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## Breastfeeding Peer Counselor Program in Malaysia: Impact on Breastfeeding Duration and Exclusivity



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### ABSTRACT

**Background:** The Malaysian Breastfeeding Peer Counselor Association (MBfPCA) is a pioneer non-governmental organization (NGO) of trained breastfeeding peer counselors in Malaysia. We explored the effect of peer counseling support on breastfeeding outcomes among postnatal mothers who delivered at a national tertiary teaching hospital and their satisfaction with the peer counseling services.

**Method:** A total of 210 postpartum mothers were recruited in a single-blinded, randomized, controlled trial. Block randomization was used to allocate the participants into the intervention (I) group (n=105), who received telephone-based peer counseling support at 72 hours, 2 weeks, 1, 2, 4 and 6 months postpartum; and the control (C) group (n=105), who received routine breastfeeding advice. The infant feeding practices information was obtained at 2, 4 and 6 months postpartum from both groups. Data on maternal

satisfaction with peer counseling services was acquired from the intervention group participants 6 months postpartum.

**Results:** Ninety-four mothers were lost to follow up, leaving 116 (I=60, C=56) for analysis. The number of participants who practiced exclusive breastfeeding was higher in the intervention group at all intervals, with significant difference seen at 6 months postpartum ( $p = 0.035$ ). Significant differences were also seen in the prevalence of breastfeeding between the groups at 4 and 6 months postpartum ( $p = 0.017$  and  $p = 0.010$ ). All participants who practiced exclusive breastfeeding found that peer counselors helped them reach their breastfeeding goals ( $p = 0.001$ ) and would recommend peer counseling services to others ( $p = 0.037$ ).

**Conclusion:** Peer counselor support in Malaysia increased the duration and exclusivity of breastfeeding and was well accepted among postnatal mothers.

**Keywords:** breastfeeding, breastfeeding support, infant feeding, telephone-based counseling

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### INTRODUCTION

The Baby-Friendly Hospital Initiative (BFHI) in Malaysia has been implemented in all government hospitals since 1993.<sup>1</sup> Despite the recommendation by the World Health Organization (WHO) and the United Nation Children's Fund (UNICEF), the prevalence of exclusive breastfeeding in Malaysia - although improved from 14.5% in 2006 to 47.1% in 2016 - is still low.<sup>1,2</sup> However, we can see that the overall prevalence of ever breastfeeding for any amount of time in Malaysia had increased from 88.6% in 1996 to 98.1% in 2006.<sup>1,2</sup> The continued prevalence of breastfeeding for up to two years showed increment from 11.7% in 2006 to 39.4% in 2016.<sup>3</sup> These findings suggest that the programs implemented were effective in improving the prevalence of ever breastfeeding and continued breastfeeding for up to two years. It remains a challenge to improve the exclusive breastfeeding practices among Malaysian mothers.

The 1989 version of Step 10 of the BFHI stated that it is essential to foster the establishment of breastfeeding support groups and to refer mothers to them on discharge from the hospital or clinic to ensure these mothers receive adequate support throughout the postpartum period.<sup>4</sup> The revised

Step 10 BFHI 2018 also emphasized on coordinating discharge of the parents and their infants with timely access to ongoing breastfeeding support and care in the community.<sup>5</sup> At present in Malaysia, the community nurses would usually conduct home visits to postpartum mothers and their babies up to 14 days postpartum, and often breastfeeding advice is given. It is up to the breastfeeding mothers to seek help on breastfeeding after being discharged from the hospital. They can find postnatal breastfeeding support at the community health clinics or make contact with the lactation counselors available or with online support groups. Some receive breastfeeding support from their family members, but whether the correct information is given remains questionable. Thus, there is a need for the provision of skilled community-based breastfeeding support to postnatal mothers to ensure correct understanding of breastfeeding practices and that essential support is given during the postpartum period.

The Malaysian Breastfeeding Peer Counselor (MBfPC) program, which was initiated in early 2010, is a project that focuses on building capacity of breastfeeding counselors in Malaysia to sustain exclusive breastfeeding for six months

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and continued breastfeeding with appropriate complementary foods for up to two years and beyond.<sup>6</sup> The Malaysian Breastfeeding Peer Counselor Association (MBfPCA) is the pioneer organization in Malaysia that trains breastfeeding peer counselors systematically using a developed syllabus that is adapted from and endorsed by the La Leche League International (LLLI).<sup>7</sup> The project goes beyond the hospital setting as it extends the circle of breastfeeding support by training peer counselors among mothers according to Step 10 of the BFHI. It is funded by UNICEF and supported by the World Alliance for Breastfeeding Action (WABA). The training of potential peer counselors has been completed in 5 regions in Malaysia (North, South, Central, East Coast and East Malaysia). To date, MBfPCA has more than 400 trained peer counselors in Malaysia and the numbers are increasing with ongoing training.<sup>8</sup>

To ensure the training's efficacy and relevance to current technology trends and global situation needs, its module underwent continuous improvements based on the outcomes, comments and feedback obtained from previous training sessions. Since 2015, the MBfPCA program has incorporated 8 educational breastfeeding videos by Global Health Media Project (GHMP) into its training module to further enhance the delivery of current breastfeeding peer counselor training to their clients.<sup>8</sup> To ensure the breastfeeding peer counselors are updated on the latest evidence and advancements, they are encouraged to attend continuous lactation education provided through e-learning, webinars or seminars locally and internationally.

With the vast adaptation of the module, there is still no data yet on the efficacy of this well-structured pioneer program in Malaysia on the breastfeeding outcomes. In this study, we determined the effect of peer counselor support on breastfeeding duration and exclusivity of at least 6 months among postnatal mothers and their satisfaction with the peer counseling services.

## METHOD

### Trial design

This was a single-blinded, parallel, randomized controlled trial involving 210 postpartum mothers.

### Participants

Our participants were recruited over one month and were followed up until their 6 months postpartum. The average number of deliveries per month at Universiti Kebangsaan Malaysia Medical Centre (UKMMC) ranges from 400-500 with about 80% of spontaneous vaginal delivery.

UKMMC has been accredited as a BFHI hospital since October 2012. A list of mothers who had just given birth to normal babies was identified from the labor room registry in the hospital. From the list, participants were pre-selected and screened for eligibility. Eligible participants were those who could speak and understand Malay and/or English, had a vaginal delivery of singleton birth at 37 weeks' gestation or later, and were agreeable to telephone contact follow up. Participants whose infants had congenital anomaly, including cleft lip/palate or required care in the Special Care Nursery or Neonatal Intensive Care Unit were excluded. Participants who delivered via Caesarean section and had the possibility of having serious maternal illness that could significantly interfere with breastfeeding were not eligible.

### Intervention

Our intervention commenced within 72 hours after the participants were discharged from the hospital following the delivery of their baby. Written informed consent was obtained from all the participants. Once the participants were assigned to their respective groups, the details of the participants in the intervention group were given to the respective peer counselors to initiate the intervention.

Our peer counselor volunteers were those who had completed secondary school with personal breastfeeding experience of more than 6 months and were willing to help other mothers to breastfeed. They underwent structured training focused on communication skills and basic breastfeeding management, which was done over 3 days using the MBfPCA Training Module. To maintain uniformity in the lactation support, the peer counselors interested in supporting this study were given a 1-day refresher course and briefing regarding the protocol before the study began. They were also provided with lactation counseling guidelines adapted from the California WIC Breastfeeding Peer Counseling Program Peer Counselor Handbook,<sup>9</sup> the MBfPCA Training Module and activity logs to document their specific interactions with the intervention subjects. The peer counselors were directly accessible and monitored by the International Board of Certified Lactation Consultant (IBCLC), who was also the MBfPCA Project Manager for the study. None of the peer counselors were IBCLC.

Upon hospital discharge, participants in both the intervention and control groups received routine breastfeeding care, including breastfeeding advice from the midwives and breastfeeding pamphlets, and information regarding MBfPCA. Participants in the intervention group were paired

with a Peer Counselor who contacted them via telephone within 72 hours upon discharge; then at 2, weeks and subsequently at 1, 2, 4 and 6 months postpartum. This was the minimum number of contacts required. If based on the peer counselor's judgment, the participants warranted more support than prescribed, additional telephone support was provided and charted. Participants could contact the peer counselors by telephone within the study period and all events were logged. Telephone support was no longer provided if the participants decided to withdraw from the study or discontinued breastfeeding.

During each telephone support session provided by the peer counselors, participants would share their breastfeeding challenges and problems. They were given advice and solutions based on the challenges faced. Some participants needed assurance that they were breastfeeding their infants appropriately. Others needed some emotional support as they were overwhelmed with motherhood. Peer counselors were advised to refer the participants with problems beyond their capabilities or breastfeeding-related medical conditions to the International Board of Certified Lactation Consultant (IBCLC) or physician.

Participants in the control group could get help accessible to them concerning breastfeeding problems from healthcare providers, lactation consultants or peer counselors, on their initiative.

In the case of participants who were uncontactable for more than 3 occasions for the breastfeeding telephone support and data collection via telephone interviews, the participants were considered as loss to follow up, thus would not be analyzed.

### Outcomes

The researcher who was blinded to the group allocation telephoned all participants at 2, 4 and 6 months postpartum to assess the infant feeding practices using semi-structured, closed-ended questionnaires. This was based on participants' 24-hour recall of self-reported breastfeeding (received by the infants of any breast milk) that determined their infant feeding practices. The infant feeding practices were defined based on the criteria by WHO.<sup>10</sup> Satisfaction with the peer counselor services was acquired from the intervention group participants at 6 months postpartum whereby they were required to answer 'Yes' or 'No' to the questions posed.

### Sample size

The sample size was calculated using PS2 Version 3.0.43. Considering the estimated drop out of 10%,

the calculated sample size was 105 for each arm. The power of the study was set at 95%.

### Randomization

Eligible participants who agreed and consented to participate were randomly assigned to either intervention or control group utilizing a block randomization method using an online generated randomizer, [www.randomizer.org](http://www.randomizer.org). A nurse in charge would obtain the delivery list from the labor room registry. The participants were pre-selected, screened for eligibility and assigned randomly within blocks based on an equal allocation ratio on a day-to-day basis to ensure the intervention could commence within 72 hours after discharge. She would then provide the participants' contact details to the peer counselors to initiate the intervention. A research assistant obtained the basic sociodemographic and contact information from the participants, which was provided to the researcher for breastfeeding outcome data collection purposes.

### Blinding

The researcher who acquired the breastfeeding outcome data from the participants in both groups was blinded to the group allocation to reduce bias. She only received the contact information details from the research assistant to proceed with the data collection.

### Data collection

Specific socio-economic and demographic variables, maternal and pregnancy factors and previous infant feeding experience (if any) were obtained by the research assistant within 72 hours after birth using the sociodemographic collection form. The researcher who was blinded to the group allocation telephoned all participants to assess the infant feeding status, using semi-structured, closed-ended questionnaires. This study used a modified version of Breastfeeding Assessment Questionnaire, a semi-structured questionnaire, developed and permitted by Dr. Cindy-Lee Dennis, from the University of Toronto.<sup>11</sup> Back-to-back translation of the questionnaire, from English to Malay and content modification as to suit the social and cultural context of the Malaysian population was conducted by the researcher, a certified translator from the National Translation Institute and an IBCLC. It was later reviewed for content validity by 5 experts (1 certified translator from the National Translation Institute, 1 IBCLC, 1 peer counselor, 1 Obstetric and Gynecologist registrar and 1 family medicine registrar). The questionnaire was piloted via a telephone interview with the

members of the target population to ensure that the content and phrasing of the items were appropriate, which took about 5 to 10 minutes.

### Statistical methods

SPSS for Mac OS (version 20.0) was used for data entry and statistical analysis. Pearson Chi-square test was used to examine the differences between the two groups for categorical data; Mann Whitney test was conducted for continuous data that were not normally distributed. All results were interpreted using  $p < 0.05$  (2-sided) as the criteria for statistical significance.

### Terminology definition

In this study, we used the following terminologies as the infant feeding practice assessment. Exclusive breastfeeding refers to infants receiving only breast milk but are allowed to receive vitamins, minerals and medicines. (10) Mixed feeding refers to infants receiving breast milk and other milk/formula. (12)

Non-exclusive breastfeeding refers to infants who receive breast milk and also other milk/formula.<sup>12</sup>

## RESULTS

Flow chart of recruitment and follow-up participants are shown in [Figure 1](#). The acceptance rate for the enrolment was 94.5%. Participants were recruited over one month and followed up at their 2 months, 4 months and 6 months postpartum after recruitment. At the end of 6 months, 116 participants (55.2%) completed the study. Uncontactable participants of more than 3 occasions and loss to follow up participants were considered as drop out from the study, thus not included in the final analysis.

The baseline sociodemographic and clinical characteristics are presented in [Table 1](#). The characteristics of the participants were balanced in both groups.

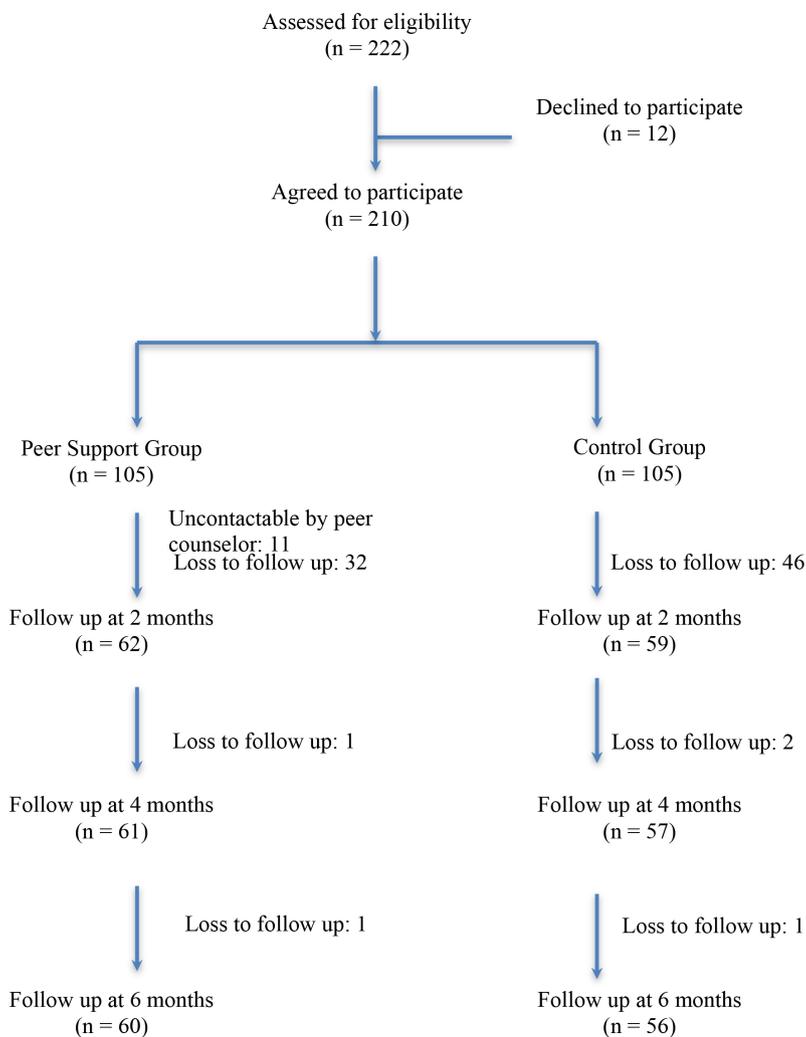
During recruitment in the wards after delivery, all participants were practicing exclusive breastfeeding and continued doing so at discharge.

The infant feeding practices between the intervention and the control groups were compared at 2, 4 and 6 months postpartum. The number of participants who practiced exclusive breastfeeding was higher in the intervention group than the control group at all intervals with a significant difference seen at 6 months postpartum ( $p = 0.035$ ). More participants in the intervention group could sustain exclusive breastfeeding up to 6 months postpartum (46.7% vs 32.1%) ([Figure 2](#)).

Among all participants from both groups, the prevalence of breastfeeding in this study was higher at 2 months postpartum and gradually declined at 6 months postpartum with significant differences seen between the groups at 4 and 6 months postpartum ( $p = 0.017$  and  $p = 0.010$ ) ([Table 2](#)).

Among those participants who were breastfeeding, more women in the intervention group practiced exclusive breastfeeding at all intervals ([Table 3](#)).

At the end of 6 months postpartum, only 60 participants in the intervention group completed the study, of which 44 were still breastfeeding and 16 already stopped. Their data was analyzed for the satisfaction with the peer counseling services. About 76.7% of the participants found that the peer counselor helped them to achieve their breastfeeding goals with significant difference seen between those who were exclusively breastfeeding and non-exclusively breastfeeding ( $p = 0.001$ ). A total of 88.7% of the participants would recommend peer counseling services to others, with a significant difference seen in the exclusive breastfeeding group ( $p = 0.037$ ). The majority of participants, whether they were exclusively breastfeeding or not,



**Figure 1.** Flow chart of participants' recruitment

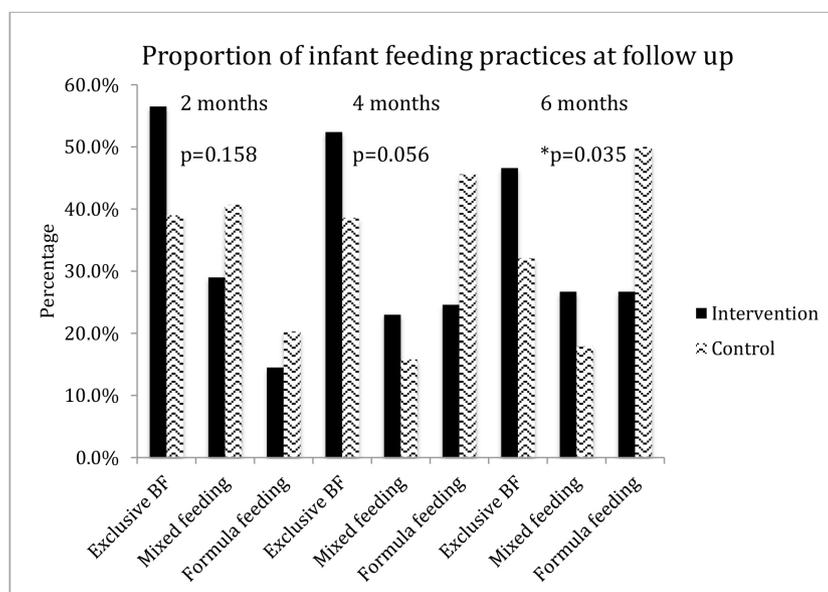
**Table 1. Baseline sociodemographic and clinical characteristics**

Baseline characteristics	Intervention n = 105 median (IQR)	Control n = 105 median (IQR)	p value
Age (year)	29.0 (5)	29.0 (4)	0.294 <sup>a</sup>
Parity	2.0 (2)	2.0 (2)	0.219 <sup>a</sup>
	<b>n (%)</b>	<b>n (%)</b>	
Ethnicity			
Malay	83 (79.0)	84 (80.0)	0.902 <sup>b</sup>
Chinese	19 (18.1)	19 (18.1)	
Others	3 (2.9)	2 (1.9)	
Mother's education level			
Secondary school or less	45 (42.9)	41 (39.0)	0.575 <sup>b</sup>
Tertiary education	60 (57.1)	64 (61.0)	
Employed	82 (78.1)	81 (77.1)	
Household income (RM)			
<2300	7 (6.7)	8 (7.6)	0.849 <sup>b</sup>
2300-5599	67 (63.8)	64 (60.0)	
>5600	32 (29.5)	34 (32.4)	
Previous breastfeeding experience	59 (56.2)	54 (51.4)	0.489 <sup>b</sup>
Had family/friends who had breastfed	100 (95.2)	95 (90.5)	0.180 <sup>b</sup>
Intended to breastfeed	101 (96.2)	101 (96.2)	0.639 <sup>c</sup>
Heard of MBfPC	35 (33.3)	27 (25.7)	0.226 <sup>b</sup>

<sup>a</sup> Mann Whitney, significant  $p < 0.05$

<sup>b</sup> Pearson Chi-Square, significant  $p < 0.05$

<sup>c</sup> Fisher's exact test, significant  $p < 0.05$

**Figure 2. Proportion of infant feeding practices**

were satisfied with their experience with the peer counselors (Table 4).

## DISCUSSION

We found that our peer counselor support maintained breastfeeding duration among the participants in the intervention group up to six months postpartum. A study by Dennis et al. found peer counselor support intervention was effective in maintaining breastfeeding up to 3 months postpartum.<sup>11</sup> In this study, we did not look at the characteristics of the participants who were still breastfeeding at 6 months postpartum. Some of the critical determinants that support longer breastfeeding duration among working mothers include adequate breastfeeding facilities in the workplace and allowing mothers flexible time to express breast milk.<sup>13</sup>

There was no significant difference in the infant feeding practices in both groups at two- and four-months postpartum. This may be due to some participants could have been in their confinement period and maternity leave (up to 90 days for government servants), and breastfeeding could continue without many problems and obstacles. Thus, there was no difference in terms of breastfeeding practices whether they are supported or not during this period. However, Pugh et al. reported a significant effect of postpartum breastfeeding support in the intervention group at six weeks postpartum, but not at 12 and 24 weeks postpartum, as contrary to our findings.<sup>14</sup> A recent study in the US has shown that returning to work full-time before 3 months may reduce a mother's ability to continue to breastfeed for at least 3 months.<sup>15</sup>

It was also seen that our peer counselor support was able to help participants in the intervention group to sustain exclusive breastfeeding up to 6 months. This was not seen in another local study by Tahir et al, in which the telephone support given by certified lactation counselors from the nursing profession was only effective in increasing exclusive breastfeeding rate at 1 month postpartum among the intervention group.<sup>16</sup> This may be due to the role of the peer counselors who have similar backgrounds with the study participants and personal success of breastfeeding; they serve as an ideal role model that enhances the program applicability, which was generally accepted by the participants.<sup>17</sup> A systematic review by Shakya et al., also showed that community-based peer support could improve exclusive breastfeeding duration.<sup>18</sup> However, it is important to note that the combination of professional and peer support has been shown to increase breastfeeding duration.<sup>19</sup>

**Table 2. Prevalence of breastfeeding at follow-up**

Follow up interval; breastfeeding status	Group; no (and %) of participants		p value <sup>#</sup>
	Intervention n (%)	Control n (%)	
<b>2 months (N = 121)</b>			
Breastfeeding	53 (85.5)	47 (79.7)	0.398
Not breastfeeding	9 (14.5)	12 (20.3)	
<b>4 months (N = 118)</b>			
Breastfeeding	46 (75.4)	31 (54.4)	0.017*
Not breastfeeding	14(24.6)	26 (45.6)	
<b>6 months (N = 116)</b>			
Breastfeeding	44 (73.3)	28 (50.0)	0.010*
Not breastfeeding	16 (26.7)	28 (50.0)	

#Pearson Chi Square, \*significant  $p < 0.05$

Breastfeeding includes exclusive and mixed feeding feeding

**Table 3. Prevalence of exclusive breastfeeding among participants who breastfed at follow-up**

Follow up interval; exclusivity	Group; no (and %) of participants who breastfed		p-value <sup>#</sup>
	Intervention n (%)	Control n (%)	
<b>2 months (N= 100)</b>			
Exclusive breastfeeding	35 (66.0)	23 (48.9)	0.063
Non-exclusive breastfeeding	18 (34.0)	24 (51.1)	
<b>4 months (N= 77)</b>			
Exclusive breastfeeding	32 (69.6)	22 (71.0)	0.551
Non-exclusive breastfeeding	14 (30.4)	9 (29.0)	
<b>6 months (N= 72)</b>			
Exclusive breastfeeding	28 (63.6)	18 (64.3)	0.579
Non-exclusive breastfeeding	16 (36.4)	10 (35.7)	

#Pearson Chi Square, \*significant  $p < 0.05$

Over time, the method of supporting breastfeeding mothers also evolves. Breastfeeding videos, text messaging, Facebook support and other modalities of online breastfeeding support have been shown to have positive impacts on breastfeeding outcomes and satisfaction among mothers.<sup>20-22</sup>

Interestingly, more than half of the total participants were still breastfeeding at the end of the study (62.1%), although this was low compared to other studies.<sup>11,16</sup> More emphasis is needed to support mothers in prolonging breastfeeding duration with various means and should be tailored to their individual needs.

Among the total participants, the prevalence of exclusive breastfeeding in this study was found to have a decreasing trend towards the end of the study, which was also noted in other trials.<sup>1,11,23</sup>

The non-significant results in this study may be related to various factors, including the participants'

social influences and support on breastfeeding, participants' accessibility to intervention, the total number of successful counseling calls received, and the effectiveness of the peer counseling received.<sup>16</sup>

We also looked at the participants' satisfaction with the peer counseling services they received during the study. Among participants who received the intervention, 46.7% were still breastfeeding exclusively at the end of the study. The significant effect of peer counselors was seen where all of them reported that the peer counselors helped them to achieve their breastfeeding goal, which was to breastfeed exclusively for 6 months duration. In those who were not breastfeeding exclusively, more than half felt that the peer counselors helped them to achieve their breastfeeding goal. There is a possibility, although they did not manage to breastfeed exclusively, the role of peer counselor support helped them through their breastfeeding journey, even though the exclusivity could not be maintained. They probably felt benefitted from the breastfeeding guidance and reassurance that increased their self-efficacy and feelings of being empowered, as mentioned in a systematic review by Hannula.<sup>19</sup>

After receiving the peer counselor support in this study, almost all participants in the intervention group said they would recommend the peer counselor services to others (86.7%). This suggests that this type of postnatal breastfeeding support is one of the accepted methods by the target population, as reported by other studies.<sup>11,24,25</sup>

We noted several limitations in this study. It was beyond expectation that there were many dropouts and lost to follow-up participants, making this study insufficiently powered. Efforts were made by contacting them up to 3 times, and if they were still uncontactable, they were considered lost to follow up and dropped from the study. This was probably due to the confinement period in our culture where most mothers will go back to their hometown to be cared for by their family members. This study was also limited to 6 months duration (including from the time of recruitment to the final follow up) and confined to a small geographical area, thus it could not be used to generalize the Malaysian population. A combination of qualitative and quantitative approaches with a longer study duration could result in a broader outcome and more significant impact on the study.

## CONCLUSION

The findings suggest that peer counselor support in Malaysia increased the breastfeeding duration and exclusivity among postnatal mothers, and it was well accepted by the target population.

**Table 4. Maternal satisfaction with peer counselor services among intervention group participants**

	Exclusive breastfeeding N= 28 n (%)	Non-exclusive or stopped breastfeeding N=32 n (%)	p value <sup>#</sup>
Peer counselor helps to reach breastfeeding goals	28 (100.0)	18 (56.2)	0.001*
Satisfied with peer counseling experience	26 (92.9)	27 (84.4)	0.307
Would recommend peer counselor service to others	27 (96.4)	25 (78.1)	0.037*

#Pearson Chi Square, \*significant p < 0.05

More peer counselors in the community should be trained to provide community-based breastfeeding support that could intensify the current healthcare professional support during antenatal, intrapartum and postpartum periods. The presence of breastfeeding peer support groups in Malaysia needs to be made known to the public so that they could find such support and assistance when it comes to breastfeeding difficulties in general. The development of breastfeeding peer counselor module should include approaches to support parents during breastfeeding at crucial time particularly to ensure exclusive breastfeeding duration of 6 months could be achieved. Further study needs to be done in our local setting to find various reasons for mothers not being able to sustain exclusive breastfeeding for 6 months duration as recommended by WHO. Perhaps a qualitative study on reasons for failure to continue breastfeeding would be able to shed more information on this issue and help guide future policy changes.

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#### CONFLICT OF INTEREST

The authors report no conflicts of interest in the work.

#### ETHICAL CONSIDERATION

This study was granted ethical approval from the Medical Research and Innovation Secretariat UKMMC for the protection of human subjects (Project Code: FF-070-2012).

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#### AUTHOR CONTRIBUTIONS

All of the authors equally contribute to the study from the conceptual framework, data gathering, data analysis, until reporting the results of study through publication.

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