

ORIGINAL ARTICLE

Factors Influencing Exclusive Breastfeeding Intention Among Antenatal Mothers in Sarikei, Sarawak

Johnny Ling Shean Kang, Helmy bin Hazmi, Cheah Whye Lian

Department of Community Medicine and Public Health, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia.

ABSTRACT

Introduction: Exclusive breastfeeding (EBF) for six months is strongly recommended due to its health benefits, yet EBF rates remain suboptimal in Malaysia. Maternal intention is a strong predictor of breastfeeding behaviour. This study examines the factors influencing EBF intention among antenatal mothers in Sarikei, Sarawak. **Materials and Methods:** A cross-sectional study was conducted among pregnant women attending antenatal care at two systematically selected health clinics. Universal sampling was used. Data were collected via face-to-face interviews using validated tools: the Iowa Infant Feeding Attitude Scale (IIFAS), the Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF), and a breastfeeding knowledge questionnaire. Binary logistic regression was used to identify significant predictors of EBF intention. **Results:** Among 137 participants, 81.0% intended to practise EBF. Binary logistic regression revealed that husband support (AOR = 7.949, 95% CI: 1.147–55.092, $p = 0.036$) and family support (AOR = 7.646, 95% CI: 1.899–30.785, $p = 0.004$) were significant predictors of EBF intention. Knowledge, attitudes, and self-efficacy were not independently associated with EBF intention. **Conclusion:** Husband and family support play crucial roles in shaping EBF intention. Future interventions should prioritise engaging family members in breastfeeding education and support programmes to improve EBF rates. This study may be subject to a few biases commonly associated with cross-sectional designs, including social desirability bias and recall bias. The use of a single question measure for breastfeeding intention may limit interpretation. Longitudinal studies are recommended to assess how intention translates into actual breastfeeding behaviour.

Malaysian Journal of Medicine and Health Sciences (2026) 22(3): 1-10.doi:10.47836/mjmhs.v22i3.1610

Keywords: Exclusive Breastfeeding, Breastfeeding Intention, Family Support, Sarawak, Antenatal Mothers

Corresponding Author:

Cheah Whye Lian, PhD

Email: wlcheah@unimas.my

Tel: +6082-267525

INTRODUCTION

Exclusive breastfeeding (EBF), defined as providing an infant only breast milk without any additional food or drink, not even water, for the first six months of life, is strongly recommended by the World Health Organization (WHO) and other health authorities due to its well-documented benefits for infant health, growth, and development (1). EBF is associated with reduced infant morbidity and mortality, enhanced cognitive outcomes, and long-term health benefits for both mother and child. Despite these advantages, global and regional EBF rates remain suboptimal, including in Malaysia, where adherence to EBF recommendations remains below the desired targets (2, 3).

Maternal intention to exclusively breastfeed is a well-established predictor of actual breastfeeding behaviour

(4, 5). Various factors influence EBF intention, including maternal sociodemographic characteristics, education level, parity, previous breastfeeding experience, breastfeeding knowledge, attitudes, self-efficacy, and social support (6, 7, 8, 9). However, while these factors have been extensively studied in other populations, their specific influence on EBF intention among antenatal mothers in Sarawak remains unclear.

Sarikei, a semi-urban district in Sarawak, Malaysia, provides an ideal setting to examine breastfeeding intentions across diverse socio-economic and cultural backgrounds. The district has an active maternal and child health service network implementing national breastfeeding promotion initiatives. Previous studies have reported an EBF prevalence of 37.8% in Sarikei, with key influencing factors including prior breastfeeding experience, perceived spousal support, early initiation of breastfeeding, and maternal knowledge and attitudes (10). However, it is interesting to explore how EBF intention has evolved since 2018 and whether the efforts implemented have led to any improvements. Assessing the current performance and examining whether these

contributing factors remain relevant will provide valuable insights into the effectiveness of existing interventions and highlight areas that may require further attention.

Therefore, this study aims to provide an updated understanding of the factors influencing EBF intention among antenatal mothers in Sarikei, Sarawak. By assessing the prevalence of EBF intention and examining sociodemographic, psychological, and social support factors, it seeks to address existing knowledge gaps and generate evidence to inform targeted interventions that strengthen breastfeeding promotion efforts and improve EBF rates.

MATERIALS AND METHODS

Study design

This study employs a cross-sectional design to examine factors associated with exclusive breastfeeding intention among antenatal mothers in Sarikei, Sarawak.

Study setting and population

The study was conducted in Sarikei Division, Sarawak, Malaysia. Sarawak, the largest state in Malaysia, is known for its ethnic diversity, with a population of 2,453,677 as reported in the 2020 Malaysia Census. The ethnic distribution includes 74.0% Indigenous and Malay populations (48.5% Indigenous, 23.5% Malay) and 22.6% Chinese (11). Sarikei Division, spanning 4,332 square kilometres, has a total population of approximately 96,000 and mirrors the demographic composition of Sarawak (12).

Sarikei was selected as the study site due to its unique mix of rural and semi-urban populations, allowing for an exploration of how socio-economic and geographical factors shape EBF intentions. To ensure a representative sample, two key maternal and child health service providers, Sarikei Health Clinic and Pakan Health Clinic, were systematically randomly selected. These clinics serve diverse populations and play a central role in delivering antenatal care, making them ideal settings for assessing breastfeeding intention among expectant mothers.

At the participant selection stage, universal sampling was employed, whereby all antenatal mothers attending follow-up or booking appointments at the selected clinics during the study period were invited to participate, provided they met the inclusion and exclusion criteria as stated below. This method ensures comprehensive representation of the study population, minimising selection bias and allowing for a more accurate assessment of exclusive breastfeeding intention within the Sarikei Division.

Inclusion Criteria:

1. Pregnant women (28th to 36th gestational week) aged 18 years and above with antepartum risk colour codes of white, green, or yellow throughout the current pregnancy.
2. Ability to communicate in English or Malay.
3. Pregnant women who had completed the 13 topics of antenatal education in their respective health clinic.

Exclusion Criteria:

1. Women diagnosed with any antepartum obstetric complications classified as red coded.

Sample size

For this study, the required sample size was calculated using the single proportion formula, based on the estimated exclusive breastfeeding rate of 37.8% in Sarikei (10). Where $Z = 1.96$ (corresponding to a 95% confidence level), prevalence of exclusive breastfeeding of 0.378, and a margin error of 0.1. Given the constraints in time and resources, as well as the relatively limited number of pregnant mothers in Sarikei, using a 10% margin of error is a practical decision to ensure feasibility while still obtaining meaningful data. Expanding to more divisions would require additional resources, which were beyond the scope of this study. The calculated sample size is 90 participants. With a 20% non-response rate, the adjusted sample size is calculated. Thus, a minimum of 113 antenatal mothers should be recruited to ensure sufficient statistical power while accounting for potential non-responses or dropouts.

Data collection procedure and instrument

Recruitment was facilitated by healthcare providers, who introduced the study to potential participants and provided them with the participant information sheet. Those who agreed to participate provided informed consent before proceeding with the interview. Subsequently, data were collected through face-to-face interviews from 1st October 2024 to 31st January 2025. The interviews were conducted using validated tools in Malay and English, which took approximately 20–30 minutes per participant.

The questionnaire used in this study consisted of several sections that measured different variables related to breastfeeding knowledge, attitude, and self-efficacy. To ensure accessibility and comprehension among participants, the questionnaire was made available in both Malay and English, catering to the linguistic diversity of the study population. The questionnaire underwent pilot testing prior to the main study to assess clarity, cultural appropriateness, and feasibility.

The first section captured sociodemographic and social characteristics, including participants' age, education level, marital status, employment status, household income, parity, previous breastfeeding experience, partner and family support level, and their intention to breastfeed during the current pregnancy. The intention to breastfeed during the current pregnancy was the primary outcome variable, was assessed using a single, direct question: "Do you plan to exclusively breastfeed your baby later?" with two possible responses of "Yes" or "No". This approach, adopted in previous research was chosen after consultation with two subject matter experts for its clarity, ease of administration and suitability for use in the selected clinic settings (9).

The questionnaire for assessing breastfeeding knowledge, was adopted from Tengku Ismail and Sulaiman (13) with permission. The original study employed factor analysis to construct ten domains of knowledge, resulting in a 47-item final questionnaire with a Cronbach's alpha of 0.77, indicating good internal consistency. Each item had categorical response options: correct, wrong, or not sure. Correct responses were scored as one, while incorrect or unsure responses were scored as zero. The total knowledge score ranged from 0 to 47, with higher scores reflecting greater breastfeeding knowledge (13).

To measure breastfeeding attitude, the study utilised the Iowa Infant Feeding Attitude Scale (IIFAS). The Malay version of the scale was adopted from Nurjasmine et al. (14) with permission, while the original English version was obtained from the copyright holder Mora et al. (15). The IIFAS comprises 17 items rated on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate a more positive attitude towards breastfeeding. The Cronbach's alpha for the scale was 0.62, with a test-retest reliability of $r = 0.802$, $p < 0.01$ (14).

The Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) was used to assess breastfeeding self-efficacy. The Malay version of the BSES-SF was adapted from Husin et al. (16). Permission to use the original English version was obtained from Dennis (17). The BSES-SF consists of 14 items, each beginning with "I can always", rated on a 5-point Likert-type scale ranging from 1 ("not at

all confident") to 5 ("always confident"). The score ranged from 14 to 70 higher score indicates high self-efficacy. In a postnatal study by Husin et al, (16), the BSES-SF demonstrated strong internal consistency, with a Cronbach's alpha of 0.95.

Statistical analysis

Descriptive statistics, including mean, median, standard deviation, frequencies, and percentages, were used to summarise participant characteristics. To examine differences between those with and without exclusive breastfeeding intention for the current pregnancy, chi-square tests and Fisher's exact tests were applied for categorical variables, while independent t-tests or Mann-Whitney U tests were used for continuous variables, depending on data distribution. All statistical analyses were conducted using SPSS version 27, with statistical significance set at $p < 0.05$. Additionally, binary logistic regression was performed to identify significant predictors of exclusive breastfeeding intention for the current pregnancy, with results reported as adjusted odds ratios (OR) and 95% confidence intervals (CI). Variables demonstrating p-values below 0.25 in the univariate analyses were included as potential factors in the multiple logistic regression model (18). Linearity tested in the logit using the Box-Tidwell transformation. The Durbin-Watson statistic was 2.015, indicating no significant autocorrelation. Multicollinearity was within an acceptable range, with variance inflation factors (VIF) between 1.321 and 1.895. All studentized residuals reported less than 2.5, confirming no extreme outliers affecting the model.

RESULTS

Participants characteristics

The Table I presents the baseline characteristics of the participants. The majority of antenatal mothers (81.0%) reported an intention to practise EBF for their current pregnancy. The mean age of participants with EBF intention was 29.3 years (SD = 4.8), while those without EBF intention had a mean age of 28.9 years (SD = 4.5), with no significant difference between the groups ($p = 0.657$). No statistically significant differences observed for ethnicity, education, employment, income, marital status, parity, or previous EBF experience (all $p > 0.05$).

Table 1: Baseline Characteristics of Participants by EBF intention.

	With EBF intention (N=111)		Without EBF intention (N=26)		p value
	N(%)	Mean(SD)	N(%)	Mean(SD)	
Age		29.3(4.8)		28.9(4.5)	0.657
Ethnicity					0.492
Chinese	38(34.2)		10(38.5)		
Dayak	33(29.7)		4(15.4)		
Malay	28(25.2)		9(34.6)		
Others	12(10.8)		3(11.5)		
Education attainment					0.185
Never went to school/Completed primary school	2(1.8)		2(7.7)		
Completed secondary education	57(51.4)		15(57.7)		
Completed college or university	52(46.8)		9(34.6)		
Employment status					0.361
Unemployed	58(52.3)		11(42.3)		
Employed	53(47.7)		15(57.7)		
Monthly household income		3,587.2(2,776.8)		3,433.8(2,382.7)	0.965
Marital status					1.000
Single/Widowed	4(3.6)		0(0.0)		
Married	107(96.4)		26(100.0)		
Parity					0.622
Primigravida	44(39.6)		7(26.9)		
1 child	39(35.1)		10(38.5)		
2 children	14(12.6)		5(19.2)		
>3 children	14(12.6)		4(15.4)		
Previous exclusive breastfeeding experience					0.586
No	75(67.6)		19(73.1)		
Yes	36(32.4)		7(26.9)		
Husband support on breastfeeding					<0.001
No/unsure	3(2.7)		8(30.8)		
Yes	108(97.3)		18(69.2)		
Family member support on breastfeeding					<0.001
No/unsure	6(5.4)		11(42.3)		
Yes	105(94.6)		15(57.7)		
Knowledge score		28.1(8.8)		23.9(7.5)	0.025
IIFAS Total		58.3(7.0)		55.5(5.5)	0.062
BSES-SF Total		55.0(11.0)		50.4(9.9)	0.052

Note. p value of less than 0.05 is bolded.

Husband and family support for breastfeeding showed significant differences between the two groups. Among those with EBF intention, 97.3% reported having husband support, compared to 69.2% in the non-EBF intention group ($p < 0.001$). Similarly, family support was significantly higher among participants with EBF intention (94.6%) compared to those without (57.7%) ($p < 0.001$).

The mean knowledge score was significantly higher among participants with EBF intention (28.1, SD = 8.8) than those without (23.9, SD = 7.5) ($p = 0.025$). Attitude towards infant feeding, measured using the IIFAS, showed a higher mean score in the EBF intention group (58.3, SD = 7.0) compared to the non-EBF intention group (55.5, SD = 5.5), though this difference did not reach statistical significance ($p = 0.062$). Breastfeeding self-efficacy, as measured by the BSES-SF, was higher among those with EBF intention (55.0, SD = 11.0) compared to those without (50.4, SD = 9.9), with borderline significance ($p = 0.052$).

Binary logistic regression

A binary logistic regression analysis controlled for age was performed to examine the factors associated with the intention for exclusive breastfeeding during the current pregnancy. Covariate selection was guided by both statistical considerations aforementioned and theoretical relevance identified from previous literature (9). The variables entered to the model included age, educational attainment, husband's support for breastfeeding, family member support for breastfeeding, breastfeeding knowledge score, IIFAS score, BSES-SF score. The analysis was performed using the enter method. The overall model was statistically significant ($\chi^2(8) = 29.009$, $p < 0.001$), indicating that the predictor variables collectively contributed to explaining exclusive breastfeeding intention. The model demonstrated moderate explanatory power, with a Cox & Snell R of 0.191 and a Nagelkerke R of 0.307. The Hosmer-Lemeshow test suggested a good model fit ($\chi^2(8) = 6.516$, $p = 0.590$), and the model correctly classified 84.7% of the cases. The result is shown in Table II.

Table II: Binary logistic regression analysis.

	AOR	95% CI		p value
		Lower	Upper	
Age	0.953	0.843	1.076	0.436
Education attainment				0.892
Never went to school/ Completed primary school	1.000	-	-	-
Completed secondary education	0.655	0.032	13.591	0.785
Completed college or university	0.524	0.022	12.333	0.689
Husband support on breastfeeding				
No/unsure	1.000	-	-	-
Yes	7.949	1.147	55.092	0.036
Family member support on breastfeeding				
No/unsure	1.000	-	-	-
Yes	7.646	1.899	30.785	0.004
Knowledge score	1.013	0.934	1.099	0.752
IIFAS Total	1.043	0.949	1.146	0.386
BSES-SF Total	1.004	0.956	1.056	0.865
Constant	0.047			0.317

Note. p value of less than 0.05 is bolded.

Age was not significantly associated with EBF intention (AOR = 0.953, 95% CI: 0.843–1.076, $p = 0.436$). Similarly, education attainment did not show a significant association with EBF intention. Compared to participants who had never attended school or completed only primary education, those who completed secondary education (AOR = 0.655, 95% CI: 0.032–13.591, $p = 0.785$) and those with a college or university education (AOR = 0.524, 95% CI: 0.022–12.333, $p = 0.689$) were not significantly more likely to have EBF intention.

Husband support for breastfeeding emerged as a significant predictor. Participants who reported having husband support had significantly higher odds of intending to practise EBF (AOR = 7.949, 95% CI: 1.147–55.092, $p = 0.036$) compared to those whose husbands

did not support or were unsure about breastfeeding. Likewise, family support for breastfeeding was a strong predictor, with those receiving family support being significantly more likely to intend to practise EBF (AOR = 7.646, 95% CI: 1.899–30.785, $p = 0.004$) than those without such support.

Knowledge score was not significantly associated with EBF intention (AOR = 1.013, 95% CI: 0.934–1.099, $p = 0.752$). Similarly, breastfeeding attitudes, as measured by the IIFAS, did not significantly predict EBF intention (AOR = 1.043, 95% CI: 0.949–1.146, $p = 0.386$). Breastfeeding self-efficacy, assessed using the BSES-SF, also did not show a significant relationship with EBF intention (AOR = 1.004, 95% CI: 0.956–1.056, $p = 0.865$).

DISCUSSION

This study examined factors associated with the intention to practise EBF among antenatal mothers in Sarikei, Sarawak. The findings revealed that while sociodemographic variables such as age, education level, employment status, parity, and previous breastfeeding experience were not significantly associated with EBF intention, both support from husbands and family emerged as strong predictors. In contrast, knowledge, attitudes, and self-efficacy did not show significant associations in the adjusted model.

First of all, intention is an essential determinant of behaviour and is often used as a proxy for actual breastfeeding practices (19). According to the Theory of Planned Behaviour, intention reflects a mother's motivation and commitment to breastfeed, which can strongly predict subsequent actions. In this study, most antenatal mothers reported an intention to practise EBF for their current pregnancy. This high proportion aligns with existing literature suggesting that many expectant mothers express a strong initial commitment to EBF, reflecting growing awareness of its benefits. However, the imbalance between those mothers with and without EBF intention may have reduced the ability to detect statistically significant differences for some predictors. It is also important to recognise that intention does not always translate into actual behaviour, as various postnatal factors such as breastfeeding challenges, social influences, and workplace constraints may affect adherence to EBF practices. Understanding the determinants of EBF intention is crucial, as intention serves as a key predictor of later breastfeeding behaviour, guiding targeted interventions and support strategies to bridge the gap between intention and practice.

The lack of significant differences in age between those with and without EBF intention suggests that age alone may not be a decisive factor in breastfeeding decisions. Previous studies have reported mixed findings regarding age, with some suggesting that younger mothers may

have lower breastfeeding intentions due to a lack of experience, whereas others suggest the opposite, or find no clear relationship between maternal age and EBF intention at all (4, 9, 20, 21, 22). The similarity in age distribution between the two groups in this study aligns with the latter, indicating that other psychosocial and environmental factors may play a more prominent role.

Educational attainment also did not show a significant association with EBF intention, although higher education levels are often linked to better health literacy and informed decision-making (22). This could be due to cultural norms or access to breastfeeding support, which may play a more dominant role in shaping maternal decisions. Additionally, a small sample size for certain education subgroups, may have limited the ability to detect a significant effect.

In this study, parity and past EBF experience were examined as potential factors influencing EBF intention among antenatal mothers. Multiparous mothers, particularly those with previous successful EBF experiences, are generally expected to have higher EBF intention due to increased confidence and familiarity with breastfeeding practices. Similarly, prior EBF experience is often associated with a stronger intention to exclusively breastfeed, as mothers who have successfully breastfed before are more likely to perceive EBF as achievable and beneficial (23, 24). However, despite these associations, neither parity nor past EBF experience was found to be significant in the univariate analysis.

The lack of statistical significance in the univariate analysis may be attributed to several factors. First, the sample size may not have been large enough to detect a significant association, particularly the distribution of parity and past EBF experience was relatively even among participants. Second, other confounding factors, such as maternal knowledge, self-efficacy, and social support, may have played a more dominant role in shaping EBF intention, potentially overshadowing the effects of parity and past breastfeeding experience. Additionally, some multiparous mothers with prior EBF experience may have encountered challenges in sustaining EBF, leading to uncertainty in their intention despite their past practice (24). The neutral IIFAS scores observed in this study suggest that mothers may not have strong personal convictions about breastfeeding, which could dilute the impact of experience on current intention. This suggests that while parity and past EBF experience are important considerations, they may not independently determine EBF intention without the influence of additional psychosocial and structural factors.

Husband support for breastfeeding emerged as a significant predictor of EBF intention. Women who received support from their husbands had nearly eight

times higher odds of intending to practise EBF compared to those whose husbands were unsupportive or unsure. This finding highlights the critical role of paternal involvement in breastfeeding decisions. Prior studies have consistently demonstrated that partner encouragement can positively impact breastfeeding initiation and continuation, likely by providing emotional support and assisting in overcoming breastfeeding challenges (25, 26, 27, 28). Thus, interventions targeting breastfeeding promotion should include strategies to engage fathers in breastfeeding education and support (29).

Similarly, family support for breastfeeding was a strong predictor of EBF intention, with women who reported family support being over seven times more likely to intend to practise EBF. In many cultural settings, family members, particularly grandmothers and extended relatives, play an influential role in infant feeding decisions. Supportive family environments can provide reassurance and guidance, fostering a more conducive atmosphere for successful breastfeeding (30). Conversely, a lack of familial encouragement may contribute to early breastfeeding cessation or mixed feeding practices. These findings underscore the importance of strengthening family-centred breastfeeding interventions to enhance EBF uptake.

Breastfeeding knowledge, as assessed in this study, was found to be poor, with a mean score of less than 60%, based on Bloom's cutoff for adequate knowledge (31). Poor knowledge can negatively affect breastfeeding intention, as mothers who lack essential information may feel uncertain or unprepared for exclusive breastfeeding (32, 33, 34). However, knowledge alone did not significantly predict EBF intention in our adjusted model. Our finding aligns with previous research indicating that knowledge must be reinforced with positive attitudes, confidence, and social support to translate into behavioural intent (35, 36). Additionally, the overall low knowledge levels across the study population may have reduced variability in responses, potentially underestimating its predictive value. Despite this, efforts to improve breastfeeding knowledge remain essential, as better-informed mothers are more likely to make confident and sustained breastfeeding decisions.

Breastfeeding attitudes assessed using the IIFAS were not significantly associated with EBF intention. However, the aforementioned mean IIFAS scores for both groups in this study were within the neutral category, suggesting that participants did not hold strong positive or negative attitudes towards breastfeeding. This contrasts with the findings of a cohort study conducted in Lebanon and Qatar by Naja, Chatila (37), which reported that knowledge, attitudes, and intentions were significantly associated with actual breastfeeding practices. The difference in findings may be due to variations in study

design, cultural influences, or the distinction between assessing intention during pregnancy versus actual breastfeeding behaviour postpartum. Consistently, Ibrahim, Alshahrani (6) reported a significant association between breastfeeding attitudes and the intention to practise exclusive breastfeeding among pregnant mothers. Their findings suggest that more positive attitudes correlate with stronger breastfeeding intentions. The variation in results could be due to differences in population characteristics, healthcare support, or breastfeeding promotion efforts. While attitudes may contribute to long-term breastfeeding success, they may not independently drive EBF intention during pregnancy. Future interventions should therefore extend beyond fostering positive attitudes to enhancing practical support, addressing breastfeeding challenges, and strengthening self-efficacy to improve breastfeeding outcomes.

Similarly, breastfeeding self-efficacy, as measured by the BSES-SF was not a significant predictor. While self-efficacy has been linked to breastfeeding initiation and duration in other studies, its lack of significance in our model may indicate that intention is shaped more by external influences rather than maternal confidence alone (32, 38, 39, 40). Future research could explore whether targeted interventions aimed at enhancing self-efficacy may have a greater impact on actual breastfeeding behaviours rather than intention alone.

Overall, these findings highlight the crucial role of social support, particularly from husbands and family members, in shaping maternal intentions to exclusively breastfeed. While knowledge, attitudes, and self-efficacy are often considered important determinants of breastfeeding behaviour, our results suggest that they may not independently drive EBF intention without sufficient social reinforcement. These insights have important implications for breastfeeding promotion strategies, emphasising the need for a holistic approach that incorporates family engagement alongside individual education and empowerment efforts.

Limitation

This study has several limitations that should be considered when interpreting the findings. First, its cross-sectional design prevents the establishment of causal relationships between the identified factors and EBF intention. Since data were collected at a single time point, the study does not capture changes in knowledge, attitudes, and self-efficacy that may evolve throughout pregnancy and postpartum. As mentioned earlier, the breastfeeding intention was assessed using a single, direct question, rather than a validated multi-item scale. As we believed this approach could help ease the administration and might have elicited more genuine responses. However, we acknowledged also

the limitation in capturing the multidimensional nature of intention. Future longitudinal studies with a validated multi-item scale could provide deeper insights into how these factors influence actual breastfeeding behaviour over time.

Second, the reliance on self-reported data introduces the risk of social desirability and recall bias. Participants may have overstated their intention to exclusively breastfeed due to societal expectations or personal aspirations, which may not necessarily translate into postnatal behaviour. To mitigate this, participants were assured of confidentiality to minimise response bias. Future research should incorporate follow-up assessments to validate self-reported intentions against actual breastfeeding practices.

Third, the sample size, particularly within certain subgroups, may have limited the statistical power to detect significant associations. The wide confidence intervals for educational attainment suggest variability that a larger, more diverse sample could clarify. While efforts were made to recruit participants from diverse backgrounds to improve generalisability within the Sarawakian context, future studies should expand recruitment across different populations and geographic regions to strengthen external validity.

Finally, this study assessed breastfeeding intention rather than actual behaviour. Although intention is a key predictor of behaviour, postnatal factors such as hospital practices, breastfeeding challenges, and access to lactation support also play critical roles. Future research should explore the transition from intention to practice to better inform interventions aimed at improving EBF rates.

Despite these limitations, the study provides valuable insights into the factors influencing EBF intention, particularly the pivotal role of husband and family support. These findings highlight the importance of social and familial support alongside maternal education and empowerment in breastfeeding promotion strategies. The study's use of binary logistic regression enhances analytical rigour by adjusting for potential confounders, offering a more precise understanding of EBF intention predictors. Additionally, the inclusion of validated tools ensures comparability with existing research, strengthening the study's contribution to the broader field of breastfeeding behaviour research.

CONCLUSION

The binary logistic regression analysis in this study identified husband and family support as significant predictors of exclusive breastfeeding (EBF) intention

among antenatal mothers. Mothers who received support from their husbands and families were significantly more likely to intend to practise EBF, underscoring the pivotal role of social support in shaping breastfeeding decisions. In contrast, breastfeeding knowledge, attitudes, and self-efficacy were not significant independent predictors of EBF intention after adjusting for other variables, suggesting that while these factors may influence breastfeeding behaviour, they alone are insufficient to determine antenatal intentions.

Future studies in Sarikei and Sarawak should employ longitudinal designs to assess whether these predictive factors translate into actual breastfeeding practices postpartum. Additionally, interventions should prioritise strengthening family and spousal involvement through education and support programmes tailored to the local cultural context. Addressing potential structural and social barriers within the community may further enhance breastfeeding initiation and continuation rates in the region.

ETHICAL CONSIDERATIONS

Ethical approval for the study was granted by UNIMAS (UNIMAS/TNC(PI)/09 – 65/01 Jld.4 (14)) and Medical Research and Ethics Committee Malaysia (NMRR ID 24-00537-9YJ (IIR)). The study adhered to the principles of the Declaration of Helsinki, ensuring the rights, safety, and well-being of all participants. Informed consent was obtained before data collection, and strict confidentiality measures were implemented to protect participants' personal information. All data were anonymised to maintain participant anonymity.

ACKNOWLEDGEMENTS

We sincerely appreciate Professor Emeritus Dr. Daniel W. Russell, Professor Dr. Cindy-Lee Dennis, Professor Dr. Zaleha binti Md Isa, Dr. Huzaimah binti Husin, and Associate Professor Dr. Tengku Alina Tengku Ismail for granting permission to use their validated tools in this study. Their contributions have been invaluable in ensuring the reliability and comparability of our findings.

REFERENCES

1. World Health Organization, United Nations Children's Fund (UNICEF). Indicators for assessing infant and young child feeding practices: Definitions and measurement methods . Geneva: World Health Organization and the United Nations Children's Fund (UNICEF); 2021. Available from: <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>

2. UNICEF, WHO. Global breastfeeding scorecard 2023. 2023, <https://www.unicef.org/documents/global-breastfeeding-scorecard-2023>
3. Institute for Public Health. National health and morbidity survey 2016 (NHMS2016): Maternal and child health 2016. <https://iku.moh.gov.my/images/IKU/Document/REPORT/2016/NHMS2016ReportVolumell-MaternalChildHealthFindingsv2.pdf> Available from: <https://iku.moh.gov.my/images/IKU/Document/REPORT/2016/NHMS2016ReportVolumell-MaternalChildHealthFindingsv2.pdf>.
4. Anderson CE, Yang F-C, Whaley SE. Prenatal Breastfeeding Intention Is Consistently Associated with Breastfeeding Duration Among WIC-Participating Women. *Nutrients*. 2024;16(24):4289. DOI: 10.3390/nu16244289.
5. Sartor L, Pyram-Vincent C, Lin HM, Ouyang Y, Wax DB, Beilin Y. Race and Intention to Breastfeed are the Strongest Predictors of Exclusive Breastfeeding: a Retrospective Study. *J Racial Ethn Health Disparities*. 2024;11(6):3704-13. DOI: 10.1007/s40615-023-01819-8.
6. Ibrahim HA, Alshahrani MA, Al-Thubaity DD, Sayed SH, Almedhesh SA, Elgzar WT. Associated Factors of Exclusive Breastfeeding Intention among Pregnant Women in Najran, Saudi Arabia. *Nutrients*. 2023;15(13). DOI: 10.3390/nu15133051.
7. Ballesta-Castillejos A, Gymez-Salgado J, Rodríguez-Almagro J, Ortiz-Esquinas I, Hernández-Martínez A. Factors that influence mothers' prenatal decision to breastfeed in Spain. *International Breastfeeding Journal*. 2020;15(1):97. DOI: 10.1186/s13006-020-00341-5.
8. Abbass-Dick J, Dennis CL. Breast-feeding Coparenting Framework: A New Framework to Improve Breast-feeding Duration and Exclusivity. *Fam Community Health*. 2017;40(1):28-31. DOI: 10.1097/fch.0000000000000137.
9. Abdul Hamid SB, Hc J, Cw B. Predictors of Breastfeeding Intention in Malaysia. *Environment-Behaviour Proceedings Journal*. 2017;2(5):161. DOI: 10.21834/e-bpj.v2i5.693.
10. Mohd Fahmi I. Factors influencing exclusive breastfeeding among mothers in Sarikei division, Sarawak: Universiti Malaysia Sarawak; 2018.
11. Department of Statistics Malaysia. Key findings population and housing census of Malaysia, 2020. In: Department of Statistics Malaysia, editor. 2022, <https://cloud.stats.gov.my/index.php/s/0xSFW5CKKLwwbJQ#pdfviewer>
12. Economic Planning Unit Sarawak. Sarawak facts and figures 2022: Department of the Premier of Sarawak; 2022.
13. Tengku Ismail TA, Sulaiman Z. Reliability and validity of a Malay-version questionnaire assessing knowledge of breastfeeding. *Malays J Med Sci*. 2010;17(3):32-9, <https://pmc.ncbi.nlm.nih.gov/articles/PMC3216168/>
14. Nurjasmine A, Hazwani H, Hanim AK, Azam KN. Validity and Reliability of the Malay IOWA Infant Feeding Attitude Scale (IIFAS-M) among mothers with infants in Malaysia. *Malaysian Family Physician*. 2021;16:31-.
15. Mora Adl, Russell DW, Dungy CI, Losch M, Dusdieker L. The Iowa Infant Feeding Attitude Scale: Analysis of reliability and validity. *Journal of Applied Social Psychology*. 1999;29(11):2362-80. DOI: <https://doi.org/10.1111/j.1559-1816.1999.tb00115.x>.
16. Husin H, Isa Z, Ariffin R, Rahman S, Ghazi H. The Malay version of ante-natal and postnatal breastfeeding self-efficacy scale-short form: reliability and validity assessment. *Malaysian Journal of Public Health Medicine*. 2017;17(2):62-9, https://www.researchgate.net/publication/318775289_The_Malay_version_of_antenatal_and_postnatal_breastfeeding_self-efficacy_scale-short_form_Reliability_and_validity_assessment
17. Dennis CL. The breastfeeding self-efficacy scale: Psychometric assessment of the short form. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*. 2003;32(6):734-44. DOI: <https://doi.org/10.1177/0884217503258459>.
18. Hosmer DW, Lemeshow S. *Applied Logistic Regression*. Second Edition ed: John Wiley & Sons, Inc.; 2000.
19. Ajzen I. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*. 1991;50(2):179-211. DOI: [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T).
20. Senghore T, Omotosho TA, Ceesay O, Williams DCH. Predictors of exclusive breastfeeding knowledge and intention to or practice of exclusive breastfeeding among antenatal and postnatal women receiving routine care: a cross-sectional study. *International Breastfeeding Journal*. 2018;13(1):9. DOI: 10.1186/s13006-018-0154-0.
21. Mattiello R, Kotoski A, Ayala CO, Recha CL, Quiroga CV, Machado CR, et al. Prevalence and factors associated with no intention to exclusively breastfeed for the first 6 months of life. *J Pediatr (Rio J)*. 2022;98(1):39-45. DOI: 10.1016/j.jped.2021.02.006.

22. Gutierrez-de-Terán-Moreno G, Ruiz-Litago F, Ariz U, Fernández-Atutxa A, Mulas-Martín M-J, Benito-Fernández E, et al. Successful breastfeeding among women with intention to breastfeed: From physiology to socio-cultural factors. *Early Human Development*. 2022;164:105518.DOI: <https://doi.org/10.1016/j.earlhumdev.2021.105518>.
23. Beggs B, Koshy L, Neiterman E. Women's Perceptions and Experiences of Breastfeeding: a scoping review of the literature. *BMC Public Health*. 2021;21(1):2169.DOI: 10.1186/s12889-021-12216-3.
24. Huang Y, Ouyang Y-Q, Redding SR. Previous breastfeeding experience and its influence on breastfeeding outcomes in subsequent births: A systematic review. *Women and Birth*. 2019;32(4):303-9.DOI: <https://doi.org/10.1016/j.wombi.2018.09.003>.
25. Earle S, Hadley R. Men's views and experiences of infant feeding: A qualitative systematic review. *Matern Child Nutr*. 2018;14(3):e12586.DOI: 10.1111/mcn.12586.
26. Brown A, Davies R. Fathers' experiences of supporting breastfeeding: challenges for breastfeeding promotion and education. *Matern Child Nutr*. 2014;10(4):510-26.DOI: 10.1111/mcn.12129.
27. Abbass-Dick J, Sun W, Newport A, Xie F, Micallef J, Dubrowski A. Maternal and co-parental experiences and satisfaction with a co-parenting breastfeeding eHealth intervention in Canada. *Journal of pediatric nursing*. 2023;72:135-45.DOI: 10.1016/j.pedn.2023.07.013.
28. Phua HW, Razak NAAA, Shukri NHM. Associations of father's breastfeeding attitude and support with the duration of exclusive breastfeeding among first-time mothers. *Malaysian Journal of Medicine & Health Sciences*. 2020;16(6), <https://api.semanticscholar.org/CorpusID:221209967>
29. Tokhi M, Comrie-Thomson L, Davis J, Portela A, Chersich M, Luchters S. Involving men to improve maternal and newborn health: A systematic review of the effectiveness of interventions. *PLoS One*. 2018;13(1):e0191620.DOI: 10.1371/journal.pone.0191620.
30. Martin SL, McCann JK, Gascoigne E, Allotey D, Fundira D, Dickin KL. Mixed-methods systematic review of behavioral interventions in low- and middle-income countries to increase family support for maternal, infant, and young child nutrition during the first 1000 days. *Curr Dev Nutr*. 2020;4(6):nzaa085.DOI: 10.1093/cdn/nzaa085.
31. Bloom BS, Engelhart MD, Furst EJ, Hill WH, Krathwohl DR. Taxonomy of educational objectives, handbook I1956.
32. Buss DIM. Knowledge, Attitudes and Behaviours Towards Exclusive Breastfeeding Amongst Mothers in Sarawak, Malaysia: A Qualitative Study. *IJUM Medical Journal Malaysia*. 2020;18(1).DOI: 10.31436/imjm.v18i1.222.
33. Shohaimi NM, Mazelan M, Ramanathan K, Meor Hazizi MS, Leong YN, Cheong XB, 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;17(1):e0262401.DOI: 10.1371/journal.pone.0262401.
34. Alnasser Y, Almasoud N, Aljohni D, Almisned R, Alsuwaine B, Alohal R, et al. Impact of attitude and knowledge on intention to breastfeed: Can mHealth based education influence decision to breastfeed exclusively? *Annals of Medicine and Surgery*. 2018;35:6-12.DOI: <https://doi.org/10.1016/j.amsu.2018.09.007>.
35. Ishak S, Adzan NAM, Quan LK, Shafie MH, Rani NA, Ramli KG. Knowledge and beliefs about breastfeeding are not determinants for successful breastfeeding. *Breastfeeding Medicine*. 2014;9(6):308-12.DOI: 10.1089/bfm.2013.0124.
36. Dennis C-L. Theoretical underpinnings of breastfeeding confidence: a self-efficacy framework. *Journal of human lactation*. 1999;15(3):195-201. DOI: 10.1177/089033449901500303.
37. Naja F, Chatila A, Ayoub JJ, Abbas N, Mahmoud A, Abdulmalik MA, et al. Prenatal breastfeeding knowledge, attitude and intention, and their associations with feeding practices during the first six months of life: a cohort study in Lebanon and Qatar. *International Breastfeeding Journal*. 2022;17(1):15.DOI: 10.1186/s13006-022-00456-x.
38. Phonyiam R, Teng CH, Cortés YI, Sullivan CS, Palmquist AEL, Hodges EA, et al. "Feeding the baby breast milk shouldn't be a problem" breastfeeding confidence and intention in pregnant persons with type 2 diabetes mellitus from Thailand. *PLOS Glob Public Health*. 2025;5(2):e0004205.DOI: 10.1371/journal.pgph.0004205.
39. Alkhalidi SM, Al-Kuran O, AlAdwan MM, Dabbah TA, Dalky HF, Badran E. Determinants of breastfeeding attitudes of mothers in Jordan: A cross-sectional study. *PLoS One*. 2023;18(5):e0285436. DOI: 10.1371/journal.pone.0285436.
40. Dennis CL. Breastfeeding self-efficacy 2010 [Available from: <http://www.cindyleedennis.ca/research/1-breastfeeding/breastfeeding-self-efficacy/>].