

## **The occurrence of depression and nursing intervention for mothers of preterm infants.**

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### **Abstract**

**Objective:** To describe the occurrence of depression in mothers of preterm infants and the impact of nursing interventions on them.

**Methods:** This was a descriptive correlational study. We used Psychosomatic Symptom Checklist (SCL-90), Zung Self-Rating Depression Scale (SDS) to evaluate 60 mothers of preterm infants who were recruited from January 2011 to December 2014 in our hospital. Then we used statistical software for statistical analysis of all the data.

**Results:** 46.7% mothers of preterm infants had depression, which mainly was mild and moderate depression. The incidence was significantly higher than the national norm, the difference was statistically significant ( $P < 0.05$ ). And quality psychological nursing care can effectively improve depression. After four weeks of psychological nursing care, the intervention group's SCL-90 psychological factor scores and SDS score were significantly lower than those of the control group, the differences were statistically significant ( $P < 0.01$  or  $0.05$ ).

**Conclusion:** The level of depression in mothers of preterm infants is higher than the national norm. Quality psychological nursing care can effectively alleviate depression, which justifies its worthy for promotion in clinical application.

**Keywords:** Preterm infant, Parturient, Depression, Nursing intervention.

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### **Introduction**

Preterm infants are babies born at a gestational age between 28 weeks and 37 weeks, commonly with a birth weight lower than 2500 g [1]. In recent years, the occurrence of preterm infants is increasing year by year, and the rate of that in China was 9.9% based on a large scale epidemiologic study [2]. Due to lower gestational age, less body weight, and dangerous disease, preterm infants are easy to get complications [3]. Once preterm infants get complications, the disease will be persistent easily, the symptoms difficult to improve, the prognosis bad, and the treatment cost higher, bringing heavy financial burden and mental stress to their mothers and families, resulting in higher incidence of maternal depression. It is reported that depression may lower body's disease resistance, affect patients' immune function, nutritional status, clinical efficacy, prognosis, and life quality. According to the foreign study [4], it is known that depression impacts body's immunity, so that can influent incidence and mortality of diseases. In addition, depression is also a major independent predictor of parturient women's life quality [5]. Some studies [6,7] show that psychological nursing interventions not only can relieve negative emotionality (such as depression, anxiety, etc.) due to stress life events, but also indirectly impact psychological health and enhance individual self-efficacy, and directly affect individual' health through medium processes including thinking, choosing, and

motivation. This study analyzes and researches the depression in mothers of preterm infants and the effect of nursing intervention on it retrospectively.

### **Materials and Methods**

#### **Materials**

A total of 60 mothers of preterm infants delivered babies in our hospital from January 2011 to November 2014, age ranged from 20 to 37 years, ( $27.55 \pm 7.75$ ) years in average. Mothers were eligible for the study if they delivered babies when the gestational age was less than 37 weeks with their babies' recovery and discharge and were aged  $>18$  years and had grade school education at least and if they were consciousness and can communicate with others through words and language and if they joined in the questionnaires voluntarily. Mothers were not eligible for the study if their newborns had serious dysfunction of heart, lung, brain and kidney or severe congenital abnormalities or genetic disorders; they took tricyclic antidepressants and other antidepressant drugs more than one week over the past three months.

#### **Psychosomatic symptom checklist (SCL-90)**

SCL-90 had 90 items in total, and measure time was 30 min.

### Znug self-rating depression scale (SDS)

Znug SDS with 20 subjects was used to judge depression condition, and the measure time was 10 min.

### Interventions

All patients signed an informed consent. The control group received usual care and symptomatic treatment, but the intervention group, apart from usual treatment, were given psychological nursing intervention, of which major methods included supportive psychotherapy and cognitive therapy. The premise of supportive psychotherapy was to develop a good treatment relationship with patients, acquire their trust, estimate their common condition, collect their data, and analyze their psychological problems. Thus, proper supportive psychotherapy measures were taken, such as listening, caring and sympathy, encouraging and comfort, explanation and enlightenment, guidance and persuasion, and proper catharsis. Cognitive therapy was used to know patients' knowledge about preterm labor based on a cognitive list designed previously, and then found their wrong cognitive, so that we could amend it in proper. The questions proposed by these mothers would be answered in detail, making them aware of their own wrong cognitive and then abandon it. What's more, nurses communicated with these patients positively to comprehend their mental features and needs, aiming to give targeted intervention, and introduced occurrence mechanism, pathological characteristics, treatment, and prognosis of preterm labor to patients and their families in an understandable way, eliminating their fears. Nurses also replied patients' and their families' issues patiently, offered sympathy, encouragement, and support to them, and helped these mothers gain confidence in taking good care of their newborns.

### Evaluation methods

An intervention team for mothers of preterm infants with psychological problems was build, of which members included doctors and nurses of gynecology department in our hospital, and a psychiatrist. The psychiatrist trained the investigators before survey, making them master inquiring skills and methods of writing questionnaire, unifying investigation methods. When investigating, investigators clarified the study purposes and meanings to these mothers, clearing away their worries, and guided mothers to fill the questionnaire, making them complete it one time independently, and collected the questionnaire on the spot and checked its integrity, then manually entered statistical software for analysis. Two evaluations before and after intervention for each patient were finished by the same investigator to reduce information bias produced by investigators. Patients participated in psychological investigation test in three days after enrollment, and received the 2<sup>nd</sup> test after accomplishing psychological nursing intervention, to assess the effect of nursing intervention on mothers of preterm infants with depression.

### Statistical analysis

The data was processed with statistical analysis software SPSS17.0 IBM. All quantitative data were expressed with  $\bar{x} \pm s$  and the statistical significance was defined as  $P < 0.05$ .

### Results

#### The occurrence of depression in mothers of preterm infants

The outcomes indicated that 46.7% mothers of preterm infants had depression, which mostly was mild and moderate, account for 21.7% respectively, two cases with severe depression, accounting for 3.3%.

**Table 1.** Occurrence of depression in mothers of preterm infants.

Items	N (%)	Min	Max	$\bar{x} \pm s$
No depression	32 (53.3)	23	39	32.15 $\pm$ 4.21
Mild depression	13 (21.7)	40	47	43.34 $\pm$ 2.15
Moderate depression	13 (21.7)	48	55	52.00 $\pm$ 2.22
Severe depression	2 (3.3)	57	63	59.55 $\pm$ 3.01

#### Comparison on basic situation between intervention group and control group

Among mothers of preterm infants enrolled, their age ranged from 20~37 years, (27.55  $\pm$  7.75) years in average. 22 were workers, 11 farmers, 17 officers, and 10 did other occupations. 23 had either an undergraduate, professional or graduate degree, 39 had high school level of education, and 21 had junior high school level. Patients' basic situation was showed in Tables 2 and 3. After statistical analysis, there was no difference in the composition of educational level and occupational structure ( $P > 0.05$ ) between the intervention group and control group. Both groups were comparable.

**Table 2.** Composition of educational level of patients in two groups.

Group	University	High school	Junior school	Sum	$\chi^2$	P
Control group	10	12	8	30	1.25	0.55
Intervention group	13	9	8	30		
Sum	23	39	21	60		

**Table 3.** Occupation structure of patients in two groups.

Group	Worker	Office	farmer	Other occupations	Sum	$\chi^2$	P
Control group	9	9	6	6	30	1.28	0.73
Intervention group	13	8	5	4	30		

Sum	22	17	11	10	60
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**Comparison on the scores of SCL-90 psychological factors of patients between intervention group and control group on admission**

It was known that the score difference of each SCL-90 psychological factor between intervention group and control group on admission had no significance (P>0.05) (Table 4).

**Table 4.** Comparison on the scores of SCL-90 psychological factors of patients between intervention group and control group on admission.

Psychological Factors	Intervention Group	Control Group	t	P
Somatization	1.32 ± 0.35	1.45 ± 0.34	1.456	0.534
Compulsion	1.45 ± 0.34	1.80 ± 0.37	2.355	0.673
Interpersonal	1.62 ± 0.67	1.59 ± 0.62	2.217	0.265
Depression	1.67 ± 0.34	1.65 ± 0.58	2.016	0.654
Anxiety	1.73 ± 0.59	1.78 ± 0.61	1.048	0.627
Hostility	1.45 ± 0.34	1.65 ± 0.62	2.069	0.523
Fear	1.47 ± 0.57	1.44 ± 0.61	1.017	0.415
Paranoid	1.52 ± 0.53	1.57 ± 0.54	1.015	0.534
Mental symptom	1.53 ± 0.61	1.51 ± 0.51	2.014	0.245

**Comparison on the scores of SCL-90 psychological factors between intervention group and control group four weeks after admission**

The comparison on the scores of SCL-90 psychological factors between intervention group and control group four weeks after admission were seen in Table 5. The P value of somatization, compulsions, depression, anxiety, and mental symptoms were less than 0.01 that of interpersonal relationship, hostility, fear, and paranoid were less than 0.05, having a statistic difference.

**Table 5.** Comparison on the scores of SCL-90 psychological factors between intervention group and control group four weeks after admission.

Psychological Factors	Intervention Group	Control Group	t	P
Somatization	1.31 ± 0.41	1.61 ± 0.52	6.215	0.003
Compulsion	1.53 ± 0.44	1.71 ± 0.51	9.214	0.001
Interpersonal relationship	1.41 ± 0.39	1.67 ± 0.48	8.234	0.025
Depression	1.67 ± 0.34	1.65 ± 0.58	6.259	0.003
Anxiety	1.40 ± 0.47	1.72 ± 0.54	8.741	0.004
Hostility	1.46 ± 0.44	1.67 ± 0.55	8.255	0.036
Fear	1.32 ± 0.48	1.42 ± 0.49	7.025	0.049
Paranoid	1.29 ± 0.49	1.60 ± 0.59	5.984	0.045

Mental symptoms	1.25 ± 0.52	1.67 ± 0.55	6.014	0.002
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**Comparison on SDS scores between intervention group and control group on admission**

The means and standard deviation of SDS of patients in intervention group and control group on admission were seen in Table 6. Compared the SDS scores of the intervention group and control group respectively, there was no statistical difference (P>0.05).

**Table 6.** Comparison on SDS scores between intervention group and control group on admission.

	Intervention group	Control group	t	P
SDS	50.34 ± 10.35	56.45 ± 11.02	0.245	0.653

**Comparison on SDS scores between intervention group and control group four weeks after admission**

The means and standard deviation of SDS in intervention group and control group on admission were seen in Table 7. Compared the SDS scores of the intervention group and control group respectively, it was known that the scores in the intervention group were much lower than that in the other groups, the difference has significance (P<0.05).

**Table 7.** Comparison on SDS scores between intervention group and control group four weeks after admission.

	Intervention group	Control group	t	P
SDS	37.25 ± 11.28	45.25 ± 9.25	6.298	0.014

**Discussion**

Preterm infants refer to babies born at a gestational age between 28 weeks and 37 weeks, commonly with a birth weight lower than 2500 g. In recent years, the occurrence of the preterm infants is increasing year by year, and the rate of that in China was 9.9% based on a large scale epidemiologic study [2]. Due to lower gestational age, less body weight, and dangerous disease, preterm infants are easy to get complications. Once they get complications, the disease will be persistent easily, the symptoms difficult to be alleviated, the prognosis bad, and the treatment cost higher, bringing heavy financial burden and mental stress to their mothers and families. Hence, among the mothers of preterm infants, the occurrence of depression is higher [8-10].

According to the foreign study, it is known that 55% mothers of preterm infants suffer depression [11]. Our study shows that 46.7% this kind of mothers have depression. The foreign study includes patients hospitalized and those non-hospitalized, so the outcomes of these two studies are thought to be similar. The total depression score of the mothers of preterm infants is 39.45 ± 7.67 before intervention, much higher than that of the national norm (33.46 ± 8.55), this finding is significant

( $P < 0.05$ ). It indicates that the depression level in the mothers of preterm infants is much higher than the national norm.

In addition, it is known that mothers' mental symptoms relieve much after psychological nursing care, which means psychological nursing intervention can ease their mental symptoms. The score of SCL-90 psychological factors between the intervention group and control group before interventions has no statistical significance ( $P > 0.05$ ). With four weeks' intervention, the score of each psychological factor in the SCL-90 scores has difference. And the P value of somatization, compulsions, depression, anxiety, and mental symptoms were less than 0.01 that of interpersonal relationship, hostility, fear, and paranoid were less than 0.05, having a statistic difference. What's more, this study also adopts Zung SDS to assess depression symptoms. The results show that the SDS has no difference between two groups before psychological intervention ( $P > 0.05$ ). But after four weeks' intervention, compared with the control group, the SDS scores of the intervention group decreases more, this finding is significant ( $P < 0.05$ ).

This study also indicates that the depression level in mothers of preterm infants is higher than that in healthy subjects in China, which means preterm labor severely damages psychological health. Therefore, nurses should take positive action to interfere in patients' mental health problems and implement good psychological nursing intervention to them. Moreover, proper psychological nursing care may help to settle mental problems of mothers of preterm infants. Therefore, in the light of these mothers' specific mental condition, the nurses should adopt appropriate psychological nursing to provide them emotional support, information, and behavioral support. Patients' worries and fears are eliminated by emotional support. Information can make patients know relative knowledge about the disease and its treatments, and then let them face the disease and cooperate positively with medical workers [12-16]. Patients' negative emotion, such as anxiety, depression, pessimism, and fear, also can be cared for through behavioral support. Beside, nurses should encourage these mothers to seek social help, which is a key to improve their life quality and long-term prognosis. A study in America finds, psychological intervention can enhance the psychosomatic symptom and life quality of mothers of preterm infants [17,18]. Zhang Yuxia [19] claims that in China, beside the common symptomatic treatment, the mothers of preterm infants should also receive psychological intervention based on their specific condition. This study shows that the live quality of the intervention group is improved more compared with the control group and pre-intervention.

In a conclusion, the depression level in the mothers of preterm infants is much higher than national norm, and good psychological nursing intervention can relieve depression effectively, deserving to be spread in clinical.

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