatal depression who lived in the twenty communities of the intervention group received the same routine care as the comparison group, with an additional component of the THP.

Every woman in both the comparison and intervention group was visited sixteen times at home by an LHW. This was comprised of a weekly visit in the four weeks of the last pregnancy month, three visits in the first postnatal month, and a monthly visit for the following nine months. It cost US$10 per woman to deliver the THP.

Follow-up surveys to evaluate maternal mental health, infant outcomes, and parenting behavior were conducted at six and twelve months postpartum.

Then, seven years later, another team of researchers returned to the same two rural areas to survey the long-term effects of the THP. They were able to locate 289 mother-child pairs from the intervention group and 295 pairs from the comparison group, which is 64.8 percent of the original total program participants. In addition, the researchers identified 300 new pairs who were from the group of 3,518 women originally assessed for depression who did not meet the criteria for major depression at the time. They conducted interviews with the mothers and cognitive function tests with the children.

Results and policy lessons

The CBT program led to significantly lower rates of depression in women in both the short-term and long-term.

Short-term impacts: At six months postpartum, 23 percent of women in the intervention group were depressed compared to 53 percent of those in the comparison group. Similarly, at twelve months postpartum, 27 percent of the women in the intervention group were depressed as opposed to 59 percent in the comparison group.[4] There was approximately a 30 percentage point reduction in rates of depression at six and twelve months postpartum.

There was also an increase in how much both mothers and fathers reported interacting with the infant. There was no significant effect on infant growth.

Long-term impacts on mothers: After seven years, researchers found that the women in the intervention group were 5 percentage points less likely to have clinical depression (a 17 percent decrease) than those in the comparison group, where 30 percent of women still had clinical depression. Notably, the researchers suggest that this smaller gap in outcomes is because the women in the comparison group had recovered and not because the women in the treatment intervention group had relapsed. Additionally, the impacts of the CBT were more significant for women who had daughters rather than sons. The researchers suggest that while women who were pregnant with girls initially felt more disempowered and depressed than those who were pregnant with boys, receiving the CBT program helped close the gap.

After seven years, women in the intervention group also experienced greater financial empowerment. Improving women's ability to earn income can lead to them having a greater say in household financial decisions. Indeed, seventeen percent more women in the intervention group had control over household spending compared to the comparison group, and control over spending was especially greater for mothers of girls.

Long-term impacts on children: There was greater time and monetary investment in children's education, particularly for girls, which is a well-documented outcome of women having more control over household spending. Children from the intervention

group attended better schools, including private schools, and there were more learning materials in their homes. However, the researchers did not find significant effects on either cognitive and socio-emotional development or physical health and survival of the children whose mothers received the intervention. They suggest this may be because it can be difficult to detect impacts in seven-year-old children and the number of program participants may not have been large enough.

Taken together, both the short- and long-term results indicate that reducing maternal depression, particularly through CBT, can be a low-cost and effective strategy to improve women's and girls' empowerment, especially in LMICs with more rigid gender roles.

Following the publication of the short-term results, the World Health Organization endorsed the THP as a model of a low-cost, community-based program that can significantly impact depression in other countries.

Rahman, Atif, Abid Malik, Siham Sikander, Christopher Roberts, and Francis Creed. "Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial." The Lancet 372, no. 9642 (2008): 902-909. Accessed June 8, 2023. https://doi.org/10.1016/S0140-6736(08)61400-2.

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1. Rahman, Atif, Abid Malik, Siham Sikander, Christopher Roberts, and Francis Creed. "Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial." The Lancet 372, no. 9642 (2008): 903. Accessed June 8, 2023. https://doi.org/10.1016/S0140-6736(08)61400-2.
2. Rahman, et al., 902
3. Rahman et al., 903
4. Rahman et al, 2008, 902 (Findings)