Effectiveness of The Combination Training of Lactation Management and Kangaroo Mother Care (KMC) to Midwives in Boyolali

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Abstract

Low Birth Weight (LBW) in Boyolali still be serious problem. In 2013 LBW incidence was reached 15.3 per 1000 live births, exclusive breastfeeding coverage was 51.3% still below national target 80%. Therefore, midwives roles required to resolve these problems. Midwives were necessary to improve their capacity through a combination of lactation management and KMC training. The purpose of this study was to evaluate effectiveness of the combination training of lactation management and Kangaroo Mother Care (KMC) to midwives in Boyolali. Design of this study used qualitative approach with quasi experiment design study one group pretest and post-test with time series measurement. This study used two data sources, primary data obtained in combination training and secondary data from PERINASIA (Data Perinasia in 2010-2014). Primary data collection used knowledge questionnaire at pretest, 1st post-test, and 2nd post-test which filled by respondents independently. While secondary data was obtained from Perinasia training’s data, it was pretest and post-test value in lactation management and KMC training in period 2010 – 2014. Secondary data was selected based on suitability characteristics in training participants that was similarity of education, age and residence.

Data analysis involved univariate and bivariate analysis. Bivariate analysis used paired t-test, independent t-test and correlation analysis, because all data ware normally distributed. The learning evaluation result showed that overall knowledge score of lactation management and KMC were increased. Comparative result of secondary data showed there were significant difference in knowledge score between the combination training and the lactation management training only. Overall this training successfully increased knowledge and midwives skill releated of lactation management and KMC.

Keyword: Effectivisness training, Midwives, Lactation Management, KMC

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BACKGROUND

Infant Mortality Rate (IMR) in Indonesia was still a priority health problem. Indonesia Demography and Health Survey (IDHS) at 2012 showed that reach 32 per 1,000 live births. Of these, 60% died during first month of life. The majority of IMR took place in the rural areas (IDHS, 2012). Premature baby who had Low Birth Weight (LBW) and asphyxia was one of the predominant causes of newborns’ deaths in the first week life (Djaja,2003). An important factor for determining babies survival was a baby’s birth weight. That categorized as

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enough weight was 2500 grams, if that less was called low birth weight (LBW). The babies with LBW had
death high risk more that enough birth weight. IDHS data (2012) showed 66 deaths of neonates and 84 deaths of
infants (both per 1,000 live births) who had LBW. Incident of LBW babies tend to increase from year to year. In
the Central Java BW cases reached 21,573 cases at 2013 (Central Java Health Officer, 2013). This showed
increase percentage of LBW form 2019 to 2013 was increase (3, 75%-2, 81%). At same time in the Boyolali
district, there were 15.3 cases of LBW infants per 1,000 live births (Health Profiles of Central Java, 2013). LBW
infant. LBW infant were very susceptible to hypothermia conditions (Djaja, 2003). For that there were
treatments that can be applied to LBW babies, namely Kangaroo Mother Care (KMC). Some study showed that
LBW infant who got exclusive breastfeeding from their mother faster to achieve ideal weight. Exclusive
breastfeeding according to WHO recommendation gives at newborn up to first 6 month old. Indonesia had not
yet reached the target of exclusive breastfeeding coverage in accordance with Ministry of Health strategic plan in
2010–2014 that is 80%. Exclusive breastfeeding coverage is still below the target that was 42% (IDHS, 2012).
While in Boyolali district, exclusive breastfeeding coverage in 2013 reached 51.3%, still below of Central Java
exclusive breastfeeding average (Health Profiles of Central Java, 2013). This issue could be solved with
lactation management. Lactation management and KMC had mutualism synergy in handling for LBW infant
health. KMC would maximize exclusive breastfeeding towards LBW infant. This was reinforced by a single
study stating the duration of breastfeeding for LBW infants with KMC was 2.08 times more often than those not
KMC (Tunggal, 2011). KMC implementation in handling of LBW infant didn’t familiar in community,
especially for health worker. Therefore, it was necessary to disseminate information and knowledge regarding
this matter. Information and knowledge dissemination could be done through trainings for health workers,
especially for midwives. Various studies showed that a lot of training had been provided to midwives. This was
intended so that midwives get new knowledge and skills that could be applied in the community. This was
because midwives were health workers who often got in touch with mothers and children related to their health.
This was in line with the research conducted by Raharjo which proved that the role of midwives had a
significant effect (p = 0.001 on the practice of IMD and exclusive breast feeding (Raharjo, 2014). Therefore,
midwives need to have good knowledge and skills to be able to provide information and influence for
knowledge and understanding of pregnant women. This had led to a breakthrough in the form of training
designed to deal with the LBW infant and breast feeding problems. It was a combination between two training,
lactation management training and LBW management training with KMC. This training conducted for 3 days or
19 hours.
The purpose of this study was to evaluate the effectivity of the combination training of lactation management and KMC for midwives. Training effectivity was analyzed with Kirkpatrick's theory framework which measured effectiveness in terms of learning evaluation. Learning evaluation to measure the change in participant’s knowledge between Pretest (before) and post-test 1 (after) and post-test 2 (after one month). In this study, besides evaluating learning using primary data (training participant data), also compared with secondary data belonging to PERINASIA.

METHOD

This study was done in Puskesmas Sawit and Puskesmas Ngemplak work area, in Boyolali district at 2014. This study used quantitative approach with quasi experiment design study one group pretest and post-test with intervention combination training of lactation management and KMC in midwives. Sample of this study was obtained using purposive sampling technique that fulfilled inclusion and exclusion criteria, which amounted to 17 local midwives. This study used two data sources, primary data obtained in combination training and secondary data from PERINASIA. Primary data collection used knowledge questionnaire at pretest (before training), 1st post-test (after training), and 2nd post-test (one month after training) which filled by respondents independently. While secondary data was obtained from Perinasia training’s data, it was pretest and post-test value in lactation management and KMC training in period 2010 – 2014. Secondary data was selected based on suitability characteristics in training participants that is similarity of education, age and residence. The chosen secondary data characteristics were those who had midwifery education have 28-49 years old, live in Central Java and around. Secondary data used amounted to 21 data. Quantitative data analysis used SPPS by conducting univariate and bivariate analysis. Bivariate analysis used a paired t-test, independent t-test and correlation analysis, because all data was normally distributed.

RESULT

1. Respondent Description

Respondents of this study were participants of combination training, who midwives in Puskesmas Sawit and Ngemplak work area. Total number of respondents was 17 people, 8 people from Ngemplak and 9 people from Sawit. Amount 70.6% of respondents had D3 midwifery education. The oldest age was 49 years and the youngest age was 28 years, with an average age was 38 years. Respondents with the longest work length were 25 years and at least were 8 years, with an average age of 17 years. All respondents had never attended...
lactation management training or KMC training.

2. Lactation Management Knowledge

The total questions used to measure lactation management knowledge were 7 questions, so the total score reached 7 points. Data distribution of lactation management knowledge was normally distributed.

| Table 1. Distribution of Score Manajemen Laktasi Knowledge |
|---------------|--------|--------|--------|----------------|
|               | N     | Max-min | Mean   | SD   | Data Distribution |
| Pretest       | 17    | 3 – 6   | 5.18   | 0.88 | Normal            |
| Posttest 1    | 17    | 4 – 7   | 5.76   | 1.09 | Normal            |
| Posttest 2    | 17    | 4 – 7   | 6.12   | 1.17 | Normal            |

Bivariate analysis between pre-test and post-test 1 showed that the p-value was 0.076 (p-value > 0.05), showing an insignificant increase in knowledge. Nevertheless, the comparison of the average score showed an increase percentage although just a little, which was 11.19%. Statistic result of posttest 1 compared to that of posttest 2 showed insignificant increase, p-value 0.403 (> 0.05). Nevertheless, the comparison of the average score showed an increase percentage although just a little, which was 6.25%. The statistic results of pretest and posttest 2 was 0.021 (p-value < 0.05). That showed significant increase of in lactation knowledge. That in line with the comparison of the average score showed an increase percentage, which was 18.15%.

<table>
<thead>
<tr>
<th>Table 2. The Result of Bivariate Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest – Posttest 1: paired t-test analysis</td>
</tr>
<tr>
<td>Posttest 1 – Posttest 2: paired t-test analysis</td>
</tr>
<tr>
<td>Pretest – posttest 2: paired t-test analysis</td>
</tr>
</tbody>
</table>

The result was examined using a correlation analysis to see the relation between the average score of management lactation knowledge with age and length of work. It indicates a significant relation, with the p-value of 0.004 for both variables. In other words, other factors were not significantly related. The older and the longer the participants work, the greater the difference in the average scores of pretest and posttest 2.

<table>
<thead>
<tr>
<th>Table 3. The result of correlation analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Score</td>
</tr>
<tr>
<td>Pretest – Posttest 1</td>
</tr>
<tr>
<td>Posttest 1 – Posttest 2</td>
</tr>
<tr>
<td>Pretest – posttest 2</td>
</tr>
</tbody>
</table>

3. Kangaroo Mother Care (KMC) Knowledge

The total questions used to measure the knowledge of kangaroo method care (KMC) were 8 questions, so the total score reached 8 points. Data distribution of KMC knowledge was normally distributed.

<table>
<thead>
<tr>
<th>Table 4. Distribution of Score KMC Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>Pretest</td>
</tr>
<tr>
<td>Posttest 1</td>
</tr>
<tr>
<td>Posttest 2</td>
</tr>
</tbody>
</table>

Bivariate analysis between the pre-test and post-test 1 showed the p-value = 0.000 (< 0.05). In other words,
there was a significant increase in the knowledge of KMC, which was 30.61%. The analysis results of post-test 1 and post-test 2 were $p=0.369 (>0.05)$, showed an insignificant increase in the knowledge of KMC. The comparison average score showed small increase was only 6.25%. The statistical analysis between pre-test and post-test gave $p=0.000(<0.05)$ that result was a significant increase in the knowledge of KMC, which was 38.78%.

Table 5. The Results of Bivariate Analysis

<table>
<thead>
<tr>
<th>Bivariate Analysis</th>
<th>p value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest – Posttest 1</td>
<td>$Uji$ paired $t$-test</td>
<td>0.000</td>
</tr>
<tr>
<td>Posttest 1 – Posttest 2</td>
<td>$Uji$ paired $t$-test</td>
<td>0.369</td>
</tr>
<tr>
<td>Pretest – posttest 2</td>
<td>$Uji$ paired $t$-test</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The result was examined using a correlation analysis to see the relation between the average score of KMC knowledge with age and Length of Work. The correlation analysis results showed that all variables are not significantly related.

Table 6. The Result of Correlation Analysis of KMC Knowledge

<table>
<thead>
<tr>
<th>Perubahan rata-rata skor</th>
<th>p value</th>
<th>Koef. korelasi</th>
<th>p value</th>
<th>Koef. Korelasi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest – Posttest 1</td>
<td>0.303</td>
<td>0.266</td>
<td>0.610</td>
<td>0.133</td>
</tr>
<tr>
<td>Posttest 1 – Posttest 2</td>
<td>0.723</td>
<td>-0.093</td>
<td>0.752</td>
<td>-0.083</td>
</tr>
<tr>
<td>Pretest – posttest 2</td>
<td>0.404</td>
<td>0.217</td>
<td>0.783</td>
<td>0.072</td>
</tr>
</tbody>
</table>

4. The Comparison of the Combination Training and Lactation Management Training

The secondary data were selected from 21 respondents of lactation management training organized by PERINASIA. All respondents were from Central Java and working as a nurse, ranged from 25 to 48 years old. The scores of lactation management knowledge in the combination training (primary data) and the one from PERINASIA (secondary data) were different. The primary data reached 7 points, while the secondary data 100. For further analysis, the total scores need to be equalized. It was conducted by multiplying the total score of the primary data with 14.29. The number was obtained by dividing the total score of the secondary data (100) to the primary data point (7). The secondary data analyzed by independent $t$-test to see the difference in differences changes of lactation management knowledge in primary data with secondary data. It was because the data distribution was normally distributed.
Table 7. The Result Comparison of the Combination Training and Lactation Management Training

<table>
<thead>
<tr>
<th>Training</th>
<th>N</th>
<th>Average</th>
<th>SD</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combination training*</td>
<td>21</td>
<td>6.81</td>
<td>14.12</td>
<td>0.0001</td>
</tr>
<tr>
<td>Lactation Management Training**</td>
<td>21</td>
<td>21.00</td>
<td>9.11</td>
<td></td>
</tr>
</tbody>
</table>

Data source: *Primary Data, **Secondary Data by Perinasia.

The data were examined using the independent t-test to see the difference in lactation management knowledge of the primary data and the secondary data. The p-value was 0.0001 (p-value < 0.05), showing a significant difference between both.

5. The Comparison of the Combination Training and KMC Training

The secondary data were selected from the PMK training organized by perinasia, as many as 21 respondents. 52.4% of the participants were from Central Java, 4.8% from Yogyakarta, 28.6% from East Java, and 14.3% from Cirebon Regency. All of them graduated from midwifery and aged between 24 to 61 years old.

The scores of PMK knowledge in the combination training (primary data) and by PERINASIA (secondary data) were different. The primary data reached 8 points, while the secondary data 100 points. In the further analysis, the total scores were equalized by multiplying the score of primary data with 12.5, which was obtained from dividing the secondary data score (100) by primary data score (8). The data analyzed by independent t-test to see the difference in differences changes of KMC knowledge in primary data with secondary data. It was because the data distribution was normally distributed.

Table 8. The Result Comparison of the Combination Training and KMC Training

<table>
<thead>
<tr>
<th>Training</th>
<th>N</th>
<th>Average</th>
<th>SD</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combination Training*</td>
<td>21</td>
<td>22.10</td>
<td>14.74</td>
<td>0.864</td>
</tr>
<tr>
<td>KMC training**</td>
<td>21</td>
<td>21.43</td>
<td>9.77</td>
<td></td>
</tr>
</tbody>
</table>

Data source: *Primary Data, **Secondary Data by Perinasia.

The data were statistically tested using the independent t-test to see the difference in the change of knowledge about KMC of the primary and the secondary data. The test resulted in a p-value of 0.864 (p-value > 0.05), meaning there was no significant difference between both data.

DISCUSSION

The combination training of lactation management and KMC was a new modification of two separated training. They were the lactation management training and the KMC training which held by PERINASIA. The combination training was designed to cover the midwives problem which was their time for training.
midwives who had busy working hours in health services so that it was so difficult to leave the health services for a long time while that to attended a training. Even though training could be increased capacity building that was important to support health services. The new combination was hoped could be had shorten the training time rather than having to take two separate training and had same effectiveresult.

1. Lactation Management Knowledge

The statistic results only showed a different score of pretest and posttest 2. From the average score, the participants were found to improve their knowledge in each measurement. In other words, the training is effective. The result was similar to the one concluded by Munro, et al (2007) about therapeutic training for the nurse, showed the increase in the average score in the three measurements (six months after the training). Munro, et all (2007) explained the improvement in posttest 2 resulted from the experience owned by the participants from their job (Munro, et al., 2007). The results of pre-test and post-test1 did not show a significant difference. It was unlike the study conducted by Ingram (2006), stating that there was a significant result between the pretest and posttest in lactation management training for medical workers. The cause for the present study result was the average score of the participants (5.18 of 7). The participants had adequate knowledge of the topic as well as supporting experience obtained from working in maternity facilities (Thahyani, 2007).

The correlation test showed that age and length of working had a positive relation to the score difference in pretest and posttest 2. The older the participant, the bigger was the gap. Similarly, the longer they work, the bigger was the change. Age and length of working influenced the experience of the participants. It was supported by research, concluding that greater improvement had been shown by the group of midwives working in maternity facilities (Law, et al., 2002).

2. Kangaroo Mother Care (KMC) Knowledge

The average score in Kangaroo Mother Care (KMC) knowledge in pre-test and post-test 1 was higher than the knowledge of lactation management. It resulted from the prior knowledge of PMK and lactation management. From the preliminary score, the participants’ knowledge about lactation management was higher than about PMK. Hence, the improvement of the pretest and posttest 1 was significant. The average score of lactation management knowledge kept increasing until the third measurement (post-test2). Although the statistics test of post-test1 and 2 showed an insignificant difference; we could still saw the improvement. It might be due to the experience of the participants from their job as the implementation of the training(Munro, etall.,2006.,Law, et all.,2002).
3. The Comparison of the Combination Training and Lactation Management Training

There was a significant difference in the score of lactation management knowledge between the combination training and the training by PERINASIA. It was that both produceda different change in terms of lactation management. The lactation management training resulted in a higher average score compared to the one from the combination training of lactation management and PMK. The difference score of pretest and posttest in the lactation management training was 21, while in the combination training was 6.81 (after conversion). It resulted from several factors. One of them was the pre-test score of the participants in combination training. The average score was 5.18 out of 7, which was equal to 72.71. The score was higher than the one reached by the participants in the training by PERINASIA, which was 66.67. However, both pieces of training offered levels of difficulties and the depth of the materials. Therefore, it could not be concluded that the participants in the combination training had a greater understanding of the materials compared to those in the one by PERINASIA. Another possible cause was the depth of the material of lactation management. One of the facilitators stated that the materials in the lactation management training were more comprehensive than the one given in the combination training. The difference was in the case studies in relation to lactation. The combination training did not include case studies because of limited time.

4. The Comparison of the Combination Training and KMCTraining

The statistic results showed that there was no significant difference in the score of PMK knowledge between the combination training and PMK training held by PERINASIA. Thus, both were equally effective. The difference between the pre-test and post-test in the combination training was 22.10, while the one by PENINASIA was 21.43 (after conversion). The result was confirmed by the facilitator, in that the materials of the combination training were comprehensive and complete. The organizer provided the participants with case studies and role play, similar to those from PERINASIA.

CONCLUSION

The combination training of lactation management and KMC showed good learning evaluation results. The results given an increase in knowledge and attitudes of respondent. Secondary data analysis result showed that comparison between effectiveness of combination training and separated training had same effectiveness. Therefore, it was concluded that combination training was as effective as previous training in increasing the knowledge of participants related to KMC.
SUGGESTION

To finalize this combination training model, it was expected to be able to re-modify, both in material and training method. Then modified combination training model had to be piloted to evaluate effectively and efficiency of the training before being used as a new training model.

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REFERENCE


