Original Article

Effects of nursing with information support and behavior intervention on lactation and breastfeeding success rate for primiparas

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Abstract: Objective: To improve the breastfeeding status of primipara, including the amount of breast milk secretion and breastfeeding rate, information support and behavior intervention were evaluated in this study. Methods: One hundred primiparas were recruited from March 2016 to March 2017. The participants were divided into intervention group and control group (50 cases in each group) by random number table approach. Routine treatment was employed for both groups. For the intervention group, personalized information support and behavioral intervention were used. The self-rating anxiety scale (SAS), Edinburgh postnatal depression scale (EPDS), and breastfeeding knowledge scale were filled out by primiparas to evaluate the anxiety, depression and breastfeeding knowledge pre- and postpartum. The amount of breast milk secretion and status of breastfeeding were also assessed. Results: After behavior intervention, the SAS score (38.8±4.9) and EPDS score (5.0±1.9) in the intervention group were significant lower (P<0.05) than that in the control group (41.1±5.6 and 6.6±2.4, respectively). Moreover, after behavior intervention, the SAS and EPDS scores were significant lower than that before intervention (42.9±5.4 and 7.3±2.4, respectively) in the intervention group. The scores of breastfeeding knowledge in the both groups after intervention were significantly higher than that before intervention. After intervention, the breastfeeding knowledge (95.7±9.3) in intervention group was significantly higher (P<0.05) than that in control group (84.9±9.9). The amount of lactation in intervention group was significant more (P<0.05) than that in control group. The breastfeeding rate in the intervention group was significant higher (P<0.05) than that in the control group. There were 62.0% for exclusive breastfeeding, 4.0% for bottle feeding, and 34.0% for combined the two. For the exclusive breastfeeding rate, intervention group (62.0%) was significantly higher (P<0.05) than that in the control group (32.0%). Conclusion: Information support and behavior intervention treatment could effectively improve anxiety and depression, breastfeeding knowledge, lactation, and breastfeeding rate in primipara.

Keywords: Breastfeeding, primipara, information support, behavior intervention

Introduction

Breast feeding is the safest and optimal feeding mode for infant growth [1]. Breast milk is the most ideal natural and nutritious food. It not only promotes the growth and development of infants, but also protects the baby from diseases. Also, the breast feeding can improve maternal postpartum recovery [2, 3]. Due to the lacking of breast feeding experience and knowledge of primipara, several negative emotions (such as anxiety, depression, lost the confidence of the breastfeeding) were emerged during the problems and confusion appeared. Moreover, it would induce the lacking of breast feeding, and inflicting the health of infant [1]. The previous study showed that, several aspects (including knowledge, supporting and encouragement of breastfeeding, professional working, cesarean section, etc.) effected the breastfeeding, and induced the decreasing of breastfeeding rate [4-6]. Personalized information supports for breastfeeding would provide counselling for mothers, and improve the awareness of breastfeeding [7, 8]. Behavioral intervention could effectively promote the se-
Information support and behavior intervention for breastfeeding rate

Table 1. Participant information of two groups

<table>
<thead>
<tr>
<th>Item</th>
<th>Intervention group (n=50)</th>
<th>Control group (n=50)</th>
<th>t/X^2</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>28.0±3.7</td>
<td>27.3±3.8</td>
<td>1.015</td>
<td>0.313</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td>0.162</td>
<td>0.687</td>
</tr>
<tr>
<td>High school or less</td>
<td>21</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College or above</td>
<td>29</td>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family income (dollars)</td>
<td></td>
<td></td>
<td>0.220</td>
<td>0.896</td>
</tr>
<tr>
<td>&lt;450</td>
<td>13</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>450-750</td>
<td>20</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;750</td>
<td>17</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivery mode</td>
<td></td>
<td></td>
<td>0.161</td>
<td>0.688</td>
</tr>
<tr>
<td>Natural birth</td>
<td>28</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caesarean section</td>
<td>22</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td>0.426</td>
<td>0.808</td>
</tr>
<tr>
<td>Company employee</td>
<td>31</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freelancer</td>
<td>17</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breastfeeding guidance</td>
<td></td>
<td></td>
<td>0.543</td>
<td>0.461</td>
</tr>
<tr>
<td>Yes</td>
<td>45</td>
<td>47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Information support: The breastfeeding knowledge and the request of pregnant women was evaluated after admission. According to the assessment results, the information support scheme was developed [7]. Health education for breastfeeding knowledge and information was provided, including the propaganda column in ward, breastfeeding guidebooklets, breastfeeding class, and one-to-one breastfeeding advice. The good relationship and effective communication with pregnant women was established and maintained. The confidence of breastfeeding and psychological status was understood timely. The health education was strengthened when less confidence of participant was appeared. The benefits and approaches of breastfeeding were explained. The mothers who owned experience of breastfeeding were invited and gave talks to improve the confidence of participants.

Medication scheme

Both groups were given routine obstetric care. For the intervention group, personalized information support and behavioral intervention treatment were performed as follows.

Participant information

This study has got approval from local ethical committee. One hundred primiparas were recruited from March 2016 to March 2017 in this study. The inclusion criteria were consisted of (A) from 20 to 35 years-old, (B) birth of a single child with a gestational age of 37 weeks to 42 weeks, (C) willing to breastfeed, and understanding and signing the informed consent, (D) education levels with junior high school or above. The exclusion criteria consisted of (A) persons with serious illness, (B) persons with mental illness or mental disorders, (C) not willing to join in this study. The participants were divided into the intervention group and control group (50 cases in each group). There were no significant differences (all \( P > 0.05 \)) in age, education level, family income, delivery mode, occupation, and instructions of breastfeeding between the two groups (Table 1).
ed the communication, counseling and learning for participants. The problems of breastfeeding could be discussed and solved by certain specialists in time [7]. The public account on mobile website was built. The breastfeeding knowledge and new progress were published regularly. It provided a quality learning platform for participants.

**Behavior intervention:** The guidance of the breastfeeding was taught as follows. Early exposure between maternal and infant was performed after birth. Within 30 min after birth, the nurse demonstrated the correct breastfeeding method to help the infant intake the breast milk, and promote the lactation of the mother. The breastfeeding skills (such as correct posture) of the mother were guided. The nurse also helped the infant to learn the correct and effective action for ingestion breast milk [8].

The guidance of getting out the bed at early stage, and moderate activity of primiparas were proceeded. To improve the postpartum recovery and gastrointestinal peristalsis, the primiparas were encouraged to get out the bed at early stage, and perform moderate activity. It would improve the ingestion foods of primiparas, and promote the milk secretion [6]. To feel more joy of motherhood, and build the confidence for taking care of infant, the primiparas were encouraged to participate in neonatal care [10].

The guidance of daily life for primiparas were carried out as follows. The instruction of dietary nutrition was performed to improve the breast milk secretion. Protein-rich and easily absorbed diet (such as fish and chicken soup) was recommended. To uptake various nutrients, fresh fruits were also ingested in the diet [8]. Meanwhile, adequate sleep and rest was executed during the treatment.

The instruction of breast cleaning and massage was guided to prepare the lactation. After hot compress of wet towel for 20 min, the longitudinal massage was performed along the mammary ducts through the thumb, index and middle fingers. For the mammary areola, longer time (10 min for each massage) was recommended to promote mammary gland tube patency, which would convenient the infant for uptake the breast milk [6]. To overcome the breastfeeding issues (including breast engorge-ment and bloating, lactiferous duct blocking, mastitis, and nipple pain), appropriate solutions were instructed for the primiparas.

**Treatment effectiveness evaluation:** The self-rating anxiety scale (SAS), Edinburgh postnatal depression scale (EPDS), and breastfeeding knowledge scale were filled out by primiparas when they arrived at hospital and postpartum 42 days respectively. The lists for investigation were recovered on the spot after carefully scanning for the missing items.

For the list of SAS, 20 items with 4 grades were recorded [11]. It was used to evaluate the subjective feelings of patients for anxiety. The frequency of the symptoms was measured as the main evaluation item. The scoring criteria for each item was shown as follows from 1 to 4. One indicated that no or very low frequency. Two demonstrated that the low frequency. Three indicated the relative high frequency, whereas 4 demonstrated the very high frequency or always anxiety. The maximal reference standardized score of SAS was 50. The higher score indicated the worse symptoms of anxiety.

For the list of EPDS, 10 items with 4 grades were measured to assess the postnatal depression of participants [12]. The items included emotion, pleasure, self-blame, depression, fear, insomnia, coping ability, sadness, crying and self-injury. Four grades (from 0 to 3) were
The investigation of breastfeeding was reviewed postpartum 42 days. The types of feeding (including breastfeeding, bottle feeding or combining the two) were recorded.

**Statistical analysis:** SPSS 17.0 software was used for data analysis. The data was expressed by mean ± standard deviation (mean ± SD). The comparison between groups was conducted with independent sample t test. The counting data was tested by $X^2$. $P<0.05$ indicated statistically significant difference.

**Results**

**Effects of information supports and behavioral intervention for anxiety**

After information supports and behavioral intervention for primiparas, there was significant lower SAS score ($P<0.05$) in intervention group than that in control group. Compared with the SAS score before supports and intervention, the anxiety was significantly improved ($P<0.01$) after the treatment (Table 2).
Information support and behavior intervention for breastfeeding rate

Effects of information supports and behavioral intervention for depression

In this study, there was significant lower EPDS score (P<0.01) in intervention group than that in control group after the information supports and behavioral intervention. The depression was significantly improved (P<0.01) after the treatment, when compared with that before the information supports and behavioral intervention (Table 3).

Effects of information supports and behavioral intervention for breastfeeding knowledge scale

The breastfeeding knowledge scales of intervention and control groups were significantly improved (both P<0.05) than that before the behavior intervention or routine treatment. There was a significant higher score of breastfeeding knowledge (P<0.01) in intervention than that in control group (Table 4).

Effects of information supports and behavioral intervention for amount of breast milk secretion

There was significant higher amount of breast milk secretion (P<0.05) in intervention group than that in control group. The data are shown in Table 5.

Effects of information supports and behavioral intervention for breastfeeding rate of primiparas

In this study, there was significant higher (P<0.05) breastfeeding rate (including breastfeeding only and combined bottle feeding) in intervention group than that in control group. There were 62.0% breastfeeding, 4.0% bottle feeding, and 34.0% combining the two in the intervention group. Moreover, in intervention group, the breastfeeding only rate showed significant higher (P<0.05) than that in control group. The data are shown in Table 6.

Discussion

The essential, high-quality nutrition could be provided by breast milk. It will improve the growth and development of infants, and promote the immunity and health of infants [13, 14]. However, the situation of breastfeeding still need to be improved now. In the previous report, the breastfeeding rate was only 18.9% within six months after birth in certain areas [15]. Also, the breastfeeding knowledge scale was still low (78.1±11.1), with the rate of 32.0%. Therefore, an active intervention was needed for primiparas to improve the recognition and behavior for breastfeeding, and promote the exclusive breastfeeding approach, then maintain health of maternal and infant [16].

In this study, the scores of anxiety (SAS) and depression (EPDS) in intervention group were all significant lower than that in control group. After the treatment, the scores were also significant lower before medication in intervention group. The results indicated that the anxiety and depression in various levels were normally accompanied with the primiparas. After the information support and behavior intervention, the anxiety and depression of primiparas were improved significantly.

According to the previous researches, the fluctuation of maternal mood was normally high along with the anxiety and depression. But the breastfeeding could improve the negative emotions [16-18]. Meanwhile, professional instruction for breastfeeding and psychological support were needed to promote the breastfeeding rate. Also, the previous studies showed that, several different reasons would induce the anxiety and depression in maternal, which then cause the decreasing of breastfeeding rate. Timely guidance and intervention were needed [2, 19, 20]. In this study, good relationship and communications between nursing staff and participant was built to learn the psychological states in time. Assistance and psychological counseling for the participant were given when anxiety, depression or other negative emotion emerged. Psychological treatment was also

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Table 6. Comparison breastfeeding rate between intervention and control group

<table>
<thead>
<tr>
<th>Group</th>
<th>Case</th>
<th>Breastfeeding</th>
<th>Combined the two</th>
<th>Bottle feeding</th>
<th>Rate of pure breastfeeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>50</td>
<td>31 (62.0%)</td>
<td>17 (34.0%)</td>
<td>2 (4.0%)</td>
<td>62.0%</td>
</tr>
<tr>
<td>Control</td>
<td>50</td>
<td>16 (32.0%)</td>
<td>29 (58.0%)</td>
<td>5 (10.0%)</td>
<td>32.0%</td>
</tr>
<tr>
<td>(\chi^2)</td>
<td></td>
<td>9.203</td>
<td>9.033</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
<td>0.010</td>
<td>0.003</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
necessary for the primiparas with high scale negative emotion to effectively improve the mental health [8].

In this study, the scale of breastfeeding knowledge after intervention was significantly improved than that before intervention. Also, the scale of breastfeeding knowledge in intervention group was significant higher than that in control group, which conformed with the previous study [8]. Therefore, the information support and behavior intervention could improve the breastfeeding knowledge of primiparas. And professional instruction and support of breastfeeding knowledge were needed for the maternal who lack of experiences to improve the breastfeeding rate [4, 13, 21, 22]. In this study, several different types of instruction and information support (such as breastfeeding class, brochures, online education, etc.) were employed to disseminate the breastfeeding knowledge. Through the combination of different approaches, the breastfeeding knowledge was studied continually to improve the scale of assessment and breastfeeding rate [23].

In this research, the amount of milk secretion in intervention group was significant higher than that in control group. There was significant higher breastfeeding rate in intervention group (62.0%) than that in control group (32.0%). This result was conformed with the result of Linares et al., which showed 51% for breastfeeding, 5% for bottle feeding, and 44% for combining the two [24]. The data indicated that information support and behavior intervention could improve the secretion of breast milk, and breastfeeding rate. The early report showed that, cognitive behavioral interventions could successfully promote the long-term breastfeeding of primiparas [1]. Through the behavior intervention treatment, the proper skills for breastfeeding and breast massage were guided to promote breast milk secretion and breastfeeding rate. Moreover, the information support and behavior intervention could help the primiparas to recover health psychology. It would also improve the breast milk secretion through contact and sucking at early stage [6].

In conclusion, with the anxiety, depression and lack of breastfeeding knowledge in primiparas, the information support and behavior intervention could alleviate the negative emotions, improve the breast milk secretion, breastfeeding knowledge and rate. This approach is worth a wide application in the future.

Disclosure of conflict of interest

None.

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References


Information support and behavior intervention for breastfeeding rate


