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# Household factors associated with breastfeeding practice among children in Southern Thailand

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**ABSTRACT**

Breastfeeding is an important process for infants including their nutrition, immune system support, digestibility, bonding, convenience, and cost-effectiveness. The breastfeeding rate in Thailand is low compared to Asian countries, but the rate is high for Southern Thailand. This study aimed to examine the household factors (religion) associated with breastfeeding practices in the household in Southern Thailand. This study used secondary data multiple indicators cluster survey (MICS) in 2022. The final sample of this study was 1,176 children under two years. The univariate, bivariate (Chi-square), and multivariate (binary logistic regression) were done using STATA version 17. The percentage of ever breastfed was high which was 97%. The factors of religion (AOR 3.45 95% (1.55–7.69)) and secondary school of education level of the household head (AOR 0.32 95% (0.15–0.67)) were found significantly associated with ever breastfeeding practice. There is a powerful role of religious leaders to empower women to breastfeed infants according to social and religious perspectives.



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## 1. INTRODUCTION

Breastfeeding is considered one of the healthiest and most natural ways to provide essential nutrition and nurture a baby during their early stages of life. Some important aspects of breastfeeding for infants include nutrition, immune system support, digestibility, bonding, convenience, and cost-effectiveness. According to united nations children's fund (UNICEF) and world health organization (WHO), exclusive breastfeeding (EBF) is one of international infant nutrition apart from early initiation of breastfeeding and continued for two years and is targeted to reach at least 70% in 2030 [1]. The findings from multiple indicators cluster survey (MICS) Thailand 2022 revealed that early initiation of breastfeeding in Thailand was only 29.4% with exclusive breastfeeding under six months only 28.6%, and only 18.7% continued breastfeeding until age two [2]. General determinants of exclusive breastfeeding studies have been done in many countries. In Haiti, exclusive breastfeeding was influenced by poverty and food insecurity [3]. Furthermore, it was also influenced by legal

and policy directives regarding social attitudes and values, for instance, the limited public space providing room for breastfeeding, culture, and systems [4].

In the context of Thailand, it was found the factors associated with breastfeeding include mother factors, family support, social and situational context, infant factors, healthcare, and mother-to-child transmission [5], [6]. For working mothers, the barrier is maternity leave which is limited to three months only but there is diversity of breastfeeding duration [7]. According to a study conducted on postpartum Thai women, breastfeeding behaviors were significantly influenced by maternal age, job status, parity, body mass index, the length of the newborn's stay in the Neonatal Intensive Care Unit, and the aim to exclusively breastfeed [8]. Apart from the impact of the household head's religion, there is also the influence of the grandmother figure according to religious interference, opposition to ideas about breastfeeding, and family decisions [7].

There are several studies discussed about religion and breastfeeding. It was found that Catholics have less tendency to initiate breastfeeding and tend to exclusive formula milk to the baby [9], [10]. Additionally, conservative Protestants had low odds of breastfeeding and shorter time [11]. For all religions, one study found mothers who attended religious services were more likely to breastfeed their babies [12]. The study of Buddhism and breastfeeding described Buddhists in Japan practicing breastfeeding as the best food for infants since the Edo Period [13]. This study focused on the Southern Region of Thailand. The reasons some health issues are concentrated in the Southern Region of Thailand, for instance, mothers with human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), and vitamin D insufficiency [14]. This study aimed to examine the household factors associated with ever breastfeeding among children aged 2 in the Southern Region of Thailand.

## 2. RESEARCH METHOD

### 2.1. Study design and setting

Cross-sectional secondary data were employed in this investigation. As part of the global MICS programme, the national statistical office of Thailand (NSO) and UNICEF conducted the Thailand MICS in 2022. MICS surveys track important indicators that help nations produce data for use in national development plans, policies, and programs as well as track advancement toward the sustainable development goals (SDGs) and other internationally endorsed commitments. Initial poll fieldwork for MICS Thailand 2022 was completed between June and October 2022. The first batch occurred between June 9 and June 17, 2022, and the second was between June 30 and July 8, 2022. The 14 provinces of Nakhon Si Thammarat, Krabi, Phangnga, Phuket, Surat Thani, Ranong, Chumpon, Songkhla, Satun, Trang, Phatthalung, Pattani, Yala, and Narathiwat make up the study's southern region of Thailand.

### 2.2. Sample/participants

From the sampled 34,540 households, a total of 32,709 were questioned (94.7% response rate). The 10,502 out of the 10,638 eligible children under five had their moms or caregivers interviewed (98.7% response rate). The main strata for sampling were determined to be the urban and rural areas by province, and the sample was chosen in two steps. A predetermined number of 2022 household basic information survey enumeration areas (EAs) were carefully chosen within each stratum at the first step using Probability proportional to size (PPS). Households with and without children under five years old were identified after a household listing was conducted within the chosen enumeration zones. In the second stage, a systematic sample of households was chosen from each category within the sample EA. At the national level, 34,540 homes and a total of 1,727 sample EAs were chosen. After the data cleaning process, the households that fully participated in this current study were 1,176 households.

### 2.3. Instrument

The questionnaires were modified and translated into Thai from the MICS6 model English version, and they were pre-tested in the province of Pathum Thani from April 5 to 7, 2022. The wording and translation of the questions were changed in response to the pre-outcomes tests. The dependent variable in this study was whether children ever breastfeed or not. The definition of this indicator is the percentage of most recent live-born children to women with a live birth in the last two years who were ever breastfed. Ever breastfed means the children who ever drink breastmilk without considering the duration. Other sociodemographic variables include age (0-5 months/more than six months), sex (male/female), place of residence (urban/rural), wealth index (poor/middle/rich), religion (Buddhist/Islam), and education level (primary or none/secondary/higher).

### 2.4. Data collection and data analysis

Computer-assisted personal interviewing (CAPI) is used in MICS surveys. A MICS-specific data management platform was included in the census and survey processing system (CSPro) software, on which the data collection application was built. The final surveys for the Thailand MICS 2022 program were adjusted to use the procedures and standard programs created under the worldwide MICS initiative. The fieldwork was place between

June 2022 and October 2022. The data of this study was tested using univariate, bivariate, and multivariate. Univariate analysis is used to explore the general characteristics of respondents that are presented in frequency and percentage. Bivariate analysis in this study used the Chi-square test to examine the correlation between each independent variable and breastfeeding practice. Multivariate analysis was done using binary logistic regression to examine all adjusted independent variables to breastfeeding practice. The 95% confidence interval was used as the cut-off of the significant level. All the tests were done using STATA version 17 for Windows.

### 2.5. Ethical consideration

All respondents were made aware of the information's confidentiality and anonymity and the voluntary nature of their involvement. Respondents were also made aware of their ability to refuse to answer any questions at all or in detail, as well as their right to end the interview at any moment.

## 3. RESULTS AND DISCUSSION

### 3.1. Results

Table 1 describes the general characteristics of respondents. It showed that the majority of children in this study were ever breastfeeding (97%). According to their age, most of them were in age six months to two years (83%). In terms of sex, the frequency between male and female were not diverse too much which showed 52% for male and 47% for female. More than half of the children in this study lived in rural areas (59%) and poor (38%). Between Buddhism and Islam, the gap was not diverse which was 49% and 51%, respectively. Moreover, according to the education level of household heads, more than half of them attended primary school or none (51%).

Table 1. The description of children under two years in Southern Thailand

| Variables (n=1,176) | Frequency | Percentage (%) |
|---|---|---|
| Ever breastfeed | | |
| No | 35 | 2.98 |
| Yes | 1,141 | 97.02 |
| Child age group | | |
| 0-5 months | 198 | 16.84 |
| Six months or more | 978 | 83.16 |
| Child sex | | |
| Male | 623 | 52.98 |
| Female | 553 | 47.02 |
| Place of residence | | |
| Urban | 487 | 41.41 |
| Rural | 689 | 58.59 |
| Wealth index | | |
| Poor | 450 | 38.27 |
| Middle | 333 | 28.32 |
| Rich | 393 | 33.42 |
| Religion | | |
| Buddhism | 581 | 49.40 |
| Islam | 595 | 50.60 |
| Education of household head | | |
| Primary or none | 605 | 51.45 |
| Secondary | 361 | 30.70 |
| Higher | 210 | 17.86 |

Table 2 shows the correlation between each independent variable and ever breastfeeding practice among children under two years in Southern Thailand. It was tested using the Chi-square test. According to the table, the variables that had a significant correlation to ever breastfeeding were religion and education of the household head (p-value 0.003 and 0.002, respectively). However, other variables including child age, child sex, place of residence, and wealth index did not correlate with ever breastfeeding practices.

Table 3 describes the correlation between all independent variables and ever breastfeeding practices among children under two years. According to the age group, compared to children aged 0–6 months which is the exclusive breastfeeding age, children aged 6–23 months were 2.26 times more likely to be breastfed after adjusting to all other independent variables (p-value 0.045). In terms of religion, compared to household heads who were Buddhist, household heads who were Islam were 3.45 times more likely to have breastfeeding practice in the household (p-value 0.002). According to the household head education level, compared to those who graduated from primary school or none, those who graduated from secondary school had a 68% decrease in the probability of having breastfeeding practice in the household (p-value 0.003). However, after adjusting

to other independent variables, some variables including child sex, place of residence, wealth index (middle and rich), and education of household head (higher) found no correlation to ever breastfeeding practices (p-value 0.722, 0.457, 0.995, 0.464, 0.730, respectively). The Pseudo R2 in this study shows 0.0802 which means that the model is 8.02% describing the variance of ever breastfeeding practice.

Table 2. The bivariate analysis of correlation between each independent variable and ever breastfeeding

| Variables (n=1,176) | Ever breastfeed | | Total | p-value |
|---|---|---|---|---|
| | No | Yes | | |
| Child age group | | | | 0.154 |
| 0-5 months | 9 (4.55%) | 189 (95.45%) | 198 (100%) | |
| Six months or more | 26 (2.66%) | 952 (97.34%) | 978 (100%) | |
| Child sex | | | | 0.616 |
| Male | 20 (3.21%) | 603 (96.79%) | 623 (100%) | |
| Female | 15 (2.71%) | 538 (97.29%) | 553 (100%) | |
| Place of residence | | | | 0.385 |
| Urban | 12 (2.46%) | 475 (97.54%) | 487 (100%) | |
| Rural | 23 (3.34%) | 666 (96.66%) | 689 (100%) | |
| Wealth index | | | | 0.915 |
| Poor | 13 (2.89%) | 437 (97.11) | 450 (100%) | |
| Middle | 11 (3.30%) | 322 (96.70%) | 333 (100%) | |
| Rich | 11 (2.80%) | 382 (97.20%) | 393 (100%) | |
| Religion of household head | | | | 0.003 |
| Buddhism | 26 (4.48%) | 555 (95.52%) | 581 (100%) | |
| Islam | 9 (1.51%) | 586 (98.49%) | 595 (100%) | |
| Education of household head | | | | 0.002 |
| Primary or none | 12 (1.98%) | 593 (98.02%) | 605 (100%) | |
| Secondary | 20 (5.54%) | 341 (94.46%) | 361 (100%) | |
| Higher | 3 (1.43%) | 207 (98.57%) | 210 (100%) | |

Table 3. The adjusted correlation between all independent variables and ever breastfeeding practice

| Variables (n=1,176) | Adj odd ratio | CI 95% (Lower–upper) | p-value |
|---|---|---|---|
| Child age group | | | |
| 0-5 months | Ref | | |
| Six months or more | 2.26 | 1.02 – 5.02 | 0.045 |
| Child sex | | | |
| Male | Ref | | |
| Female | 1.13 | 0.57 – 2.27 | 0.722 |
| Place of residence | | | |
| Urban | Ref | | |
| Rural | 0.76 | 0.37 – 1.57 | 0.457 |
| Wealth index | | | |
| Poor | Ref | | |
| Middle | 0.99 | 0.43 – 2.31 | 0.995 |
| Rich | 1.39 | 0.57 – 3.37 | 0.464 |
| Religion | | | |
| Buddhism | Ref | | |
| Islam | 3.45 | 1.55 – 7.69 | 0.002** |
| Education of household head | | | |
| Primary or none | Ref | | |
| Secondary | 0.32 | 0.15 – 0.67 | 0.003** |
| Higher | 1.27 | 0.33 – 4.84 | 0.730 |

Note: *p-value <0.05, **p-value<0.01, ***p-value <0.001

### 3.2. Discussion

Even though the percentage of continued breastfeeding for up to two years was low (18.7%), but in the Southern Region of Thailand it was much higher (97.02%). The national data of exclusive breastfeeding in Thailand revealed only 14% in 2019 which was below the Global Nutrition Target which is 50% by 2025. Recent data from UNICEF reported that one in three mothers in Thailand exclusively breastfed their babies. The policy concerns about EBF include maternity leave for parents, support subsidies for reducing the burden on the family, providing breastfeeding corners, and allowing mothers to express and store breastmilk during working hours [15]. The global data on breastfeeding at some point in babies' lives, revealed 95% of them ever receiving breastmilk. Differentiating between low-middle income countries and high-income countries showed contrast, which showed 4% and 21% of babies never receive breastmilk, (respectively) [16].

Compared to other ethnic groups, previous studies revealed the breastfeeding rates including Chinese mothers were 46%, Malay mothers 22%, and Indian mothers 41% [1]. It is not in line with the result of this

study which found a high rate of breastfeeding practices in the Southern Region of Thailand which is mostly Muslim. The high rate of breastfeeding in Southern Thailand was in line with a study in the united arab emirates (UEA) which revealed 98% of initiated breastfeeding with a mean duration was 8.6 months [2]. However, the study in Cameroon found a similar rate of breastfeeding, in which 18.1% of mothers practice exclusive breastfeeding but only 2.4% of them could practice until six months old of infants [17].

Previous studies found the factors influencing breastfeeding practice which is including duration of breastfeeding, education, and support to mothers [18]. Moreover, the study in Haiti found that poverty, food security, and employment were determined by breastfeeding practices in Urban settings [3]. The study in UAE found that factors associated with breastfeeding practices are the mother's age, education, parity, rooming in, nipple problem, and use of contraception [19]. Among working mothers, the positive attitude toward breastfeeding might be high as reported by the study in South Jordan, but they might end breastfeeding prematurely because of limited maternity leave [20]. Moreover, most previous studies found mother's education has a correlation with breastfeeding practices [21]. However, the household head's education was also correlated with breastfeeding practices in some countries [22]–[24].

To household head's religion who were Islam, as the majority of people in Southern Thailand are Muslim. Religious father support had a high impact on breastfeeding practice based on a study in Ethiopia [25]. In line with this study, the study in Malaysia found similar results in which religious and cultural influence has a comprehensive understanding of breastfeeding promotion and education programs [26]. Mothers are responsible for breastfeeding their infants as a symbol of godmothering [26]. In Malaysia, women are very concerned about Islamic rules that women have to breastfeed the baby [27]. Moreover, a study in Iran found that spirituality can influence the management of breastfeeding behavior [28]. Exclusive breasfeeding effectively prevents diarrhea among children under two years [29]. The exclusive breasfeeding practice can be more efficient if community support to avoid tabooed food [30].

The importance of breastfeeding showed highly among Muslims in Southern Thailand basically due to the belief. According to Islamic rules and the Qur'an, parents especially mothers are ordered to get God's blessing for their children and emphasize breast milk as having a valuable and unique role in improving the mental health, physical development, and desirable development of children [31]. The lower rate of exclusive breastfeeding might be higher for teenage mothers which shows only 27% of teenage mothers breastfeed their babies. The prevalence of breastfeeding in Thailand is the lowest compared to other Asian countries so there is a need for breastfeeding-friendly policies, especially in the factory [31]. Southern Thailand Province which is dominated by Muslims has a high prevalence of ever breastfeeding practices. Several studies in dominantly Muslim countries revealed various facts, such as Indonesia has 52.5% in 2021, Malaysia 40.3%, UAE 13.3%, and Jordan 11% [32]–[34]. The limitation of this study is the low percentage of non-breastfeeding practice which means the model has low variance.

## 4. CONCLUSION

The national breastfeeding rate for children up to two years in Thailand was low, but it was high in Southern Thailand. There is a role of household, especially household head religion. Religion leaders can establish programs to teach about health-related and Islam to heads of households. Further study can improve with qualitative study for understanding the role of households in breastfeeding practices.

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