

Knowledge, Attitude and Practice Level of Breastfeeding among Mothers with Children Below Two Years Old in Terengganu

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Abstract

Breast milk is an ideal food for infants because it contains essential nutrients (i.e., vitamins, minerals) and antibodies which are vital for the infants' optimal growth, development and health. Therefore, this cross-sectional study aimed to determine the prevalence of stunting and to assess knowledge, attitude and practice (KAP) toward breastfeeding among mothers with children below two years old in Kuala Nerus and Kuala Terengganu; and to further assess the association between breastfeeding KAP levels and stunting status. Anthropometric measurement of the children consists of weight and length, where a length-for-age Z-scores (LAZ) below -2 SD is considered stunted and severely stunted if below -3 SD. Questionnaires containing two parts: sociodemographic characteristics and validated knowledge, attitude and practice (KAP) of breastfeeding questionnaires. A total of 228 respondents with the mean age of 31.5±4.7 years for the mothers and 1.41±0.8 years for children were recruited in this study. There were 74.1% of respondents had exclusively breastfed their children for six months. Most mothers (98.7%) knew that breastfeeding is beneficial for both mother and child. A very low percentage (10.1%) did not have any idea what colostrum was and its benefits for children. There were less than half (44.3%) respondents appeared to have good knowledge regarding breastfeeding, and about half of the respondent scored fair for attitude (60.2%) and practice (45.2%). However, there was no significant association between KAP levels of breastfeeding and stunting status ($p>0.05$). Therefore, it is important to design strategies for promoting breastfeeding among mothers so that it can improve their knowledge and attitude towards breastfeeding and its practices. Besides, urgent action is needed to reduce the number of stunted children below two years old in Terengganu.

Keywords

Breastfeeding, Knowledge, Attitude, Practice, Stunting, Children

Introduction

The first 1000 days of life is a unique period of opportunity when the foundations for optimum health and development across the lifespan are established [1]. Breast milk is an ideal food for infants as it contains

essential nutrients (i.e., vitamins, minerals) and antibodies that are vital for the infants' optimal growth, development and health [2]. Hence, the World Health Organisation recommends mothers practice exclusive breastfeeding for the first six months of life, and continue breastfeeding until the age of two years with appropriate complementary foods, such as water or soft, and semi-solid food [3].

In Malaysia, the overall prevalence of exclusive breastfeeding and continued breastfeeding among children up to two years old was 47.1% and 39.4%, respectively [4]. Hence, improving mothers' practice of exclusive breastfeeding requires significant attention. Based on the National Plan of Action for Nutrition of Malaysia III of 2016-2025 [5], exclusive breastfeeding was targeted to be at least improved by 70% by 2025. According to a previous study, there are multiple factors that need to be considered why the mothers avoid breastfeeding, such as their sociodemographic characteristics (educational level or occupation) or their previous experience with the infants' feeding (insufficient breast milk or inverted nipples) [6].

Stunting is the impaired growth and development that children experience from poor nutrition, repeated infection, and inadequate psychosocial stimulation [7]. The prevalence of stunting among children below five years old in Terengganu was 26.1% [2]. In Malaysia, Terengganu is the second highest state that has the large number of stunted children, after the state of Kelantan. Since a child's nutritional status, particularly breastfeeding which should start immediately after the child is born, plays an important role in the development and growth of the child. Therefore, this study is conducted to determine the prevalence of stunting and to assess the level of knowledge, attitude and practice toward breastfeeding among mothers with children below two years old, and its association with stunting. Thus, with these data, interventions can be planned to help promote and increase the number of mothers exclusively breastfeed their children and improve the nutritional status of Malaysian children.

Materials and Methods

Study design and study population

This cross-sectional study was part of a larger study conducted among children aged 6 to 24 months and their mothers from the Terengganu districts of Kuala Nerus and Kuala Terengganu. Before the commencement of the study, ethical approval was obtained from the UniSZA Human Research Ethics Committee (UHREC) (UniSZA/UHREC/2022/391). Permission to obtain data on mothers with children below two years old was also obtained from *Yayasan Pembangunan Keluarga Terengganu* (YPKT) and from *Jawatankuasa Pembangunan dan Keselamatan Kampung* (JPKK).

Sampling Method

Purposive sampling technique was employed for this study for the selection of the participants. Children and the mothers were considered eligible for this study based on the inclusion criteria of children aged 6 to 24 months, mothers or parents of the children, mothers who can read, write and understand Malay language. Children were excluded if they had the physical disability, cannot be measured due to illness or postoperative immobilization. Based on the prevalence of stunting of 26.1% of children under five years old in Terengganu [2] and percentage of breastfeeding of 39.4% [4], the calculated sample size was determined using the two-proportion formula by Epitools Epidemiological Calculators. Thus, the minimum sample size required was 236. The final sample size determined with a provision of 10% drop-out rate was 262.

Data collection

After the ethical approval was granted, the list of children who were born in year 2020 to 2022 were obtained from YPKT and JPKK. All the eligible participants were then contacted and participants who met the inclusion criteria were invited to participate in the study. Written informed consent were obtained prior to the data collection. The data collection commenced from August 2022 until March 2023 for a duration of 6 months. Home visit was done every day with at least two houses a day by the trained researchers.

Anthropometric measurement was conducted to assess the nutritional status of the children. Mothers were also interviewed in order to assess their KAP towards breastfeeding. Data collected were then transferred into the SPSS software.

Variables and measurements

Sociodemographic characteristics

The sociodemographic form included age of mother and child, gender of child, race, date of birth, number of children, maternal educational level, and estimated household income.

Anthropometric measurements

For anthropometric measurement, SECA 374 baby scale (SECA, Germany) was used to measure the child's weight to the nearest 0.1kg. The children were weighed without any cloth and shoes to get the accurate weight result. In addition, recumbent length was measured with the child lying on the SECA 374 (SECA, Germany) with the aid from SECA 233 equipment, to the nearest 0.1cm. Both equipment has been calibrated before the measurement to yield high accuracy readings. All measurement is taken two times and the mean value is calculated.

Knowledge, Attitude and Practice Questionnaire on Breastfeeding

The KAP questionnaire was adapted from a local study in Malaysia [8]. There were three sections for the KAP questionnaire. Section one had 8 questions, focus on the knowledge-related questions on breastfeeding, Section two (6 questions) was about attitude towards breastfeeding while Section three (6 questions) was about the practices on breastfeeding among the mothers. There was a total of 20 questions and every question provided three answer choices: "Yes", "No", and "Don't know". A correct answer was assigned "1 point", while "zero point" to a wrong answer and don't know option. Scores were then sum up according to each section. For the cut-off for knowledge sections, scores for 8-12 points classified as good, 3-4 points as fair, 0-2 points as poor. As for the attitude and practice section, 5-6 points classified as good, 3-4 points as fair while 0-2 points classified as poor.

Data analysis

Collected data were analysed using IBM SPSS for Windows version 26. Data cleaning was performed before data analysis. The normality of the data was checked by using Kolmogorov Smirnov; variables were considered normal distribution if p-value >0.05. For descriptive statistics, continuous variables that are normally distributed were presented as means and standard deviation (SD) whereas skewed data were presented as median and interquartile range (IQR). Categorical data were presented as frequency (percentage). Inferential statistics such as Pearson's Chi-square test was presented for categorical analysis. However, if Pearson's Chi-square test was not met for the assumption, the Fisher's exact test was applied. Analysed data with a p value of less than 0.05 was considered statistically significant.

Results

Demographic data

The sociodemographic characteristics of the respondents were displayed in Table 1. The sample consisted of 228 mothers who were mostly Malay (98.7%) with an age ranged from 18 to 49 years old with the mean age of 31.5 ±4.7 years. As shown in Table 4.1, more than half (51.8%) of the mothers received their tertiary education. Most of the mothers' household categories were in B40 categories (85.1%), followed by M40 (14.5%) and T20 (0.4%). A total of 71.5% (n=163) of the mothers had been pregnant for more than once. The majority (94.7%) of the mothers had less than five children. For children, the age ranged from 0 to 24 months. The distribution of gender among the children were quite similar where 50.9% (n=116) were boys and 49.1% (n=112) were girls.

Table 1: Sociodemographic characteristics of participants (n = 228)

Characteristics of the participants	Total	
	n	(%)
Mother's Age (years)		
18-29	79	35.0
30-39	132	57.9
40 and above	16	7.0
Educational Level		
Not formal	1	0.4
Primary school	6	2.6
Secondary school	103	45.2
Tertiary	118	51.8
Household Income		
B40	194	85.1
M40	33	14.5
T20	1	0.4
Race		
Malay	225	98.7
Others	3	1.3
First Pregnancy		
Yes	65	28.5
No	163	71.5
Number of Children		
Less than 5	216	94.7
More than 5	12	5.3
Children's Age (months)		
0-6	46	20.2
7-12	43	18.9
13-24	139	61.0
Children's Gender		
Boys	116	50.9
Girls	112	49.1

Note: B40 income group= <RM5250; M40= RM5251-11819; T20= >RM11820

Prevalence of stunting among children below two years old

Figure 1 depicts the number of children who were stunted and normal based on gender differences. The overall prevalence of stunting was 25.4% (n=58). There were 26.8% of the girls and 24.1% of the boys were stunted as compared to majority of the children were in the normal length-for-age- z-score.

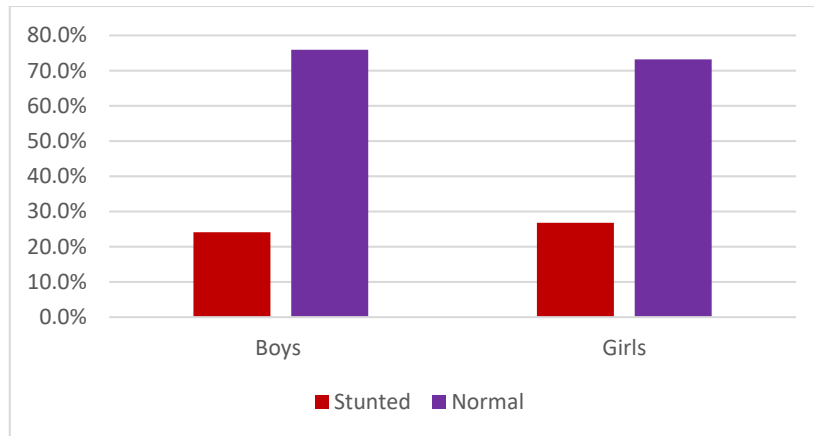


Figure 1: Prevalence of stunting

Knowledge, Attitude and Practice of breastfeeding

Table 2 shows the knowledge about breastfeeding among the mothers. Most mothers (98.7%) knew that breastfeeding is beneficial for both mother and child. About 90.4% were aware that mothers need to breastfeed their children more than eight times per day during the first month. A majority (96.5%) of the respondents knew that complementary food should be introduced to children at the age of six months. Besides, only 66.7% agreed that children should receive breast milk until aged above 24 months but there were 29.8% disagreed with the statements. A very low percentage (10.1%) did not have any idea what colostrum was and its benefits for children.

Table 2: Knowledge about breastfeeding among mothers in Terengganu (n = 228)

Items	Yes	No	I Don't Know
	n (%)	n (%)	n (%)
Breastfeeding child \geq 8 times/day during the first month	206 (90.4)	14 (6.1)	8 (3.5)
Breastfeeding duration \geq 15 min from each breast during the first month	196 (86.0)	20 (8.8)	12 (5.3)
Colostrum is good for the child	198 (86.8)	7 (3.1)	23 (10.1)
Breastfeeding is beneficial for both the mother and the child	225 (98.7)	2 (0.9)	1 (0.4)
Children should receive breast milk until \geq 24 months of age	152 (66.7)	68 (29.8)	8 (3.5)
Complementary food should be introduced at 6 months of age	220 (96.5)	6 (2.6)	2 (0.9)
Breast milk is superior to formula milk in fulfilling a child's necessary dietary requirements	214 (93.9)	11 (4.8)	3 (1.3)
Breast milk is sufficient for a child in the first 6 months of life	215 (94.3)	11 (4.8)	2 (0.9)

Table 3 shows the attitudes of mothers towards breastfeeding. Most mothers (95.2%) intended to breastfeeding in the future while there were six respondents who rejected that idea. Next, 67.1% believed that breastfeeding cannot increase mothers' weight. Meanwhile, 70.6% believed that breastfeeding is not the cause of hair loss. Half (53.1%) of the respondents planned to attend breastfeeding classes in the future, followed by 27.2% who disregard that plan and 19.7% were still unsure whether to attend or not.

Table 3: Attitude about breastfeeding among mothers in Terengganu (n = 228)

Items	Yes	No	I Don't Know
	n (%)	n (%)	n (%)
Breastfeeding cannot increase the mother's weight	153 (67.1)	62 (27.2)	13 (5.7)
One of the causes of hair loss is breastfeeding	29 (12.7)	161 (70.6)	38 (16.7)
Pumping breast milk is still beneficial for the child	193 (84.6)	24 (10.5)	11 (4.8)
Mothers should not stop breastfeeding if they take any type of medication	139 (61.0)	56 (24.6)	33 (14.5)
Intention to breastfeed future children	217 (95.2)	6 (2.6)	5 (2.2)
Plan to attend breastfeeding classes in a future pregnancy	121 (53.1)	62 (27.2)	45 (19.7)

Table 4 illustrates the practice of breastfeeding among the mother. About 76.8% initiated breastfeeding immediately after delivery. Most of the respondents exclusively breastfed their children for six months (74.1%) while 22.8% did not practice exclusive breastfeeding due to various reasons. Besides, 59.2% of the mothers still breastfed their children during our data collection and most of them intended to continue the practice until their children aged 24 months and above. The majority (62.7%) of the respondents never attended breastfeeding classes during pregnancy, followed by 33.3% (n=76) who had attended it before and 3.9% (n=9) who were not sure about the breastfeeding classes.

Table 4: Practice about breastfeeding among mothers in Terengganu (n = 228)

Items	Yes	No	I Don't Know
	n (%)	n (%)	n (%)
Initiation of breastfeeding immediately and within the first hour of life	175 (76.8)	45 (19.7)	8 (3.5)
Currently breastfeeding the last child and intending to continue until the age of ≥ 24 months	135 (59.2)	82 (36.0)	11 (4.8)
Exclusively breastfed the last child for 6 months	169 (74.1)	52 (22.8)	7 (3.1)
Planning to continue exclusively breastfeeding the last child until 6 months of age	168 (73.7)	46 (20.2)	14 (6.1)
Child was not given ready-made liquid formula in the hospital	124 (54.4)	95 (41.7)	9 (3.9)
Attended breastfeeding classes during pregnancy	76 (33.3)	143 (62.7)	9 (3.9)

Table 5 shows the total score of knowledge, attitude and practice toward breastfeeding. There were less than half (44.3%) respondents appeared to have good knowledge regarding breastfeeding while 55.7% of the respondents scored fair on knowledge. Next, the majority of the respondents (60.1%) scored fair on attitude towards breastfeeding, followed by 26.8% had a good attitude and 13.2% had a poor attitude. For the practice of breastfeeding, only 33.8% of mothers scored good while 45.2% had a fair scored and another 21.1% appeared to have poor practice.

Table 5: Knowledge, attitude and practice of breastfeeding among mothers (n=228)

Variables	Poor	Fair	Good
	n (%)	n (%)	n (%)
Knowledge	3 (1.3)	127 (55.7)	101 (44.3)
Attitude	30 (13.2)	137 (60.1)	61 (26.8)
Practice	48 (21.1)	103 (45.2)	77 (33.8)

Pearson's Chi-Square test was applied to determine the association between stunting status; and attitude and practice of breastfeeding among the mothers while Fisher's Exact test was applied to determine the association between knowledge of breastfeeding and stunting status. Nevertheless, there was no significant association of knowledge ($p=0.447$), attitude ($p=0.545$) and practice ($p=0.707$) towards breastfeeding with stunting status.

Table 6: Association between knowledge, attitude and practice of breastfeeding and the stunting status in Terengganu (n=228)

Variables		Stunting	Normal/Not stunting	P-value
		n (%)	n (%)	
Knowledge	Good	23 (39.7)	78 (45.9)	0.447 ^b
	Fair	35 (60.3)	92 (54.1)	
	Poor	1 (1.7)	2 (1.2)	
Attitude	Good	14 (24.1)	47 (27.6)	0.545 ^a
	Fair	34 (58.6)	103 (60.6)	
	Poor	10 (17.2)	20 (11.8)	
Practice	Good	17 (29.3)	60 (35.3)	0.707 ^a
	Fair	28 (48.3)	75 (44.1)	
	Poor	13 (22.4)	35 (20.6)	

^a Pearson's Chi-Square Test

^b Fisher's Exact Test

Discussion

In this study, the prevalence of stunting (25.5%) was relatively consistent with the National Health and Morbidity Survey (NHMS) in 2016, which reported a stunting rate of 26.1% among children under 5 years in Terengganu [4]. The stunting prevalence in this study was also similar to the reported in Pahang (25.7%). However, Kelantan is still the highest state that has stunting cases with 34% [4]. Furthermore, the findings of the study were in accordance with the current prevalence of stunting in children aged 6-23 months of Musanze region in Rwanda, where 19% of children are reported to be stunted and 9% were severely stunted [9].

Apart from that, 20% of Malaysian children were at risk of stunting according to NHMS 2019 [10]. It is critical to identify stunting early on before child growth deteriorates further. It has been demonstrated that growth parameters of those children who are at risk of malnutrition can be reversed by taking the appropriate measures [11]. Besides, the risk of stunting was higher in older children (12-24 months) compared to the youngest age group (0-11 months) as they appeared to benefit from breastfeeding's nutrient-rich and protective effect of breastfeeding, but inappropriate complementary feeding was more likely to be hampered during this time, which can have a negative impact on a child's growth [12].

Our study also showed that a higher proportion of girls were stunted than boys. A recent study showed that moderate malnourishment was higher in girls than males with 18.1% and 17.4%, respectively [13]. Some of the factors that contributed to this finding were the mother's education level, wealth index, early childhood development and diarrhoea. However, the NHMS (2016) [4] revealed that boys (22.2%) were the most affected by stunting compared to girls (19.2%). Moreover, findings from systematic review and meta-analyses also reported that the prevalence of stunting as well as the risk of stunting in boys was higher than in girls [14]. Early complementary feeding as well as receiving breast milk for 2-3 months might be detrimental to length status thus, lead to a poorer nutritional status in boys [11].

This study showed that most of the respondents (55.7%) scored moderately on knowledge when it comes to breastfeeding. In contrast, the previous study revealed that the majority of the mothers obtained a good score for overall knowledge level regarding breastfeeding (51.2%) [15]. A lot of them gained knowledge like the benefits of breast milk or the duration of breastfeeding from their families (such as mother, sisters or mother-in-law), specifically those who had experienced in breastfeeding. Another study in Fiji also stated that most mothers had good breastfeeding knowledge [16].

The majority of the respondents are aware that breastfeeding is beneficial for both mother and child in this study. To support this finding, a study done in Abu Dhabi revealed that 94% of mothers have the knowledge regarding the benefits of breastfeeding [17]. Mothers thought that the breast milk is the right food for their children and protects against diseases like diarrhoea. Meanwhile, they also thought that practising breastfeeding could reduce the risk of breast cancer and ultimately, create a bond between mother and child [18].

Additionally, 94.3% of respondents in our study knew that breast milk is ample for their children in the first six months of life, reflecting their understanding of exclusive breastfeeding. It is recommended that children receive breast milk only until six months old and start complementary food at six months of age [1]. Besides, a study done in Malaysia reported that most of the mothers were aware that colostrum is good for the child [8]. However, if it is being compared with our findings, the numbers of mothers with this knowledge were lower. Another study also found that 45.3% of the mothers discarded the colostrum (also known as the first breast milk) [19]. Therefore, it is plausible that the cultural belief could play a role in this finding because some of them believe that colostrum is bad [20].

Majority of the respondents (60.1%) in our study also scored moderately on attitude towards breastfeeding. The finding of this study was similar to a previous study, with 61.5% having a moderate score of attitudes towards breastfeeding [20]. Another study done in Abu Dhabi showed that 52.9% of subjects had moderate score of attitudes towards breastfeeding, which was much lower than the percentage reported in the recent study [17].

We observed 67.1 % of the respondents believed that breastfeeding cannot increase the mothers' weight. It was in accordance with a previous study that 72.6% of the subjects believed that breastfeeding cannot increase mothers' weight [8]. On the other hand, a study done in India revealed that most of the mothers agreed that breastfeeding causes changes in body shape [21]. Furthermore, the majority of the respondents in this study appeared to believe that pumping breast milk is still beneficial for the child. In particular, they seem to think that breastfed children are healthier than bottle-fed children [22]. Our observation showed that 95.2% of the respondents have an intention to breastfeed their future children. The finding is similar to a recent study that reported 99.4% of pregnant mothers who have the intention to execute breastfeeding significantly due to the fact, there was increased breastfeeding awareness program in health clinics [23].

Moreover, a study reported that pregnant mothers in Ethiopia who attended at least 4 antenatal classes (ANC) had a better attitude towards breastfeeding [24]. In the same way, from our study, 53.1% of respondents had an intention to join ANC in the future, meaning they have a favourable view of breastfeeding. Additionally, partner support or family support also plays an important role in influencing the attitude or mood of the mothers towards breastfeeding. They can help with home-related tasks and ensure mothers are adequately rested and nourished so they can breastfeed successfully [4]. Significantly, 45.2% of the respondents in our study obtained a moderate score for the practice of breastfeeding. Another study done in Muar revealed 52% of the mothers had positive practices on breastfeeding [25]. The reported rate of breastfeeding practices in our finding was much higher than another study in an island of Abu Dhabi, [17] with a difference of 7%.

Our finding presented that 76.8% of the respondents-initiated breastfeeding immediately as well as within the first hour of life. It is quite similar to a study done in Fiji where 86.8% of the mothers-initiated breastfeeding immediately after delivery [16]. In contrast, there was a study where the percentage of mothers who initiated breastfeeding within one hour is lower than our findings, with 51.8% only [22]. Early initiation of breastfeeding specifically within one hour of birth is important as it protects the children against infection and reduce newborn mortality [2].

There were 74.1% of respondents in our study had exclusively breastfed their children for six months. The finding was close to a previous study, that 75.1% of subjects exclusively breastfed (EBF) their children [8]. Additionally, both of the studies had a higher prevalence of EBF compared to the national prevalence of EBF among children under six months (47.1%) [4]. In addition, 54.4% of respondents in our study reported that their children were not given any ready-made liquid from the hospital. A study done in India unveiled that 84.1% of the children were not given any pre-lacteal feed during the first six months of life [21].

Interestingly, we observed that only 33.3% had experienced joining breastfeeding classes during pregnancy in our study. Another study in Kelantan revealed that the prevalence of mothers who ever attended breastfeeding classes (11.0%) was much lower than our study [26]. The low number of mothers joining such class is concerning. The Ministry of Health Malaysia (MOH) has launched an initiative to provide service, advice as well as guidance for the health of mothers and children. For example, Baby Friendly Clinics (BFC) were established to encourage mothers to practice EBF and breastfeed their children up to two years old. There are numerous reasons why mothers discontinued breastfeeding. According to a study in Muar, 35.5% of the mothers had to stop practising EBF due to insufficient breast milk production [27]. Insufficient breast milk production could occur due to lactation missed management such as poorly timed feeds, infrequent feeds and poor attachment. The BFC could provide guidance to the mothers on the precise positioning and attachment of the children on the breast. In addition, because of work resumption,

some mothers could not continue breastfeeding or breastfed their children less than three months, specifically with skin-to-skin contact.

From this study, there was no significant association between knowledge, attitude and practice of breastfeeding and stunting status. The finding is relatively consistent with previous study where it reported there was no significant association between practices of exclusive breastfeeding (EBF) and stunting [27]. A local study also revealed that there was no significant association between the mother's KAP and the nutritional status of children yet they believed it supposedly has a relationship between those two variables [28]. Additionally, a previous study stated that EBF for the entire first six months of life is effective to protect the children against infection [29]. Stunting is a sign of chronic undernutrition, and it may take more than six months to notice the effects of EBF, which may explain the lack of relationship between EBF and stunting. Longitudinal studies with longer period of follow-up may be useful to assess how EBF affects children's growth parameters, such as stunting, until the children reach the age of two years old and beyond.

In contrast, a study found there was a significant association between knowledge and practice on early breastfeeding initiation and stunting status [30]. It illustrates early initiation to breastfeeding as a form of maternal care and the best giving of nutrients early in life that can reduce the risk of stunting. Notably, a recent study revealed a significant association between mothers' KAP of breastfeeding and stunting [31]. Mothers play a crucial role during the children's first 1,000 days of life as it is an important period where rapid growth and development occur. To ensure that children receive proper nourishment, especially breast milk, mothers must have good knowledge, a positive attitude and good practice of breastfeeding to improve the nutritional status of the children as well as reduce the risk of stunting.

Conclusion

The current study has shown that there was no significant association between knowledge, attitude and practice of breastfeeding and stunting status among mothers with children below two years old in Kuala Nerus and Kuala Terengganu. In general, the majority of mothers scored fair on knowledge, attitude and practices towards breastfeeding. Lastly, the prevalence of stunting among children below two years old in Terengganu was 25.5%. Further studies need to be conducted to investigate breastfeeding practices and challenges faced during breastfeeding among mothers, as it is linked with children's nutritional status. Therefore, it could provide insight into the effectiveness of breastfeeding knowledge delivery programs targeting this population.

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Conflict of Interest Disclosure

None to declare

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