Archives of Psychiatric Nursing xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Archives of Psychiatric Nursing

journal homepage: www.elsevier.com/locate/apnu

# Evaluation of Depression and Anxiety Levels in Mothers of Babies' Following Due to Premature Retinopathy☆

Nagihan Saday Duman[a], Emel Sarı Gökten[b], Rahmi Duman[c,*], Reşat Duman[c], Sadık Görkem Çevik[d]

[a] Department of Child and Adolescent Psychiatry, Afyonkarahisar State Hospital, Afyonkarahisar, Turkey
[b] Department of Child and Adolescent Psychiatry, Yüksek İhtisas Research and Training Hospital, Bursa, Turkey
[c] Department of Ophthalmology, Afyon Kocatepe University, Afyon, Turkey
[d] Department of Ophthalmology, Yüksek İhtisas Research and Training Hospital, Bursa, Turkey.

ARTICLE INFO

*KEYWORDS:*
Premature retinopathy
Babies
Mother
Depression
Anxiety

ABSTRACT

*AIM:* There are significant increases in the survival rates of premature babies owing to rapid developments in medical technology. As the number of premature babies that can survive in neonatal intensive care increases, so does the frequency of complications due to prematurity. The aim of this study was to investigate the depressive and anxiety symptom levels, and factors affecting these, in mothers of infants who were followed up owing to a diagnosis of premature retinopathy (ROP).

*METHODS:* This study involved 78 consecutive mothers of premature babies, who applied to the ophthalmology clinic between February and May 2016. The mothers completed the Sociodemographic Information Form, Symptom Check List (SCL-90-R), Edinburgh Postnatal Depression Scale (EPDS), and State-Trait Anxiety Scale (STAI).

*RESULTS:* The mean scores of SCL-90-R Depression, Anxiety, and Global Severity Index (GSI) subscales, as well as STAI-1 and STAI-2 were higher in mothers of ROP-diagnosed babies. Factors affecting maternal depression and anxiety levels were the absence of maternal social support and the level of premature retinopathy. Mothers whose babies are diagnosed with ROP may have high levels of depression and anxiety.

*CONCLUSION:* The psychiatric follow-up, treatment, and social support provided to the mother, and regular follow-up of the baby after birth are important both for the mental health of the mother and the healthy development of the baby. Further research is needed to understand the role of parental mental health problems on the development and treatment processes of infants with premature retinopathy.

## INTRODUCTION

All live babies born before the completion of the thirty-eighth gestational week are defined as “premature infants” (Murray & McKinney, 2006). An average of 1.5 million live births occur each year in Turkey, and on average 10% of this number in Turkey and 11% in the United States are premature births (Stoll & Kiegman, 2000). In recent years, along with rapid developments in medical technology, there has been a significant increase in the survival rate of premature babies. Currently, up to 70% of premature infants weighing < 1500 g, and up to 95% of those weighing between 1500 g and 2500 g, survive (Pine et al., 1995). As the number of smaller premature babies that can survive in newborn intensive care units increases, so does the frequency of complications due to prematurity (Roth, 1977). One of these complications is premature retinopathy (ROP) which is one of the leading causes of childhood blindness in countries where little neonatal intensive care is available. Despite the increased availability of effective screening and early treatment, there is an increase in the frequency of ROP owing to the growing number of infants born prematurely and with low birth weight who can be kept alive (Quiram & Capone Jr, 2007).

The addition of a new baby to the family causes changes in family structure and requires family members to take on new roles. Caring for a baby who has a health problem can create additional stress within the family. As the difference between the new parents' expectations and reality becomes clearer, the emotional reactions of the family can also increase (McConkey et al., 2008; Yıldırım, 2007). If ROP is not treated it can result in permanent visual loss, and for this reason, premature babies' mothers can experience intense stress and anxiety. Although

☆ This work is occurred in Bursa Yüksek İhtisas Research and Training Hospital.

* Corresponding author at: Afyon Kocatepe University, Turkey.
*E-mail address:* drrahmi42@yahoo.com (R. Duman).

https://doi.org/10.1016/j.apnu.2017.12.011
Received 10 February 2017; Received in revised form 30 November 2017; Accepted 13 December 2017

previous studies have investigated depression and anxiety levels in mothers of premature babies, the levels of depression and anxiety in mothers of ROP-diagnosed babies have not been examined. In this study we investigate the relationship between levels of depression and anxiety in mothers of infants who were followed up for ROP and a range of variables, including maternal age and education level, the presence of social support, and ROP phase.

## MATERIAL AND METHODS

One hundred twelve mothers of premature babies included in this study. Thirty-four subjects excluded from this study because of psychiatric or systemic psychological disorder. This study included 78 consecutive mothers of premature babies who applied to the ophthalmology clinic between February 2016 and May 2016. After explaining the study, informed consent was gained from the mothers who agreed to participate in the study. Participating mothers were asked to complete the Sociodemographic Information Form, Symptom Check List (SCL-90-R), Edinburgh Postnatal Depression Scale (EPDS), and State-Trait Anxiety Scale (STAI). Mothers were excluded from the study if there was a psychiatric or systemic psychological disorder, such as psychosis or dementia, present at the time the study, or if there was evidence the mother was misusing alcohol or psychoactive substances. Mothers included in the study were divided into two groups: mothers of ROP-diagnosed babies were identified as the first group (n = 38), and mothers of non-ROP-diagnosed babies formed the second group (n = 40). SPSS 21 was used for the statistical analysis. Student *t*-test and Mann-Whitney *U* test were used to assess the distribution of the parameters and descriptive statistics (mean, standard deviation, frequency) were calculated. Pearson's Chi-square test was used for comparison variables having categorical values with groups. A $p$ value $<$ 0.05 was considered statistically significant. This study was approved by Hospital Local Ethics Committee with the report number of 2011-KAEK-25 2016/01-05.

## DATA COLLECTION TOOLS

### *SYMPTOM CHECK LIST (SCL-90-R)*

This scale was developed by Derogatis to determine the distribution and severity of psychological symptoms in subjects in both clinical and research settings (Derogatis, 1977). The scale consists of 90 items scored on a five-point Likert scale between 'no' and 'very much' and is based on self-report. There are 9 subscales that reflect 9 distinct symptom groups: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. In addition, the scale measures 3 indices of general psychological distress: Global Severity Index (GSI), Positive Symptom Distress Index, and Positive Symptom Total. The validity and reliability studies in Turkey were carried out by Dağ et al (Dağ, 2001). In this study, the Depression, Anxiety, and GSI subscales were used.

### *EDINBURGH POSTNATAL DEPRESSION SCALE (EPDS)*

The scale developed by Cox and Holden (1987) and is used to determine the risk, and measure the intensity, of postpartum depression (Cox & Holden, 1987). It is a self-assessment scale that contains 10 questions. The validity and reliability of the scale for Turkish populations was measured by Engindeniz. The threshold score for diagnosis according to EPDS was calculated as 12/13 (Engindeniz et al., 1996).

### *STATE-TRAIT ANXIETY SCALE (STAI)*

We measured anxiety using the State-Trait Anxiety Inventory-STAI developed by Spielberger. The scale consists of two parts: STAI-1, which measures state anxiety level, and STAI-2, which measures the level of trait anxiety. The scale was adapted to Turkish in 1974–77, and validity and reliability studies were conducted. The scale contains both direct and inverted statements, and is scored by the total points obtained from the reversed expressions being subtracted from those obtained from the direct expressions. A higher score indicates a higher level of anxiety (Öner & Le Compte, 1982).

## RESULTS

78 mothers of babies who were followed up for prematurity were included. Mothers included in the study were divided into two groups: mothers of ROP-diagnosed babies were identified as the first group (n = 38), and mothers of non-ROP-diagnosed babies formed the second group (n = 40).

The mean age of the first group was 28.47 years ( ± 4.47 years) and the mean age of the second group was 28.10 years ( ± 4.40 years). There was no significant difference in maternal age between the groups ($p$ = 0.89). Infants included in the study were compared in terms of gestational week of delivery and birth weight; the average gestational week of delivery for infants in the ROP-diagnosed group was 32.74 ( ± 3.07) weeks, while their average birth weight was 1907 ( ± 620) grams; the mean gestational week of delivery for infants in the non-ROP-diagnosed group was 32.35 ( ± 3.11) weeks, and their average birth weight was 1939 ( ± 616) grams. There was no significant difference between the groups ($p$ > 0.05) on either of these factors. Finally, there was no significant difference between the groups on maternal education level and occupation ($p$ > 0.05).

We examined mothers' social support and found that 22 of the mothers in the first group received support from their spouses, mother, or mother-in-law, while 16 had no social support; 25 of the mothers in the second group received social support, while 15 did not. There was no statistically significant difference between groups in terms of social support ($p$ = 0.67). The sociodemographic characteristics of the mothers participating in the study are summarized in Table 1.

Comparing the group average scores on the SCL-90-R Depression, Anxiety, and GSI as well as EPDS, STAI-1, and STAI-2, it was found that mothers of ROP-diagnosed babies scored significantly more highly on these measures than mothers of non-ROP-diagnosed babies (Table 2).

When factors affecting anxiety and depression levels in mothers of infants followed up for prematurity were examined, the mean scores on SCL-90-R Depression, Anxiety, and GSI as well as EPDS, STAI-1, and STAI-2 were not statistically different from other premature delivery

**Table 1**
Sociodemographic characteristics of mothers.

| Maternal education level | 1.group (ROP-diagnosed) (n) | 2.group (non-ROP) (n) | *p* |
|---|---|---|---|
| 0–4 years | 11 | 10 | 0.96 |
| 5–8 years | 10 | 12 | |
| 9–11 years | 11 | 11 | |
| 12 years and over | 6 | 7 | |
| Maternal occupation | | | |
| Housewife | 32 | 31 | 0.88 |
| Official | 3 | 5 | |
| Employee | 2 | 3 | |
| Other | 1 | 1 | |
| Social support | | | |
| Yes | 22 | 25 | 0.67 |
| No | 16 | 15 | |
| Other preterm delivery narratives | | | |
| Yes | 3 | 7 | 0.20 |
| No | 35 | 33 | |
| Gestational narratives | | | |
| Planned | 17 | 20 | 0.64 |
| Surprised | 21 | 20 | |

(ROP-diagnosed = mothers of ROP diagnosed babies, non-ROP = mothers of non-ROP babies)