Research report

Post-adoption depression among adoptive mothers

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Abstract

Objective: To evaluate the rate of depressive symptomatology and possible underlying factors in adoptive mothers during the transition to motherhood.
Design: Cohort survey.
Setting: General Community.
Participants: Thirty-nine adoptive mothers of reproductive age registered with international adoption agencies.
Interventions: All women completed the Edinburgh Postnatal Depression Scale (EPDS), the Beck Depression Inventory (BDI), and the Brief Symptom Inventory (BSI) before and 6 weeks after the adoption.
Main outcome measures: Responses were compared between the study group and published findings for biological mothers in the general population, and within the study group, before and after adoption.
Results: Symptoms of depression were found in 15.4% of the study group. This rate was similar to that for postpartum depression in the general population, and lower than the rate recorded in the study group before adoption (25.6%). All women with symptoms of depression after the adoption had also shown evidence of depressive features before the adoption. Similar findings were noted for other psychopathologies as well.
Conclusion: Adopting a child does not cause new-onset, reactive depression among adoptive mothers. It may even lead to a decrease in depressive features, perhaps in response to relief from other adjustment difficulties.
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1. Introduction

Although pregnancy and childbirth are a time of happiness and joy for many families, the sudden change in the pattern of their lives places new mothers at risk of

developing emotional disorders. These include despondency ("maternity blues"), postpartum depression, and postpartum psychosis (Campbell et al., 1992; O'Hara and Swain, 1996; Sutter et al., 1997; Evans et al., 2001; Bennett et al., 2004). The early editions of the Diagnostic and Statistical Manual (DSM) did not address specific disturbances related to delivery. Birth was seen as a general stressor, similar to other stressful events liable to trigger depression. It was only in 1994 that "depression of postpartum onset" was officially recognized, refining the diagnosis of depression appearing within four weeks of delivery (The Diagnostic and Statistical Manual of Mental Disorders, 1994). Postpartum depression is currently reported to occur in 10–20% of all new birth mothers (Bennett et al., 2004).

Postpartum depression can be affected by a myriad of biological, systemic, familial, cognitive, and social factors that play a role in a person's ability to withstand stressors. They are generally divided into three principle categories: biochemical changes that occur in the body after birth; intra-psychic processes relating to the pregnancy and birth; and psychosocial factors such as social support, familial support, and the relationship with the baby's father (Winner and Stowe, 1997; Bloch et al., 2000; Swendsen and Mazure, 2000).

Adoption has become an acceptable avenue to establishing a family. One study reported that 1 of every 40 children under 18 years in the United States is adopted (Kreider, 2003). In Israel, the percentages are still low, with adoptions accounting for only 0.25% of new additions to families; about 85% are international adoptions [Tal N, Ministry of Social Affairs and Social Services, Personal Communication, 2007].

Except for the pregnancy itself, adoptive parents undergo the same difficulties in the transition to parenthood as biological parents. They may also be subject to additional unique and potentially stressful hardships which include coping with the inability to conceive, agency evaluations of parental fitness, the uncertain wait for an eligible child, the adoption experience itself, possible social stigma, and possible medical, developmental or biological problems of the adopted child (Brodzinsky and Huffman, 1989). Nevertheless, unlike for biological mothers, there is a paucity of data on depression and other psychopathologies in adoptive mothers.

The purpose of the present study was to establish the extent of depressive symptomatology among adoptive mothers. A significant deviation in the incidence of depression in the cohort would shed light on specific risk factors characteristic of adopting vs. biological mothers.

1.1. Hypotheses

A. Adoptive mothers, subject to most of the same stressors in the transition to parenthood as biological mothers, are expected to be characterized by the same rate of postpartum clinical depression (10–20%).

B. Adoptive mothers, subject to stressors unique to the experience of adoption, are expected to have depressive symptoms also before the adoption.

C. Despite the initial difficulties, most adoptions resolve satisfactorily during the early stages. Therefore, adoption-related anxiety and accompanying depressive symptoms are expected to be at least partly relieved with time.

2. Method

2.1. Study sample

The study group consisted of 39 women aged 27 to 54 years (mean 40.75, SD 6.86) recruited via adoption agencies. According to the agency records, 22 were married, 11 were single, and 6 were divorced. For 85%, this was to be their first child. Three women had biological children, and this was to be their first adopted child. We assumed that all the women were of a similarly high socioeconomic status given the expense of the international adoption process in Israel. All of the initial participants completed the study. The majority of the adopted children were from Eastern Europe and a minority were from Latin America; 38% were boys and 62% were girls. The ages of the children at the time of adoption ranged from 2 to 25 months (mean 14.8 months, SD 4.42).

2.2. Procedure

The women received a full explanation of the study by telephone, including assurances of complete confidentiality. All participants provided written informed consent before onset of the study.

Two months before the adoption date, as reported to us by the adoption agencies, the participants were asked to complete a battery of questionnaires, which we sent by mail. Every two weeks, the adoption agencies provided us with an update on the progress of the adoption process. Six weeks after the adoption was completed, the participants were asked to complete the same questionnaires, which were again sent by mail.

2.3. Instruments

2.3.1. Edinburgh Postnatal Depression Scale (EPDS)

The EPDS is a self-report instrument developed specifically to identify early signs of postpartum depression as distinct from other forms of depression (Cox et al., 1987). It is not a measure of postpartum depression included in the larger psychiatric screen, but an individualized scale to detect women at risk (Beck, 2001). A threshold score of 12–13 at 6 weeks after birth is considered a marker of depression. Studies of the reliability and validity of the EPDS, performed in many countries and cultures (Affonso et al., 2000), have shown that when this cutoff is used, the EPDS has a sensitivity of 68–95% and a specificity of 78–96% for a diagnosis of postpartum depression by the psychiatric interview (Harris et al., 1989; Murray and Carothers, 1990). Lowering the threshold to a score of 10 for purposes of diagnosing depression increases the sensitivity to 84–100% and the specificity to 82–88% (Cox et al., 1987).

A broad prospective study in Israel using the EPDS found that postpartum depression occurs in about 23.4% of new mothers (Glasser et al., 1995). The high rate was attributed to the large proportion of immigrant respondents who naturally have higher rates of depression.

The EPDS is quick and easy to administer, has good measurement capability, and its results are easy to interpret; it has also merited much use by mothers (Cooper and Murray, 1998). However, it lacks preciseness in measurements of the severity of depression and does not account for somatic signs of depression in adoptive mothers with appropriate statistical weight.

2.3.2. Beck Depression Inventory (BDI)

The BDI is a 21-item, self-report instrument used to identify signs of depression (Beck et al., 1961). Every item is rated on a scale of 0 to 3, and the total score ranges from 0 to 63. The validity and reliability of the BDI have been proven in many studies (Jacobs and Boze, 1993; Piotrowski, 1996). The internal reliability (Cronbach α) of the BDI in the present study was 0.85.

2.3.3. Brief Symptom Inventory (BSI)

The self-report BSI (Derogatis and Spencer, 1982), an abbreviated form of the 90 Symptom Checklist (Derogatis, 1977), consists of 52 statements that describe symptoms in 9 dimensions of psychopathology: Somatization, Obsession–Compulsion, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and tendency to Psychosis. Subjects rate the occurrence of each symptom within the last month on a scale of 0 (not present at all) to 4 (frequently present). The higher the average score on each scale, the greater the likelihood of emotional distress and the lower the level of psychological adjustment. The total symptom score (Positive Symptom Total, PST) and the average index score (General Severity Index, GSI) are calculated as a measure of general emotional distress.

Studies of the Hebrew version of the BSI have yielded high validity (Cronbach $\alpha=0.98$) (Canetti et al., 1994). This was true for our sample as well ($\alpha=0.94$). Findings for the individual subscales were as follows: Somatization $\alpha=0.68$, Obsession–Compulsion $\alpha=0.83$, Depression $\alpha=0.83$, Anxiety $\alpha=0.89$, Hostility $\alpha=0.83$, and Paranoid ideation $\alpha=0.79$. The subscales of Interpersonal Sensitivity, Phobic Anxiety, and tendency to Psychosis were not found to be reliable and were not used in this study.

2.4. Design

Scores on the scales and subscales were compared between the study group and published findings in the general population, and within the study group, before and after adoption. In addition, several background variables were analyzed for their potential effect on symptoms of depression and other psychopathologies, as follows:

1. Length of time between the first and last administration of the study instruments (duration of adoption process).
2. Number of children in the family prior to the present adoption (biological children, adopted children, and total children).
3. Marital status (single, married, divorced, widowed).
4. Age of adopting mother.
5. Support available to adopting mother (spouse, family, none).
6. Age of adopted child.
7. Gender of adopted child.
8. Ordinal status of the adopted child.
9. Time elapsed from the last adoption/birth (if applicable).

The measures covered a period of 1.5 years during which no extraordinary events (social, economic, political, or environmental) occurred that could have affected the results.

2.5. Statistical analysis

The study data were analyzed with the SPSS 11.0.

A repeated measures model was used, as well as various one-tailed t-tests for dependent variables and chi-square tests for goodness of fit.

3. Results

The study's first hypothesis was that mothers after adoption are characterized by a similar rate of mood- and adjustment-related symptoms (the BDI) as biological mothers after delivery. Our findings showed that 6 of the 39 women (15.4%) had a score of 10 or more (indicative of depression) on the BDI, of whom 6 (51.3%) had moderate to severe symptoms. Comparison of this rate with the mean reported rate for birth mothers in the literature (15%) yielded no significant difference, $\chi^2 = -.005$.

The study's second hypothesis was that adoptive mothers would have depressive symptoms and psycho-pathologies also before the adoption. This hypothesis was tested by comparing the preadoption scores of the study sample on the BDI (depressive symptoms) and the BSI (other pathological symptoms) with the mean scores reported for the general population.

The reference value for the BDI was derived from a prevalence survey performed in Israel that included 466 women, of whom 26% were found to have depressive symptoms (Iancu et al., 2003). The rate of preadoption depression in the present study was 25.64%. Chi-square goodness of fit analysis yielded no significant difference between the study group and the general population for prevalence of depressive symptoms, $\chi^2(1) = -.003$.

The reference values for the BSI subscales and total score were derived from the adult Israeli community norms reported by Gilbar and Ben-Zur (2002). Using several one-tailed analyses, we found that the differences in mean scores were statistically significant for all subscales evaluated except Anxiety and Paranoid Ideation (Table 1).

Table 1
Comparison of BSI scores between mothers before adoption and the general Israeli population[a].

Indices	Present study		Norms		$F(1,38)$	Eta squared
	Mean	SD	Mean	SD		
General Severity	0.26	0.17	0.74	0.56	312.72***	.89
Depression	0.55	0.51	0.72	0.66	4.26*	.10
Somatization	0.38	0.38	0.67	0.66	33.96***	.38
Hostility	0.47	0.44	0.69	0.69	10.11**	.21
Anxiety	0.74	0.55	0.87	0.67	2.19	.06
Paranoid Ideation	0.70	0.63	0.89	0.75	3.64	.09
Obsession–Compulsion	0.70	0.57	0.98	0.79	9.65*	.20

*$p<.05$ **$p<.01$ ***$p<.001$.
BSI—Brief Symptom Inventory.
[a]The norms for Israeli women do not include the total symptom score (positive symptom total), and therefore, this measure was not compared.

Table 2
Significant changes in measures of psychopathology before and after-adoption (t-tests for dependent variables).

Indices	Preadoption		Post-adoption		
	Mean	SD	Mean	SD	T (38)
Positive symptom total	19.51	9.96	14.26	10.53	3.80**
Depression	3.30	3.06	2.18	2.98	2.35*
Somatization	3.78	3.82	0.22	0.30	3.12**
Paranoid ideation	3.74	3.57	2.08	2.47	2.94**

BSI—Brief symptom inventory.
*$p<.05$ **$p<.01$.

The third hypothesis of the study was that adoptive mothers show a difference in measures of psychopathology before and after adoption. We used one-tailed t-tests to test this hypothesis, where the dependent variables were the scores on the BDI, BSI, and EPDS. For the BSI, separate analyses were performed for GSI, PST, and each of the subscales. We noted a significant decrease in the BSI PST and the BSI scores for Somatization, Depression, and Paranoid Ideation (Table 2). There was also a decrease in the BDI and EPDS overall scores and in the scores for the other BSI indices, but the differences did not reach statistical significance.

Several significant findings were observed on repeated measure analysis of the effect of background variables.

– *Length of time between measurements* interacted significantly with the BSI measure of Depression, $F(2,35) = 3.36$, MSE = .13, $\eta^2 = .16$, $p < .05$. Further analyses showed that a decline in depression was associated with a long interval between the pre- and post-adoption measurements (long adoption process), $t(12) = 2.72$, $p < .05$.
– *Marital status* interacted with the BSI subscale of Anxiety, $F(2,36) = 4.65$, MSE = .12, $\eta^2 = .21$, $p < .05$. Further analysis showed that in the women who were married, there was a decline in anxiety approaching statistical significance, $t(21) = 2.06$, $p = .053$. It is possible that the borderline results were due to the small sample size ($n = 22$).
– *Ordinal status of the adopted child* interacted significantly with the GSI of the BSI, $F(1,37) = 4.96$, MSE = .03, $\eta^2 = .12$, $p < .05$. Further t-test analyses showed that the decline in the GSI occurred in women with no other children. This variable also interacted with the Obsessive–Compulsive subscale, $F(1,37) = 5.45$, MSE = .11, $\eta^2 = .13$, $p < .05$, and with the total symptom count, $F(1,37) = 5.11$, MSE = 10.25, $\eta^2 = .12$, $p < .05$.

The source of this interaction was not identified by *t*-test, probably because of the small sample size.

– *Maternal age* interacted with the Psychosis subscale on the BSI, $F(1,37)=4.13$, MSE=.17, $\eta^2=.10$, $p<.05$, and *child's age* interacted with the Obsessive–Compulsive subscale, $F(2,36)=3.42$, MSE=.11, $\eta^2=.16$, $p<.05$. In both these cases, the source of the interaction was not identified.

4. Discussion

The results of the present study indicate that there is no significant difference in the incidence of depression between adoptive and birth mothers. This finding negates the widespread assumption that postpartum depression is a direct consequence of the many and varied physiological changes that occur during pregnancy and delivery. It suggests that postpartum depression is not necessarily physiologically based, although it is most probably associated with biological factors, as even among adopting mothers, endogenous, hormone-related changes triggered by the transition to motherhood cannot be ruled out. Nevertheless, for both groups of women, we apparently need to seek alternate intrapsychic or psychosocial influences to account for postpartum depression.

This is not the first study comparing depression in women who have just given birth with women not under the influence of the effects of pregnancy and birth. For example, Cox et al. (Cox et al., 1993) administered the EPDS to 232 women within 6 months of giving birth and a control group of women who had not been pregnant or given birth in the last year, matched for age, marital status, and number of children. They found no significant between-group differences in the point prevalence of depression at six months or in the six-month period prevalence (evaluated by biannual interviews). These findings suggested that the signs of what is considered postpartum depression may actually reflect a reaction to increased stress during different stages of the life cycle (Cooper et al., 1988; O'Hara et al., 1990).

However, considering the many particular external and emotional factors that may increase stress, and the consequent depressive reaction, in the period of transition to motherhood, it remained unclear if postpartum depression is indeed characterized by unique features that distinguish it from other forms of reactive depression and justify its classification as a separate entity. Further studies are needed to determine if the same environmental and emotional factors come into play in depressed women who are after pregnancy/birth

or if their similar rates of psychopathology are explained by different factors, distinct from those involved in depression in the general population.

Because our search of the literature yielded no published comparisons of mothers before adoption with mothers before pregnancy, we analyzed our findings against the general female population of child-bearing age (Iancu et al., 2003).

It is noteworthy that in our particular series, socioeconomic status may have affected the results. Despite the absence of data on the income and occupation of our subjects, given the high price of international adoption in Israel (more than $20,000—average per capita income in Israel: $16,500 per year). It is reasonable to assume that the majority of our participants were middle class or higher and university-educated. An analysis of the average BDI score in the Israeli population found that participants whose income was less than the average were more than twice as likely to show depressive symptoms (BDI=8.15) than those whose income was average or above (BDI=4.91) (Iancu et al., 2003). Similarly, manual workers had more depressive symptoms (BDI=7.12) than subjects with clerical or sales jobs (BDI=5.08). In addition, a meta-analysis of studies in different population groups confirmed that the chances of developing depression are significantly greater in populations of lower socioeconomic status (Levy-Shiff et al., 1997. Accordingly, the individuals in our study group were probably at a relatively lower risk of depression. This assumption is further supported by studies showing that a high socioeconomic status appears to balance the unique difficulties of adopting women and offers them an advantage of robustness in terms of mental health (Gilbar and Ben-Zur, 2002).

Nevertheless, regardless of income, many difficulties accompany adoption and can heighten the risk of depression, such as lack of preparedness for the transition to parenthood (Lorant et al., 2003), coping with infertility (Koepke et al., 1991), dealing with familial differences in race, culture, or religion from that of the adopted child, and potential exposure to racist reactions by others (Domar et al., 1992).

The results of the present study showed that the study group had a similar rate of depression (BDI score >9) to the general population (25.6% vs 26%) and, surprisingly, an even lower prevalence of general psychopathological symptoms (BSI). Again, their relatively good mental health could have been at least partly attributable to their higher socioeconomic status. Accordingly, Levy-Shiff et al. (1990), in a study of the psychological profiles of 52 adopting women in the middle of the waiting period compared to 52 women

shortly before birth, found that the adopting women scored well on measures of adjustment, and their scores were similar to those for the prepartum women.

Women who adopt children via adoption agencies, as required by local law, undergo an evaluation of parental fitness. This may pose a methodological bias in comparison with the nonselected general population of women of child-bearing age. However, in Israel, between 1998 and 2006, of the total 2400 adoption requests processed, only 39 (1.7%) were rejected on the basis of the parental fitness screen. This small number did not justify the assumption of a skew in the statistical analysis [Tan, personal communication].

We noted no exacerbation of preadoption psychopathology after adoption. Indeed, there was an improvement in several measures. This finding is in agreement with an earlier study comparing biological and adoptive parents as well as step-parents (Ceballo et al., 2004). The authors found a decline in maternal depression after the child arrived, and this decline was most marked in the adoptive parents group.

In an interesting temporal study, Larsson et al. (2004) measured depression with the EPDS in 1489 women at 35 and 36 weeks of weeks of pregnancy, 6 to 8 weeks after birth, and 6 months after birth. Of the 259 (17.4%) who showed symptoms of depression at the end of pregnancy, 46.2% continued to show symptoms after birth. In a similar study in Israel, 288 women randomly sampled from a community clinic were asked to complete the BDI in week 26 of pregnancy and the EPDS 6 weeks after giving birth (Glasser et al., 1998). The authors found that two-thirds of those with depressive symptoms postpartum had been identified as being depressed already in week 26 of pregnancy. In the present study, the adoptive mothers showed a decline in a variety of indices of emotional adjustment, and no change in others, from before to after the adoption.

In conclusion, most studies of adoption focus on the adopted child and his/her adjustment to the new family. Our study sought to highlight some of the difficulties experienced by the adoptive mother herself, and how the adoption process impacts on previous or ongoing emotional difficulties experienced during different periods of life. The insights gained transcend the adoption process itself, increasing our understanding of the similar changes that another important and much larger group of women undergo: the general population of birth mothers. The similarities in the incidence and prevalence of depression and other related psychopathologies between the two groups of mothers raises questions regarding the exact nature of the purported physiological influence of childbirth on the mother's emotional state and reopens the issue of the meaning of postpartum depression.

Our study focused on mothers in general. Further factor analyses are needed to elucidate our findings, in addition to studies of the possible hormonal factors at play also in adoptive mothers. In addition, similar studies are needed on adoptive fathers, given the no-less-important influence of the changing role of fatherhood and how becoming a father affects a man's psychological make-up, within both the dyadic as well as the triadic constellation.

Adoptive mothers are required to deal with the well-known transition to parenthood, just like biological mothers, in addition to issues specific to adoption and the unique demands it makes on the family system. Improving our understanding of the difficulties facing adoptive mothers has important implications for the development of programs to properly prepare families for the process in order to ensure a healthy environment for the adopted child.

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