INCREASING THE PERCENTAGE OF EXCLUSIVE BREASTFEEDING MOTHERS IN DUNGUN, TERENGGANU

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Abstract

The World Health Assembly adopted the infant feeding strategy in 2001, which included the recommendation for exclusive breastfeeding from newborn until six months old, with continued breastfeeding for up to two years while complementary food is introduced. Breastfeeding is the most cost-effective way to reduce childhood morbidity and mortality as well as give benefits to breastfeeding mothers. Although breast milk is the normative feeding for infants, exclusive breastfeeding rates in Dungun were the lowest in Terengganu for three consecutive years from 2014 to 2016. Only 51.8% of mothers did so in 2016, with a reducing trend from 66.8% in 2014 to 58% in 2015. As a result, a quality improvement project was designed to increase the percentage of exclusive breastfeeding mothers in Dungun, involving seven health clinics starting in September 2016, with the first cycle completed in November 2017. Factors contributing to the low percentage of exclusive breastfeeding were poor psychosocial support and a non-conducive environment for breastfeeding practice. Four interventional strategies were formulated and implemented, including establishing a new work process of breastfeeding management, improvising the teaching aids into a more organised, compact, and complete breastfeeding kit, organising breastfeeding educator training courses and last but not least, organising JOM PA & MA classes to improve mothers' knowledge and providing support for them. There were 152 mothers and 157 nurses involved in the pre-intervention study. Subsequently, 100 mothers and 157 nurses were evaluated in the post-intervention period. Our study revealed a significant increase in the percentage of exclusive breastfeeding mothers, from 56% to 86%, exceeding the standard set at 80% after four intervention cycles. These comprehensive strategies effectively improved the percentage of exclusive breastfeeding mothers in Dungun, fostering the development of local breastfeeding guidelines to ensure continuous good healthcare services for breastfeeding mothers.

KEYWORDS: Exclusive breastfeeding, Quality improvement project, Interventional strategies, Dungun

Problem

Exclusive breastfeeding is the gold standard for infant nutrition and contributes to maternal health as well. The Malaysia National Breastfeeding Policy recommends that all mothers exclusively breastfeed their infants for the first six months. It entails feeding infants with breast milk only, including expressed breast milk, excluding water, other liquids, breastfeeding substitutes, or solid foods. Thereafter, adequate complementary foods may be introduced, and breastfeeding should be continued until at least the age of two years old. Breast milk contains all the necessary nutrients for the growth and development of infants and antibodies that protect them from many illnesses (1).

The National Plan of Action for Nutrition of Malaysia III (NPANM) targets at least 70% of infants at the age of six months + one week to be fed exclusively with breastmilk by the year 2025 (2). The latest National Health Morbidity Survey (NHMS) population survey in 2016 reported that 47.1% of zero to six-month-old infants were exclusively breastfed, which showed an increase from 14.5% in 2006 (3). On the other hand, government health clinics in Malaysia reported that 49.4% (2015) of infants aged six months who attended government health clinics were exclusively breastfed, an increase from 23.3% in 2011. However, the rate is still below the recommended standard (2,4).

Dungun District Health Office (DHO) is situated in Terengganu and has seven health clinics providing primary healthcare services to the 189,600 residents that comprise the district's population (5). Led by a Public Health Physician, it has a total of 627 staff who work in clinical settings and public health administration. There are six major services provided by the DHO, namely family health, disease control, occupational health, food quality control, health education, as well as environmental health and water supply services. Apart from the execution of national health policies and strategies at the ground level, it is also responsible for disease monitoring and surveillance and achieving specific health indicators for each activity. One of the activities monitored is the percentage of exclusive breastfeeding among postnatal mothers. On average, a total of 260 postnatal mothers attended health clinics in Dungun monthly for their six-month postnatal check-ups.

According to the 2016 Key Performance Index (KPI) achievement, the percentage of exclusively breastfeeding mothers in Dungun was only 51.8%. This achievement was the lowest among districts in Terengganu for three consecutive years from 2014 to 2016, and it also showed a reduction from 2014 (66.8%) and 2015 (58%). A verification study involving 152 mothers was carried out in September 2016 to verify the rate of exclusive breastfeeding among postnatal mothers attending all health clinics in Dungun. The study showed 56% (n=85) of the 152 postnatal mothers exclusively breastfed their children. Therefore, this study aims to increase the percentage of exclusive breastfeeding mothers in Dungun to 80% within five years.

Background

Optimal breastfeeding can save the lives of 820,000 children under five years old every year. World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) recommend breastfeeding to be started as early as one hour after birth, to give exclusive breastfeeding for the first six months, and to start safe and nutritious complementary foods at six months of age while continuing breastfeeding for up to two years or more (1,6). Exclusive breastfeeding can be defined as a practice of only giving an infant breastmilk for the first six months of life without mixing it with water, other liquids, or food except for vitamins, mineral supplements, and medicines. It is the foundation of child health because it provides essential nutrition for a child's growth and development (1,7). Breastmilk contains all the nutrients and energy an infant needs in the first six months of life, up to half or more during the second half of infancy and up to one-third during the

second year of life (1,8).

Breastfeeding has long been associated with a reduced risk of diseases in infants and mothers. Breastmilk has nutritional, immunological, behavioural, and economic benefits and helps build the bond between mother and infant (9,10). Studies showed that breastmilk improves growth and lowers the risk of getting otitis media, gastroenteritis, respiratory tract infections, sudden death syndrome, obesity, and high blood pressure in children (2). On the other hand, breastfeeding can also reduce the risk of breast and uterine cancer, type 2 diabetes, and even postpartum depression in lactating women (3). In terms of benefits to the community, breastfeeding can indirectly reduce the cost of medical treatment and has been reported to alleviate the problem of absenteeism from work (11).

Despite the well-known importance of exclusive breastfeeding, the practice is neither widespread globally nor in Malaysia, where the achievement of national exclusive breastfeeding percentage in 2016 was only 47.1% (2,12). Meanwhile, a cross-sectional study conducted in Rio de Janeiro, Brazil, involving 1029 mothers, showed only 58.1% of babies were exclusively breastfed for infants under six months old (13). Based on UNICEF and Center for Disease Control and Prevention (CDC USA) data, exclusive breastfeeding rates in the Middle East and North Africa were only 34% and were projected to remain flat at a linear rate until 2030 (14). On the other hand, the South Asia region had a faster rate projection of improvement at 77% of exclusive breastfeeding by 2030. However, it is necessary to accelerate progress in all regions to achieve the WHO target by 2030, which is 70% of six six-month exclusive breastfeeding rate (14).

Various factors affect the decision to initiate breastfeeding and its duration. Psychological, emotional, social, and environmental factors all play a role in determining if the baby will be bottle-fed or breastfed. Some of the reported barriers to breastfeeding include maternal stress over not producing enough milk, uncertainty about whether the infant is getting enough milk, mother or infant discomfort with breastfeeding, nipple or breast problems, embarrassment to breastfeed in public, maternal fatigue, mother returning to work, previous breastfeeding history and concern about baby's weight loss (4). Other studies found that negative attitudes and lack of knowledge on proper breastfeeding techniques among mothers, their partners, family members, and health care professionals were also reported as breastfeeding hurdles (15). Besides that, the hospital and healthcare practices and policies that are not supportive of breastfeeding, lack of adequate skilled support in health facilities and the community, aggressive promotion of infant formula and other breastmilk substitutes, inadequate maternity and paternity leave legislation and workplace policies that support a woman's ability to breastfeed when she returns to work also contribute to the low rates of exclusive breastfeeding globally (15).

Sociodemographic factors are also associated with breastfeeding duration. Younger women with lower incomes and full-time employees were more likely to stop breastfeeding early, within one month after delivery (4). In terms of educational level, better-educated mothers tended to breastfeed their babies longer than 6 months, as evidenced by several studies (4,15,16). Knowledge and attitude are essential modifiable factors that may improve exclusive breastfeeding practice (17).

Increasing exclusive breastfeeding rates requires health systems, community, and policy actions. Evidence shows that countries with policies and programs most closely aligned with recommendations by WHO and UNICEF have the most success in increasing the rate of exclusive breastfeeding (18). Among the global strategies recommended to be implemented were the Baby-friendly Hospital Initiative, the International Code of Marketing of Breast-milk Substitutes and the Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding (2). A study by Heymann et al. in 182 countries showed that the existence of national policies allowing breastfeeding

breaks at workplaces resulted in higher exclusive breastfeeding practices among working mothers (19).

At the policy level, Malaysia's government acknowledges the recommendation of the National Breastfeeding Policy which was formulated in 1993 and revised in 2005; multiple strategies have been advocated to promote exclusive breastfeeding practices such as the Baby Friendly Hospital Initiative (BFHI), Baby Friendly Clinic Initiative, training of health staff via 20-Hour Breastfeeding Course, 90 days maternity leave in the governmental sector and implementation of the Code of Ethics for Marketing of Infant Food and related products (17,20,21).

Another study revealed that healthcare providers are important in promoting breastfeeding practice (21). The success of exclusive breastfeeding promotion depends on the healthcare provider's knowledge, attitude, motivation, and communication skills. The healthcare providers' personal breastfeeding experiences influence their attitude toward breastfeeding and their expertise in counselling and managing breastfeeding issues in the patient (22). Periera et al. showed that 31.9% of the mothers who exclusively breastfed their babies joined the breastfeeding support group initiated by the health care center in Brazil (13). This practice was statistically significant in improving the prevalence of exclusive breastfeeding compared to those who only received individual breastfeeding consultations (13). Meanwhile, another study demonstrated that training health professionals at the Breastfeeding Friendly Primary Care Unit Initiative to address practical issues related to the clinical management of breastfeeding had a positive impact on the survival curve of the exclusive breastfeeding (23). Owing to a high turnover of healthcare providers in many settings, training investment needs to be protected by ensuring follow-up through supervision and refresher training or orientation in health facilities(18) .

Having good community support may empower women's wish to breastfeed exclusively. Other than that, access to prenatal care, where moms receive advice on how to start nursing, also enhances the practice. A mother's likelihood to start breastfeeding within the first hour is proportionate with the number of antenatal appointments and professional antenatal care she receives (1,6). Exclusive breastfeeding practice is significantly improved by providing counselling to mothers during pregnancy, immediately following delivery, and during the neonatal period. However, extending exclusive breastfeeding to six months necessitates greater community and family assistance (18).

Measurement

The indicator of this study was the percentage of exclusively breastfeeding mothers, calculated based on the following formula:

$$\text{Percentage of exclusively breastfeeding mothers} = \frac{\text{Numbers of exclusively breastfeeding mothers with six months + one week old baby}}{\text{The total number of postnatal mothers with six months + one week old baby}} \; X\ 100\%$$

The NPANM III puts the target for at least 70% of infants at the age of six months + one week to be fed exclusively with breastmilk; meanwhile, according to Che Muda et al., it has been estimated that 1.30 to 1.45 million child deaths in 42 high mortality countries could be prevented by increasing the coverage of exclusive breastfeeding up to 90% (2). Thus, the standard set for this study was 80% based on the study team members consensus. This quality improvement study was conducted in all Dungun health clinics, which were Kuala Dungun Health Clinic, Ketengah Jaya Health Clinic, Paka Health Clinic, Kuala Abang Health Clinic, Jerangau Health Clinic, Al Muktafi Billah Shah Health Clinic, and Bukit Besi Health Clinic. All postnatal mothers with babies aged six months plus one week attending clinics during the study period were enrolled. Meanwhile, babies with congenital

diseases (e.g., congenital heart disease, biliary atresia, cleft lips, palate, etc.) and HIV-positive mothers were excluded from the study.

A verification study was conducted based on a pre-developed checklist to review the work process of breastfeeding management in all health clinics. A pre-developed observation form was used for data collection by the Quality Assurance (QA) team members. The observation form contains information on the work process of breastfeeding management and facilities, including a breastfeeding room, breastfeeding support group and breastfeeding teaching aid. We also conducted a survey on 157 nursing staff through a self-administered questionnaire and structured interview session. The survey contains questions regarding breastfeeding knowledge, how to solve breastfeeding problems and how to counsel breastfeeding mothers.

A self-administered questionnaire was distributed, and structured interview sessions were conducted among 100 mothers to further verify the factors contributing to exclusive breastfeeding practice. The questionnaire was adapted from the MOH baby-friendly clinic implementation guideline (24). It consisted of three parts: i) participants' data, ii) knowledge and attitude items and iii) breastfeeding practices checklist. The participant's data included socio-demographic, medical, delivery and breastfeeding history. The knowledge and attitude sections had each 10 questions on breastfeeding topics: the benefits of breastfeeding, breastfeeding duration, feeding cues, breastfeeding problems, breastmilk expression, position and latching, and storage of expressed breastmilk. Each correct answer carried one (1) score for the breastfeeding knowledge question, and an incorrect response scored zero (0) with a total of 10 maximum marks. Meanwhile, for attitude items, Likert Scales scoring from zero to four for "strongly agree", "agree", "unsure", "disagree" and "strongly disagree" were used. The total possible score for correct responses for the attitude aspects was 40. Those who scored at least 40 out of 50 points (80%) were considered to have good knowledge and attitude of breastfeeding. The breastfeeding practice checklist included self-reported practices of breastfeeding, and it was recorded as "never", "seldom" or "always" for each practice. With regard to the choices, "never" meant that the infant was never fed using the chosen method, "seldom" meant that the infant was fed with a specific method for less than seven days a week and "always" was defined as feeding the infant with specific feeding method every day. In this study, exclusive breastfeeding refers to feeding an infant with breast milk only without any additional solid or liquid except for oral rehydration salt, drops, syrups of vitamins and minerals or medicines.

The verification study was conducted in September 2016, followed by one month of data collection phase in October 2016 involving all seven health clinics in Dungun. Remedial measures were developed and implemented for seven months, starting November 2016 until May 2017, followed by four months of data collection from July until October 2017. The first cycle of data analysis was completed in November 2017.

The second cycle of the study was carried out from January to August 2018 with the improvement of remedial measures. This was followed by the third cycle of post-remedial data collection from September until December 2018. Subsequently, similar remedial actions were continued and monitored.

Initial Assessment of the Problem

A cause-and-effect analysis was performed to understand the possible contributing factors to the problem (Figure 1). Among the critical factors identified were poor attitudes and practices among mothers to breastfeed and poor breastfeeding consultation skills by health care providers, which were observed in low knowledge, attitude, and practices.

Based on the observation conducted during the verification study, it was found that some clinics had non-conducive

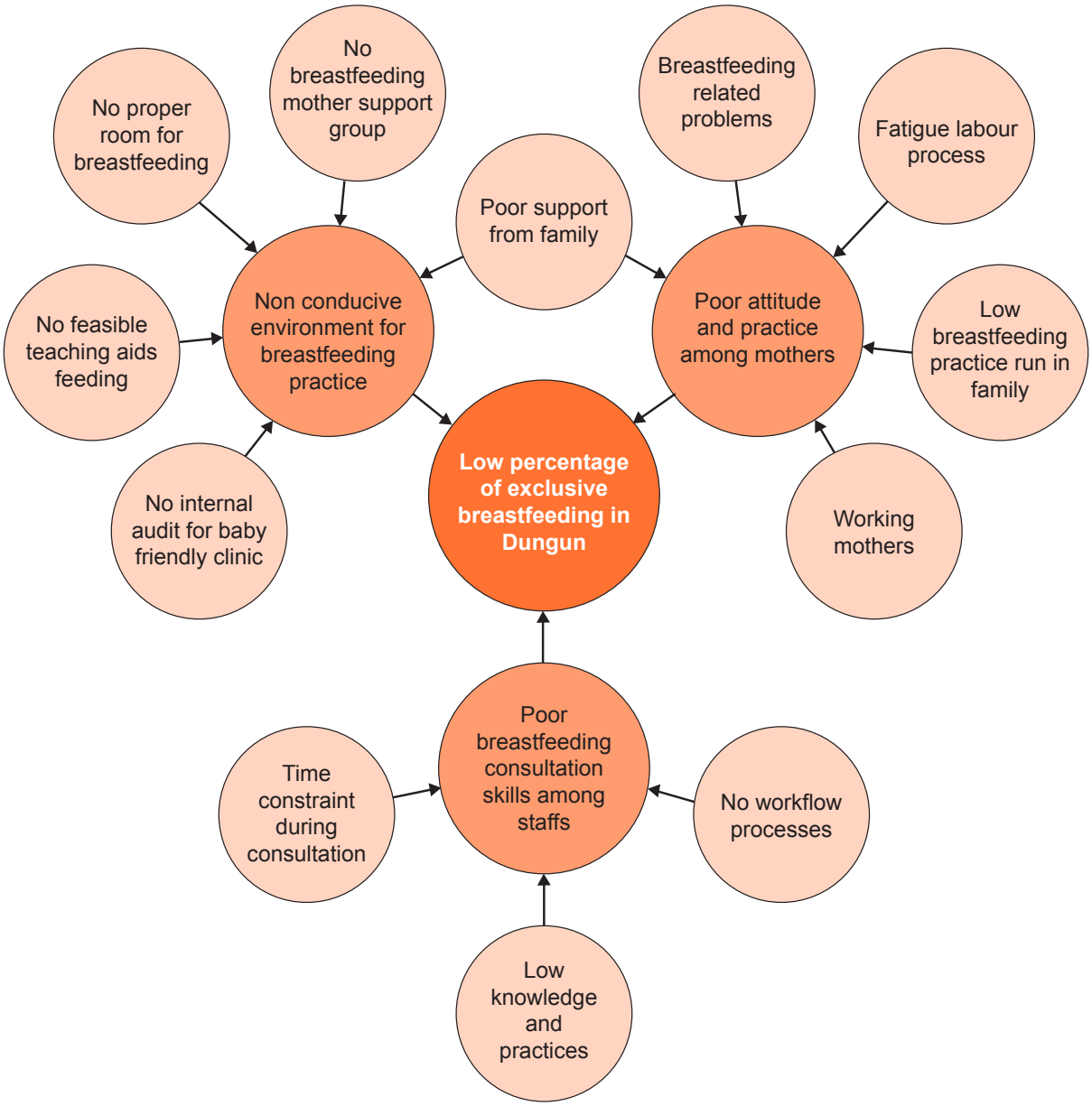

Figure 1: Problem analysis chart of the low percentage of exclusive breastfeeding in Dungun

environments for breastfeeding practice. There was no proper breastfeeding room available, no feasible breastfeeding teaching aids and no active breastfeeding mother support group in the clinic. At a more fundamental level, it was found that no standardised local or national process of care was used for the management of breastfeeding, explaining the reason for the lack of reference in managing breastfeeding issues at local health clinics. Time constraints were also observed during interview sessions conducted by the nurses, as the nurses were responsible for addressing the mothers' main complaints before they started breastfeeding consultations. While further assessing and investigating the mother's main complaint, they faced limited time to consult on breastfeeding.

This study only focused on evaluating nursing staff rather than involving all staff, such as the medical officers (MO). This is because MO routine review is only done at one month postnatal, not at 6 months postnatal, where the data collection was conducted. In addition, the nurses were the mothers' first contact person; among all medical personnel, they were the ones most often seen during maternal and child check-ups. The nurses will make a referral to MO if they find any problem at any time, in accordance with the newly constructed flow chart (Figure 2).

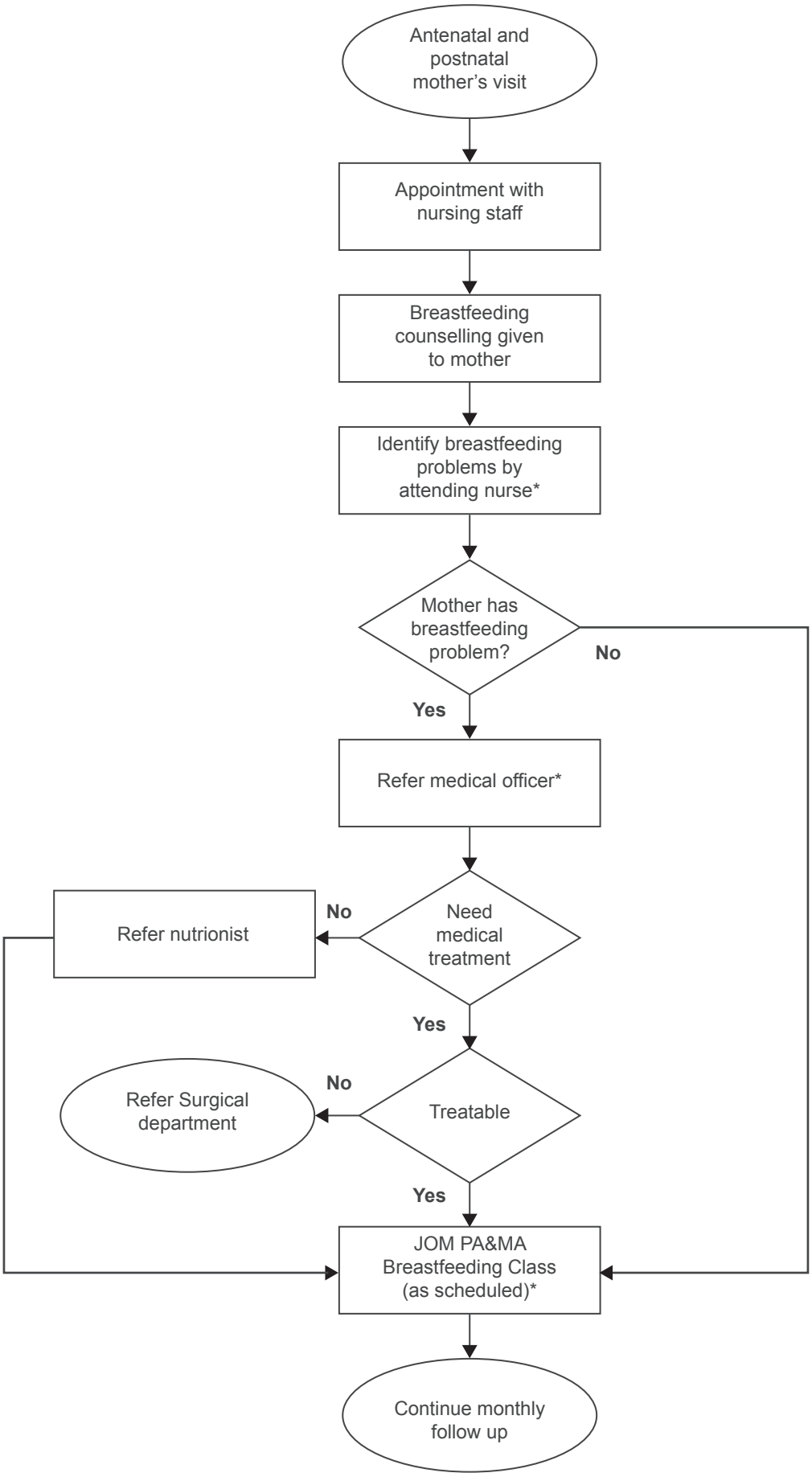

Figure 2: Process of care for breastfeeding management (* indicates critical steps)

The evaluation of the nursing staff's knowledge, attitude, and practices showed that a low percentage of nurses obtained a passing mark of above 80% for knowledge, attitude, and practices of breastfeeding in the preliminary study, corresponding to 52% (n=81), 73% (n=114), and 54% (n=84) respectively. This could possibly be related to the increased number of untrained new nursing staff in the clinic, leading to ineffective breastfeeding consultation. Before the study was conducted, 89.3% (n=200) out of 224 nursing staff had attended the 20-hour Breastfeeding Course in 2016, which was organised annually by the nutrition team. The attendance percentage dropped to 83.7% (n=226) out of 270 in 2017. Consequently, it posed an extra burden on the nutritionist to organise more training courses for the staff. A target of 100% had been set for nurses to attend the compulsory 20-hour breastfeeding course as they are the initial contact for the mothers, however this has not been achieved yet. A survey of mothers' knowledge, attitude and practice on exclusive breastfeeding was also conducted. The results showed that most mothers had good breastfeeding knowledge of 93% (n=93) but low achievement in attitude and practices of breastfeeding, which was only 40% (n=40) for both. We found that poor attitude and practice of exclusive breastfeeding among mothers were the result of poor support from the husband and family, fatigue from the laborious process, and common breastfeeding-related problems such as engorged breast, cracked nipple, inadequate supply, and latching issues, as well as history of poor practice of breastfeeding in the family itself.

In terms of health facility support on exclusive breastfeeding, all health clinics in Dungun were already recognised as Baby-friendly Clinics, which means more than 80% of clinical healthcare personnel have been trained with skills to promote, protect and support breastfeeding mothers. However, there were no periodic internal audits and surveillance of the practice until the following validation assessment after 3 years of certification. This resulted in low motivation for the staff to organise any breastfeeding-promoting activities such as group discussions, talks and awareness campaigns to help in supporting breastfeeding mothers.

Strategy

In the first cycle of the remedial phase (November 2016 until May 2017), the issue of inadequate skills among the staff in promoting breastfeeding among staff was addressed by creating a new work process that improves the flow of breastfeeding management (Figure 2). Before the project was implemented, there was no written standard of care for breastfeeding management to refer to. Hence, the critical steps were identified and emphasised in the flow to aid the personnel in assisting breastfeeding mothers in Dungun. To begin with, all mothers should be given breastfeeding counselling, and proper history-taking and breast examination should be made by the nursing staff to identify any breastfeeding problems that the mothers encounter. Appropriate referrals should be made to MO to investigate and treat medical-related breastfeeding problems such as candida infection, mastitis, flat nipple, inverted nipple, post-breast surgery, lump, mass, swelling, redness, dimpling, sore nipple, engorgement, blocked milk duct, and breast abscess, as well as to the surgical department if required. On the other hand, non-medical breastfeeding problems such as inadequate supply, latching and position issues, mothers' refusal to breastfeed, and slow weight gain in the breastfeeding baby must be referred to nutritionists. The new workflow enabled the staff to properly manage breastfeeding issues and thus helped patients seek medical treatment for their problems.

Another strategy was formulated to manage time constraints by improvising the existing breastfeeding teaching aid and distributing it to all clinics. Before this strategy was implemented, the breastfeeding education materials used during the consultation were fully packed with lengthy words, and fewer pictures and no standardised materials were used

in all health clinics. Most nurses found it challenging to deliver all the information during the consultation. Meanwhile, the new breastfeeding teaching kit was handy, compact, organised, and consisted of essential topics for breastfeeding teaching sessions. It ensured the information delivered to patients was correct, complete, and standardised. It was developed in a form filled with visuals and a simplified flipchart on breastfeeding information with an attached breast model that can be used for demonstration during consultation sessions or home visits. Patients were also given pictorial brochures and infographics to strengthen their understanding and memory of what they were taught and counselled on. We received feedback from the nursing staff that the intervention helped them give the mothers useful and important breastfeeding information within the limited time available.

A new strategy was introduced to train breastfeeding educators in Dungun District. This training program was on a voluntary basis, open for all MO and nurses. The pre-requisite to joining this training was the participant must have attended a 20-hour Breastfeeding Course. They will be provided with a new two-day duration course, including a hands-on demonstration of breastfeeding techniques and practical antenatal exercises. The counselling technique was also taught to ensure the counselling given was effective. The course was intended to increase their self-confidence towards becoming trained instructors who will conduct JOM PA& MA at their respective clinics later. Upon completing the course, they were awarded a certificate of recognition as trained breastfeeding educators in the Dungun district.

In the second cycle of the remedial phase (January to August 2018), JOM PA&MA breastfeeding classes were held in each clinic every three months as a medium to convey and share information related to breastfeeding and maternal and child health care in general. The classes were conducted by the district nutritionists, trained breastfeeding educators and physiotherapists. The modules used were from the Malaysia Ministry of Health guidelines. Besides breastfeeding sessions, classes also included teaching antenatal exercises, breathing techniques, and hands-on sessions on handling newborn babies. This class was open to all expecting and postnatal parents. The JOM PA&MA sessions also allowed the healthcare personnel to deliver better consultations and focus on further discussion with groups of parents regarding health issues or myths about breastfeeding. These sessions subsequently received positive feedback from the participants.

Results

After the first cycle of remedial actions, the percentage of exclusive breastfeeding increased to 66.1% (Figure 3). The level of knowledge, attitude, and practices (KAP) among staff improved after the first cycle of intervention, where 97% of nurses achieved good knowledge, 97% had good attitudes, and 94% had good practices. Meanwhile, the level of KAP among mothers in Dungun was also remarkably improved in the first cycle of remedial actions, where 98% of mothers had good knowledge, 96% had good attitude, and 90% had good practice of exclusive breastfeeding.

In general, the exclusive breastfeeding percentage in Dungun gradually increased after the second cycle of remedial actions and finally surpassed the standard and achieved 86.1% in 2021. The achievable benefits not achieved (ABNA) results for pre-remedial phase, the first and second cycles in the remedial phase, and the three cycles of the sustainability phase are shown in Figure 3. According to the data collected from Dungun District Nutritional Status Report, there is also a reduction in the number of kids below five with low weight from 2.39% in 2019 to 0.52% in 2022.

Lessons and Limitations

This project highlighted the many issues contributing to the low percentage of exclusive breastfeeding among postnatal mothers. With the interventions implemented, multiple benefits were

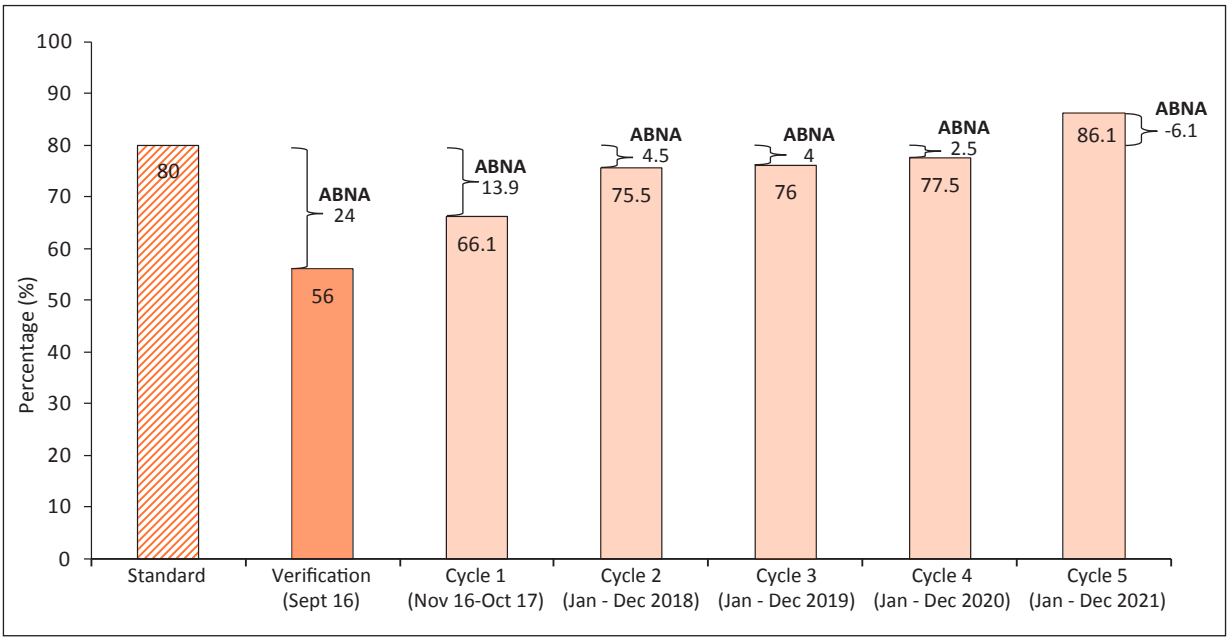

Figure 3: Percentage of exclusive breastfeeding mothers in Dungun from 2016 until 2021

gained, including improved staff confidence to deliver breastfeeding education, mothers able to attend breastfeeding classes organised by nearby clinics, and better time management for the staff. This project also highlighted the importance of staff adherence to the new workflow for more efficient breastfeeding management.

A key lesson learned during the process was the importance of forming a dedicated team; this had a positive impact on formulating effective interventions and had a greater chance of being sustainable. Therefore, consistent and continuous staff training must be held every year.

This project is rather challenging as it needs motivated and dedicated staff to continue the best practice of breastfeeding educators. It is important to continuously engage and train more staff to become breastfeeding educators in the Dungun district.

We also acknowledge certain limitations in our project, where this project only involved the study of breastfeeding practices among mothers in the Dungun district. It may not reflect the population of breastfeeding mothers in Terengganu as they may have different processes of care at the clinics they visit, working environments, cultures and personalities. Further review of the feasibility and suitability of the remedial measures will be needed if implementations of the remedial measures at other places are to be considered.

Other than that, our project only focused on nurses' competency towards breastfeeding management and not the medical officers in health clinics who also play an important role in successful exclusive breastfeeding among mothers. This is an important opportunity to be explored in the future.

Conclusions and Next Steps

In conclusion, this initiative is the first of its kind in Terengganu. We are certain that the strategies within this initiative will serve as a model that can be adapted by other districts in Terengganu and throughout Malaysia. After six years of implementation, there has been a considerable increase in the number of mothers who practice exclusive breastfeeding. This project has proven sustainable since its commencement in 2017. Findings from this study were presented and shared at the Terengganu State Nutritionist Technical Meeting in January 2020. The meeting decided to expand the implementation of the measures to all district health clinics in Terengganu. Hopefully, this study will serve as a starting point for developing an exclusive breastfeeding intervention plan in Malaysia.

Acknowledgement

The authors wish to thank the Director General of Health Malaysia for his permission to publish this work. We would also like to express our gratitude and appreciation to the DHO, family medicine specialists, nutritionists, medical doctors, and nurses in all Dungun health clinics for their assistance and involvement throughout the project. Finally, special thanks to all mothers involved in this project who made it successful till the end.

Conflict of Interest

The authors declare that there was no conflict of interest.

Funding

This research did not receive any specific grant from funding agencies from the public, commercial or not-for-profit sectors.

References

1. National Coordinating Committee on Food and Nutrition, Ministry of Health Malaysia. Malaysian Dietary Guidelines for Children and Adolescents - Summary [Internet]. 2013 [cited 2022 Oct 20]. Available from: https://www.moh.gov.my/moh/resources/auto%20download%20images/589d765c1b95f.pdf

2. National Coordinating Committee on Food and Nutrition, Ministry of Health Malaysia. National Plan of Action for Nutrition of Malaysia III 2016-2025 [Internet]. 2016 [cited 2022 Oct 20]. Available from: https://www.moh.gov.my/moh/resources/Pemakanan/Buku_National_Plan_of_Action_for_Nutrition_of_Malaysia_III_2016-20251.pdf

3. Institute for Public Health (IPH). National Health and Morbidity Survey 2016 (NHMS 2016): Maternal and Child Health. Vol. II: Maternal and Child Health Findings. 2016.

4. Che Muzaini CM, Tengku Alina TI, Rohana AJ, Suhaily MH, Zaharah S, Nazirah J. Maternal factors associated with the initiation of exclusive breastfeeding among mothers at one week after delivery in two selected hospitals in Kelantan, Malaysia. Malaysian J Med Sci. 2018 Aug 1;25(4):112–21.

5. Jabatan Perangkaan Malaysia. Banci Penduduk & Perumahan Malaysia 2020 [Internet]. 2020 [cited 2021 Oct 20]. Available from: https://statsdw.dosm.gov.my/wp-content/uploads/2021/11/DOSM_DOSM.TERENGGANU_1.2020_Siri-85.pdf

6. United Nations Children's Fund. Capture the Moment Early Initiation of Breastfeeding: The best start for every newborn. 1st ed. Maaike Arts, France Bégin, Willibald Zeck CL-L and VMA (UNICEF), editor. New York: UNICEF; 2018.

7. Motee A, Jeewon R. Importance of exclusive breast feeding and complementary feeding among infants. Curr Res Nutr Food Sci. 2014;2(2):56–72.

8. Chowdhury R, Sinha B, Sankar MJ, Taneja S, Bhandari N, Rollins N, et al. Breastfeeding and maternal health outcomes: A systematic review and meta-analysis. Acta Paediatrica, International Journal of Paediatrics. 2015. p. 96–113.

9. Mohapatra I, Roy A. Breastfeeding awareness and perception among antenatal mothers: A cross-sectional study in urban slum population of Bhubaneswar, Odisha. J Educ Health Promot. 2018;7(1):60.

10. Horta BL, Victora CG. Long-term health effects of breastfeeding. A Systematic Review [Internet]. 2013 [cited 2022 Oct 20]. Available from: https://iris.who.int/bitstream/handle/10665/79198/9789241505307_eng.pdf?sequence=1

11. Kebede T, Woldemichael K, Jarso H, Bekele BB. Exclusive breastfeeding cessation and associated factors among employed mothers in Dukem town, Central Ethiopia. Int Breastfeed J. 2020;15(1):1–10.

12. United Nations Children's Fund, World Health Organization. Increasing Commitment To Breastfeeding Through Funding And Improved Policies And Programmes - Global Breastfeeding Scorecard 2020 [Internet]. 2020 [cited 2021 Oct 20]. Available from: https://www.globalbreastfeedingcollective.org/media/546/file

13. Boccolini CS, de Carvalho ML, Couto de Oliveira MI. Factors associated with exclusive breastfeeding in the first six months of life in Brazil: A systematic review. Rev Saude Publica. 2015;49.

14. North K, Gao M, Allen G, Lee AC. Breastfeeding in a Global Context: Epidemiology, Impact, and Future Directions. Clin Ther [Internet]. 2022;44(2):228–44. Available from: https://doi.org/10.1016/j.clinthera.2021.11.017

15. Draman N, Mohamad N, Yusoff HM, Muhamad R. The decision of breastfeeding practices among parents attending primary health care facilities in suburban Malaysia. J Taibah Univ Med Sci. 2017 Oct 1;12(5):412–7.

16. Stamenkovic Z, Matejic B, Djikanovic B, Bjegovic-Mikanovic V. Surprising Differences in the Practice of Exclusive Breastfeeding in Non-Roma and Roma Population in Serbia. Front Public Heal. 2020 Jun 30;8.

17. Mohamad N, Saddki N, Azman KNK, Aziz IDA. Knowledge, attitude, exposure, and future intentions toward exclusive breastfeeding among Universiti Sains Malaysia final year medical and dental students. Korean J Fam Med. 2019 Jul 1;40(4):261–8.

18. World Health Organization. Global Strategy for Infant and Young Child Feeding. UNICEF, editor. World health Organization. Geneva: World Health Organization; 2003. 37 p.

19. Heymann J, Raub A, Earle A. Breastfeeding policy: A globally comparative analysis. Bull World Health Organ. 2013;91(6):398–406.

20. Shohaimi NM, Mazelan M, Ramanathan K, Hazizi MSM, Leong YN, Cheong X Bin, et al. Intention and practice on breastfeeding among pregnant mothers in Malaysia and factors associated with practice of exclusive breastfeeding: A cohort study. PLoS One. 2022 Jan 1;17(1 January).

21. Abdul Hamid H, Szatkowski L, Budge H, Cheah FC, Ojha S. Nutritional practices and growth of preterm infants in two neonatal units in the UK and Malaysia: A prospective exploratory study. BMJ Paediatr Open. 2021 Aug 24;5(1).

22. Hashim S, Ishak A, Muhammad J. Unsuccessful Exclusive Breastfeeding and Associated Factors among the Healthcare Providers in East Coast, Malaysia. Korean J Fam Med. 2020 Nov 1;41(6):416–21.

23. Martín-Iglesias S, Santamaría-Martín MJ, Alonso-Álvarez A, Rico-Blázquez M, del Cura-González I, Rodríguez-Barrientosn R, et al. Effectiveness of an educational group intervention in primary healthcare for continued exclusive breast-feeding: PROLACT study. BMC Pregnancy Childbirth. 2018 Feb 26;18(1).

24. Kementerian Kesihatan Malaysia. Garis Panduan Pelaksanaan Klinik Rakan Bayi Di Malaysia. Malaysia; 2015.