

# The Evaluation of Mood Status in Mothers of Infants with Infantile Colic

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## Abstract

**Objective:** The aim of this study was to evaluate mood changes in mothers of infants diagnosed with infantile colic.

**Materials and Methods:** In this prospective case-control study, mothers with infants who were referred to the Pediatric Clinic of Ministry of Health Okmeydanı Research and Training Hospital and diagnosed with infantile colic between November 2014 and February 2015 were compared with those of infants without infantile colic using the Beck Depression Inventory and a questionnaire.

**Results:** A total of 31 mothers with male infants (51%) and 30 mothers with female infants (49%) participated in the study. The mean Beck depression inventory scores were 18.3 (min 5-max 35 points; median score: 21) in the infantile colic group and 14.6 (min 5-max 33; median score: 12) in the control group. Beck depression inventory scores in the infantile colic group were significantly higher than those of control group. The mean Beck depression inventory scores were 17.0 (min 5-max 32 points; median score: 17) in mothers who had no problems during the pregnancy and 24.9 (min 5-max 35 points; median score: 25.5) in mothers who had problems during the pregnancy, respectively. Beck depression inventory scores in mothers who had problems during the pregnancy were significantly higher than those who had no problems during pregnancy.

**Conclusion:** Beck depression inventory scores in mothers with infants diagnosed with infantile colic were significant compared to the control group. Mothers of infants diagnosed with infantile colic may require psychological support.

**Keywords:** Beck depression inventory score; Infantile colic; Postpartum depression

## Introduction

Even though etiology of infantile colic remains unclear, some causes are blamed. These include gastrointestinal dysmotility, psychosocial factors and theories on immature central nervous system [1]. "Wessel criteria (rule of 3's)" is the most commonly used rule for diagnosis of infantile colic. It is defined as periods usually observed at the first 3 months, lasting at least 3 weeks for more than 3 hours per day and for more than 3 days per week. Crying episodes usually occur during the late afternoon and evening hours, and these unexplained and uncontrolled crying episodes are defined as infantile colic [2]. The incidence of infantile colic varies between 10 to 40%.

Infantile colic usually spontaneously resolves at 4<sup>th</sup>-6<sup>th</sup> months. However, continuous crying episodes with no illness or reason and the difficulty in stopping of crying may lead to postpartum depression, sleeping disorders, eating and behavior disorders in mothers [1].

Gestation is a period in which mental, physiological and social changes have been experienced. It is mentioned that the symptoms of postpartum depression usually start after 2-3 weeks following the delivery with an incidence of 10 to 15% [3]. Postpartum depression

causes mothers, infants and family members to experience various difficulties.

In our study, the mood changes in mothers with infants who were referred to the pediatric clinic and diagnosed with infantile colic were compared [4-8].

## Methods and Materials

In this prospective case-control study, mothers with infants who were referred to the Pediatric Clinic of Ministry of Health Okmeydanı Research and Training Hospital and diagnosed with infantile colic between November 2014 and February 2015 were compared with those of infants without infantile colic using the Beck Depression Inventory and a questionnaire. This study was found as ethical committee approval was obtained as per resolution no 276 dated 03.02.2012 of Ministry of Health Okmeydanı Research and Training Hospital, Clinical Studies Ethical Committee. The mothers whose infants were crying for more than 3 hours per day, for more than three days per week and for longer than three weeks (Wessel's rule of 3's) were defined as the infantile colic group versus the control group including infants without infantile colic in the study. A detailed questionnaire form about the infants was filled in by the mothers. The questionnaire contained information about the infant's age, gender, birth weight, delivery method, and health problems during pregnancy and delivery, the week of birth, the presence of comorbidity, a chronic

disease in mother, father, and other children, a history of smoking and the employment status of mother.

### Statistical Analysis

Mean, standard deviation (SD), minimum, maximum and median values, frequency and ratio values were used in the descriptive statistics of the data. The distribution of variables was measured using Kolmogorov-Smirnov test [9-11]. In the analysis of quantitative data, Kruskal-wallis, Mann-Whitney u test and independent samples student t test were used. In the analysis of qualitative data chi-square test, or Fischer's exact test in cases whose chi-square test conditions were not met, Fischer tests were used. Spearman correlation analysis was used for the correlation analysis. The analyses were performed using SPSS 22.0 software [12-14].

### Results

A total of 31 mothers with male infants (51%) and 30 mothers with female infants (49%) participated in the study. The mean age of mothers and infants were  $26.8 \pm 4.3$  years and  $2.4 \pm 0.9$  months (Range: 1-4 months, median: 2 month), respectively. The number of infants were 35 (57%) born by normal spontaneous delivery and 26 (43%) by Caesarean section. The average birth weight of infants was 3033 g (min. 2170 g-max 4000 g). Health problems were recorded in 10 (16%) mother during the pregnancy and in 2 (16%) mothers during delivery, as two mothers (3%) had comorbidity. An infant (2%) was born at 32-36 weeks of gestation; 16 (26%) were delivered at week 36-38, and 44 (72%) were delivered at 38-42 weeks. A total of two mothers (3%), two fathers (3%) and 1 (2%) of siblings had a chronic disease. 9 (15%) of mothers had history of smoking.

The mean Beck depression inventory scores were 18.3 (min 5-max 35 points; median score: 21) in the infantile colic group and 14.6 (min 5-max 33; median score: 12) in the control group. Beck depression inventory scores in the infantile colic group were significantly higher than those of control group (Table 1).

Variables	Min-Max.	Median	Mean $\pm$ SD	p
Infantile Colic Group	5.0 – 35.0	21.00	18.3 $\pm$ 8.8	0.013
Control Group	5.0 – 33.0	12.00	14.6 $\pm$ 7.6	

**Table 1:** The comparison of Beck depression inventory scores in the infantile colic and control groups.

The mean Beck depression inventory scores were 17.2 (min 5-max 35 points; median score: 17) in mothers with infants delivered by normal delivery and 19.8 (min 5-max 33 points; median score: 24) in mothers with infants delivered by Caesarean section, respectively. No significant difference was found in Beck depression inventory scores between mothers who underwent normal delivery and Caesarean-section, birth weights of infants, and means of age of mothers ( $p > 0.05$ ).

The mean Beck depression inventory scores were 17.0 (min 5-max 32 points; median score: 17) in mothers who had no problems during the pregnancy and 24.9 (min 5-max 35 points; median score: 25.5) in mothers who had problems during the pregnancy, respectively. Beck depression inventory scores in mothers who had problems during the pregnancy were significantly higher than those who had no problems during pregnancy ( $p < 0.05$ ).

The mean Beck depression inventory scores were 18.3 (min 5-max 33 points; median score: 20.5) in non-employed mothers and 18.4 (min 5-max 35 points; median score: 21) in employed mothers, respectively. No significant difference was found in Beck depression inventory scores between mothers who underwent normal delivery and Caesarean-section, birth weights of infants, and means of age of mothers ( $p > 0.05$ ).

### Discussion

Infantile colic causes feelings of anger and exhaustion in the parents. Continuous crying, chronic stress and sleeping disorders increase postpartum depression, nervousness, anxiety, and guilt feelings (4). Prolonged duration of colic episodes was reported to be more significant than the frequency of episodes in infants whose mothers had postpartum depression (5). Certain mood problems were reported in mothers of infants with infantile colic (6, 7). In our study, Beck depression inventory scores in mothers of infants diagnosed with infantile colic were significantly higher than the scores of control group.

Aderibigbe et al. conducted a postpartum depression study in 277 Nigerian mothers at postpartum 6th week (8). In this study, the association of Edinburgh Postnatal Depression Scale scores with age was revealed as statistically insignificant. Georgiopoulos et al. reported that younger age is a risk factor for postpartum depression (9, 10). In our study, no significant difference was found between Beck depression inventory scores and ages of mothers with infants diagnosed with infantile colic.

In the studies by Atasoy et al. and Ekuklu et al., no statistically significant association was observed between delivery method and frequency of postpartum depression (11, 12). In our study, Beck depression inventory scores in normal delivery and Caesarean-section did not significantly differ as well.

In a study performed by Korja R et al., it was reported that anxiety and depression levels were found to increase in mothers with premature infants (13). In our study, no significant difference was found in Beck depression inventory scores between infants delivered before and after week 38. In our study, lack of significant difference was evaluated as the result of less number of premature infants.

In studies investigating the association between mother's job and postpartum depression, different results were found. Other studies from Turkey revealed a significant association between the frequency of postpartum depression and non-employed status of the mothers (14, 15). In the study performed by Atasot et al., the frequency of postpartum depression in employed mothers was found to be higher than those of unemployed mothers (11). In our study, no significant difference in Beck depression inventory scores was observed between employed and unemployed mothers.

In the study by Danacı et al., the frequency of depression and anxiety in subjects with chronic disease was higher than those with no chronic disease (16). In our study, Beck depression inventory scores did not significantly differ in relation with the presence of chronic diseases. That may be different than other studies due to the limited number of mothers with chronic disease in our study.

In another study, stress, husband's smoking status and lack of social support to mothers were found to be related to smoking status of mothers during the postpartum period (14). In our study, Beck

depression inventory scores did not significantly differ by the smoking status of mothers.

In conclusion, there is a relationship between postpartum depression and infantile colic. Beck depression inventory scores in mothers with infants diagnosed with infantile colic were significant compared to the control group. Mothers of infants diagnosed with infantile colic may require psychological support to reduce their anxiety.

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