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*Special Issue for INTE 2016*

*December, 2016*

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Message from the Editor-in-Chief

Dear Colleagues,

We are very pleased to publish Special Issue for INTE 2016 conference. This issue covers the papers presented at 7th International New Horizons in Education Conference which was held in Vienna, Austria. These papers are about different research scopes and approaches of new developments and innovation in educational.

Call for Papers

TOJET invites you article contributions. Submitted articles should be about all aspects of educational technology. The articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJET. Manuscripts must be submitted in English.

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Postpartum Education By Midwife Since Antenatal Period: An Effective Method To Prevent Postpartum Depression

Sarma Nursani LUMBANRAJA
Departement of Obstetrics and Gynecology, University of Sumatera Utara
Medan, Indonesia
sarmalumbanraja@yahoo.com

ABSTRACT
Introduction: Postpartum depression (PPD) can harm both mother and her child. Providing education about postpartum period was considered to be effective in preventing the symptoms of PPD. However, studies still showed different results and it was unclear whether applying education since antenatal period will decrease postpartum depression.

Methods: This study was conducted in pregnant women that admitted to Delima Clinic in 2015. Subjects were randomly divided into 3 groups: control group, antenatal group (received education since the antenatal period), and postnatal group (received education since the immediate postnatal period). Education was carried out by trained midwives. Diagnosis of PPD was assessed 7 days postpartum by Edinburgh Postnatal Depression Scale questionnaire.

Results: A total of 22 women was included respectively in the three groups. Twenty-five subjects (38%) experienced postpartum depression with total EPDS questionnaire’s score was 7.91 ± 4.083. This study showed a significant difference of postpartum depression among the control, antenatal, and postnatal groups (p=0.02, X² 7.865). Only 4 subjects (16%) in the antenatal group experienced postpartum depression.

Discussion: This study showed a significant difference in the incidence of postpartum depression among the control, antenatal, and postnatal groups with the lowest incidence of postpartum depression in antenatal group. From the observation, the subject stated that maternal education that started since antenatal will reduce their fears about labor and strengthen their confidence after birth.

Keywords: postpartum depression, education, antenatal, postnatal

INTRODUCTION
Postpartum depression (PPD) is a state of mood decrease during postpartum period. Prevalence of PPD was 10-15% in general, while in some groups, the prevalence could reach up to 35%. In developing countries, Dennis et al. (2006) showed PPD prevalence by 13%. In Medan, Sinaga et al. (2015) showed that the prevalence of PPD was high (26%) and mostly found in women aged below 20 years, primigravid, lower education, low income, and had history of spontaneous delivery.

In postpartum period, effects of immediate hormonal fluctuation, stress in caring newborn, disturbance of sleeping patterns due to newborn crying sound, comorbidity of other diseases, and nutritional deficiencies may exacerbate PPD. PPD usually occurs in the first 3 months and peaks at 4-6 weeks of postpartum period. About 50% of cases PPD can last up to 1 year postpartum and even be recurrent in the next postpartum period.

PPD is part of depression, but occurs during the period postpartum. PPD can affect two people, mother and her child. Depression that suffered by the mother can decrease time and not wholeheartedly in caring her child, in which, affects her child growth and development. In more severe conditions, PPD can trigger infanticide.

Diagnostic and Statistical Manual of Mental Disorders-4 classifies postpartum depression as major depression occurred within 1 month postpartum. However, the criteria is difficult to use and not very objective in assessing the difference symptoms of PPD symptoms in each individual. Several questionnaires have been developed for the diagnosis of PPD, such as EPDS. Kadir et al. (2004) showed that the EPDS was more superior than GHQ and HDS questionnaire in detecting women with depression postpartum. The best cut off point of EPDS was 11.5 with 95.1% of sensitivity and 72.7% of specificity.

Depression has been widely associated to the lack of postpartum education preparation to the pregnant woman. Providing early postpartum education, especially by midwives, will be an appropriate intervention for preventing PPD. Education includes information regarding the postpartum period and training on how to take care of the child. Interpersonal education is determine as the most effective education. This educational analyzes the psychological and physical problems experienced by women and provides advice and solution regarding of the postpartum problems.

Strass (2002) showed that education by midwives significantly improved the patient's mood, social life, and confidence. Mostly postpartum education were being started at postnatal. Dennis et al. (2005) meta analysis at
4 RCTs showed that the incidence of PPD could be lower if women received the education since antenatal compared to postnatal (1:21 vs RR RR 0.76). However, the results was not differed significantly.2

METHOD

Design

This study is a prospective cohort study, conducted in maternity clinic OF Delima in Belawan 2015. All pregnant women visiting the maternity clinic in Medan be included in this study. The women were being informed of the objective and procedures of this study. Those who agreed to participate were required to sign an informed consent. This study has been approved by Ethical Committee Faculty of Medicine, University of Sumatera Utara.

Subjects were followed from the first antenatal until 1 month of postnatal period. Follow-up period was strictly controlled, if the subject did not attend the scheduled antenatal care, she was excluded from the study. The inclusion criteria were subjects aged above 20 years, primigravid, attend the clinic since the first antenatal care, did not have psychological disorders, did not smoke, did not drink alcohol, and did not have a malignancy.

Algorithm

Subjects were given a questionnaire containing data about sociodemographic factors and obstetric characteristics, which included questions the patient's age, occupation, education, and parity. The subjects were divided into control, antenatal, and postnatal group. Randomization of subjects to three groups was performed by computerization. Subjects in control group were given standardized antenatal care. Subjects in group 2 (antenatal) were given additional postpartum education for 1 hour at each antenatal visit (K1-K4). Subjects in group 3 (postnatal) were given postpartum education from day 0 until outpatient from the clinic. Postpartum education preparation includes mental preparation, the needs of mothers and babies, funding, preparation for childbirth, and adaptation for caring newborn. Postpartum education since antenatal had education about childbirth preparation, differed if the education began since postnatal. Education is done by a midwife who had previously been trained to do postpartum counseling.

After 1 week postpartum or during outpatient control after delivery, we assessed the incidence of postpartum depression using the EPDS questionnaire. Scoring was done using a 0-3 Likert scale to rate the severity of symptoms. On question number 1, 2, and 4, the score 0-3 was determined from bottom to top. On the question no 3, 5-10, 0-3 score was determined from top to bottom. If the total score was below 11.5, subject was considered to have PPD, but if the total score was above 11.5, subject was considered to have PPD.

Statistical analysis

Data were tabulated and analyzed using SPSS 17.0, Inc. (Chicago, IL). Data were shown as mean, standard deviation, and percentages. To assess the association between characteristics and PPD, we used Chi Square or Fischer Exact. To assess differences of PPD among three groups, we used Chi Square, Fischer Exact, or ANOVA. Significant was limited to 95%.

RESULTS

This study was conducted on 66 pregnant women visiting Clinic Delima 2015 regularly for antenatal care until delivery.
Tabel 1. Baseline characteristics of subjects

<table>
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<tr>
<th>Characteristics</th>
<th>Postpartum depression</th>
<th>No postpartum depression</th>
<th>p value</th>
</tr>
</thead>
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<tr>
<td>Age</td>
<td>24.68 ± 2.968</td>
<td>24.05 ± 4.025</td>
<td>0.308</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not employed</td>
<td>4 (16%)</td>
<td>5 (12.2%)</td>
<td>0.464</td>
</tr>
<tr>
<td>Employed</td>
<td>21 (84%)</td>
<td>36 (87.8%)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior high school</td>
<td>5 (20%)</td>
<td>6 (14.6%)</td>
<td>0.846</td>
</tr>
<tr>
<td>Senior high school</td>
<td>19 (76%)</td>
<td>33 (80.5%)</td>
<td></td>
</tr>
<tr>
<td>Diploma or higher</td>
<td>1 (4%)</td>
<td>2 (4.9%)</td>
<td></td>
</tr>
</tbody>
</table>

PPD was diagnosed by EPDS questionnaire. As many as 7 subjects (10.6%) admitted that they were not able to laugh and see the funny side of things. This symptoms was also the most symptoms encountered compared to 10 other symptoms. The most rare symptoms was thought to injure oneself (Table 2).

Table 2. Diagnosis of postpartum depression based on EPDS score

<table>
<thead>
<tr>
<th>Questions</th>
<th>Mean (SD)</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was able to laugh and see the funny side of things</td>
<td>0.97 ± 29</td>
<td>17</td>
<td>13</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>I'm looking for fun on anything</td>
<td>1.037</td>
<td>(43.9%)</td>
<td>(25.8%)</td>
<td>(19.7%)</td>
<td>(10.6%)</td>
</tr>
<tr>
<td>I blame myself without any reason for some weird things</td>
<td>0.8 ± 29</td>
<td>22</td>
<td>14</td>
<td>1 (1.5%)</td>
<td></td>
</tr>
<tr>
<td>I feel anxious without appropriate reason</td>
<td>0.827</td>
<td>(43.9%)</td>
<td>(33.3%)</td>
<td>(21.2%)</td>
<td></td>
</tr>
<tr>
<td>Many things that preoccupy my feeling</td>
<td>0.73 ± 27</td>
<td>30</td>
<td>9</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>I was so unhappy that I had sleeping disturbances</td>
<td>0.691</td>
<td>(30.3%)</td>
<td>(51.5%)</td>
<td>(18.2%)</td>
<td></td>
</tr>
<tr>
<td>I feel sad or slumped</td>
<td>0.82 ± 17</td>
<td>44</td>
<td>5 (7.6%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>I was so unhappy that I cried</td>
<td>0.59 ± 30</td>
<td>33 (50%)</td>
<td>3 (4.5%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>I have ever thought to injure myself</td>
<td>0.53 ± 42</td>
<td>15</td>
<td>7</td>
<td>2 (3%)</td>
<td></td>
</tr>
</tbody>
</table>

A total of 25 subjects (38%) had postpartum depression (Table 3). Mean total score of EPDS was 7.91 ± 4.083. Postpartum depression was mostly experienced in the group that did not receive the postpartum preparation’s education (13 subjects, 52%). Only 4 subjects (16%) in the group that received education since antenatal experienced postpartum depression. This study showed a significant difference in the incidence of PPD among the control, antenatal, and postnatal group (p = 0.02; $X^2 = 7865$).

Table 3. Difference postpartum depression cases between control, antenatal, and postnatal groups

<table>
<thead>
<tr>
<th>Education</th>
<th>Postpartum depression</th>
<th>No postpartum depression</th>
<th>p value</th>
<th>EPDS score</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>13 (52%)</td>
<td>9 (22%)</td>
<td>0.02</td>
<td>9.05 ± 3.697</td>
<td>0.11</td>
</tr>
<tr>
<td>Antenatal</td>
<td>4 (16%)</td>
<td>18 (43.9%)</td>
<td>(X2= 7.865)</td>
<td>5.82 ± 4.316</td>
<td>(F= 4.853)</td>
</tr>
<tr>
<td>Postnatal</td>
<td>8 (32%)</td>
<td>14 (34.1%)</td>
<td></td>
<td>8.86 ± 3.532</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>25 (100%)</td>
<td>41 (100%)</td>
<td></td>
<td>7.91 ± 4.083</td>
<td></td>
</tr>
</tbody>
</table>

No significant differences of EPDS score were found among three groups (p = 0.11) (Table 3). Statistical analysis with post hoc Tukey showed a significant difference only between control and antenatal groups (p = 0.02) as well as antenatal and postnatal groups (p = 0.029). However, there was no significant difference between the control and postnatal groups (p = 0.987).
DISCUSSION
The incidence of PPD is emerging. In this study, as many as 25 subjects (38%) experienced postpartum depression. This percentage is higher than those of previous studies. Various factors might influence, including ethnicity and race. PPD mainly occurs in primigravid where a woman may not yet be ready to have a child. PPD can bring bad influence for both the mother and her child. PPD is found to negatively affect mother and child relationship, which in some cases, the child will become uncontrollable and aversion. Some studies even showed the risk of growth retardation, developmental, emotional control, and lower cognitive function in later development.

PPD has a similar biological mechanism with major depressive disorder. In depression, there were disruption of neuronal circuit integrity and decreased brain volume. Stress-stimulated-proinflammatory cytokines will disrupt synaptic and neuronal development. This will cause disturbance in neurotransmitter balance and cause mood disorders such as depression. In the postpartum period, a decrease in estrogen and progesterone will decrease the activity of central serotonergic system. Decreased serotonin as it is known can result in decreased mood or depression.

The diagnosis of PPD in this study was done by EPDS questionnaire because it was simple, easy to understand, and it only takes <10 minutes. This questionnaire has been validated in South Africa, Australia, Dutch, Brazil, Hong Kong, Italy, Sweden, and Malaysia with a sensitivity of 49-95% and a specificity of 67-100%.

Psychological education about hormonal and physiological conditions that will be experienced during the postpartum period found to be effective in reducing and preventing the symptoms of PPD. However, many studies have found that giving education is merely a placebo.

Buist et al. (2010) failed to show antenatal education effectiveness in preventing PPD. Antenatal education already included information about the psychological state, mental readiness, household conditions, and other conditions that complained by the patients. Hayes et al. (2001) also showed that education conducted in trimester 2 and giving book about midwifery knowledge books did not show a significant decrease of PPD. Tam et al. (2003) even educated the group of women at high risk of PPD and showed no significant PPD difference with the group that did not receive education.

Some researchers, similar with this study showed a decrease in the incidence of PPD significant in the group given education, both antenatal and postnatal groups. Phipps et al. (2013) showed that postpartum education since antenatal was significantly decreased the incidence of PPD. Moshki et al. (2014) showed that giving education during the first 1 month postpartum significantly decreased the incidence of postpartum depression. O’Hara et al. (2000) showed that interpersonal education therapy for 12 weeks in 120 postpartum women with PPD showed reduced symptoms of depression significantly.

Subjects in the studies were very enthusiastic in listening to education conducted by trained midwives. They actively asked especially about things that need to be prepared before delivery. They claimed that this would reduce the fear and increase their confidence and readiness for delivery. It was undeniable that in this study, only 4 subjects (16%) in the group that received education since antenatal experienced postpartum depression. This study showed a significant difference of PPD among the control, antenatal, and postnatal groups (p = 0.02; X² 7865). Statistical analysis with post hoc Tukey showed a significant difference only between control and antenatal groups (p = 0.02) as well as antenatal and postnatal groups (p = 0.029). However, there was no significant difference between the control and postnatal groups (p = 0.987).

This study showed similar results of the meta-analysis by Dennis et al. (2005) in 4 RCTs, that the incidence of PPD was lower in women receiving antenatal education since antenatal compared to postnatal (RR 1.21 vs RR 0.76), but this was not differed significantly. The results implied the need for postpartum education since antenatal, not since postnatal period. However, clinicians should aware of several factors that influenced the success of education such as the support from partner. When a patient has been suffered from PPD, she should need a combination of psychological and pharmacological therapy. Psychological therapy can be done by interpersonal or cognitive therapy. If there was no response, it was recommended to add medications, such as SSRI or tricyclic antidepressant.

CONCLUSION
This study showed a significant difference of postpartum depression prevalence among the control group, antenatal, and postnatal groups with the lowest prevalence was in the subjects that received postpartum education since antenatal period.

REFERENCES
31. Tam WH, Lee DT, Chui HF, Ma KC, Lee A, Chung TK. A randomised controlled trial of educational counseling on the management of women who have suffered suboptimal outcomes in pregnancy. BJOG. 2003;110(9):853-9.