
An Analytic Cross-Sectional Study on the Association Between Barriers and Enablers of Breastfeeding Practices Among Mothers in Metro Manila

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Abstract

Introduction In the Philippines, several health policies have been tailored to promote breastfeeding. Statistics show that despite efforts, breastfeeding prevalence remains low. This study aims to determine the demographics and associated barriers and enablers of breastfeeding among mothers living in Metro Manila.

Methods The study used a cross-sectional analytical design through an online self-administered questionnaire on barriers and enablers answered by mothers between 15-49 years old, residing in Metro Manila.

Results A total of 761 responses were included in the final analysis. Only age was found to be significantly associated with the practice of breastfeeding. Barriers identified were 1) seeing breastfeeding as time-consuming, 2) development of sore or tender nipples, 3) previously failed breastfeeding attempts, 4) poor latching on, and 5) not enough breastmilk production. Enablers identified were 1) seeing the practice as a good way to bond with the child, 2) presence of breastfeeding areas at work or school, 3) previous success in breastfeeding experience, 4) support from hospital staff or midwives, 5) having knowledge on whom to contact when challenged with breastfeeding, and 6) knowledge of the benefits of breastfeeding on infant and maternal health.

Conclusion Barriers and enablers towards breastfeeding may be target points for improvement of interventions aiming to increase prevalence of breastfeeding among mothers in Metro Manila.

Key words: Breastfeeding, barriers to breastfeeding, enablers to breastfeeding, breastfeeding practices

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The prevalence of poor breastfeeding practices is observed worldwide. Current surveys have shown that only 42% of infants aged 0 to 6 months are exclusively breastfed globally, which is far below the target of 90% coverage required to reduce infant mortality rates.¹ This lack is particularly noteworthy in developing countries. In the Philippines, 57% of children are breastfed within the first hour of life, and 93% are breastfed at some point in life, but there is a sharp decline in infant breastfeeding with age.² Currently, only 54.9% of Filipino infants from zero

to 5.9 months are exclusively breastfed, and only 29% of all Filipino infants are exclusively breastfed up to 5.9 months.³ This is a major concern, as it has a direct impact on child and maternal health in the Philippines.

All health professionals are familiar with the benefits provided by breastfeeding for both mothers and infants. Breast milk provides nutritive and protective effects against infections in infants, and it has been further postulated that these subsequently produce long term positive effects in adult life. This follows Dr. David Barker's concept of *fetal origins of adult disease*, more commonly known as the Barker's hypothesis, which emphasizes that early developmental events, including adverse nutrition, have profound impact on an individual's risk in developing future adult disease, particularly metabolic syndrome and its complications, such as coronary heart disease and stroke.⁴ Several studies then suggest that breastfeeding has protective roles against non-communicable diseases in adulthood as provided by its beneficial role in the nutrition of infants.⁵ As for mothers, breastfeeding also confers health benefits that include a reduction in the risk of breast and ovarian cancers.⁶ It is for these reasons that the World Health Organization recommends initiation of breastfeeding within the first hour of birth, to be done exclusively until the sixth month of age, and continued along with complementary food up to two years and beyond.⁷ In the Philippines, several health policies and laws have been tailored to promote breastfeeding among mothers nationwide. The Implementing Rules and Regulations of Republic Act 11148 or the "*Kalusugan at Nutrisyon ng Mag-Nanay Act*" were promulgated by the Department of Health in May 2019. The goal is to scale up efforts in promoting health and nutrition of infants in their first 1000 days of life, with local nutrition plans for newborns and overall child and maternity protection.⁸ However, since recent statistics show a low prevalence of breastfeeding Filipino mothers, efforts of the local and national government and several independent organizations to promote the practice of breastfeeding might still need further improvement.

This concern calls for more support from scientific data to determine maternal behaviors and situational factors that may have a significant influence on mothers' decision to breastfeed. If sufficient, modification of existing interventions or the development of new ones can then further target the root causes of poor maternal breastfeeding practices in

the Philippines. In its aim to contribute to the existing research about breastfeeding in the Philippines, the study aimed to determine the association of the identified barriers and enablers of breastfeeding and non-breastfeeding mothers on their practice or non-practice of breastfeeding. It also aimed to describe the demographics and prevalence of breastfeeding and non-breastfeeding mothers and determine its association to the practice of breastfeeding.

Methods

This study used a cross-sectional analytical design to determine the enablers and barriers to breastfeeding. Data was collected through an online questionnaire that was posted in different social media platforms. The independent variables were the enablers and barriers determined from the participants, while the dependent variable was the practice or non-practice of breastfeeding. The practice of breastfeeding was analyzed by getting the prevalence odds ratio and by using a chi-square test. The significance of associations of the variables were also determined. This research was approved by the University of the East Ramon Magsaysay Memorial Medical Center Ethics Review Committee.

The target population for this study consisted of mothers currently residing in Metro Manila. The participants were gathered using convenience and snowball sampling methods. Those included were mothers between 15-49 years old, which is based on WHO's specified range of reproductive age in women, and those who gave consent to participate in the study.⁹ Those excluded were mothers who were currently pregnant with their first child and those who did not give their consent.

The target sample size in this study was 455. The computation was based on a similar study from South Texas which showed that among the barriers identified, not being able to produce enough breast milk yielded the highest proportion (56% of the sample size).¹⁰ This proportion was used as the population proportion. Sample size computation was done using the formula that estimated the population proportion with 95% confidence interval, adjusted based on a 20% attrition rate.

Mothers who breastfeed (BF) are mothers who are currently breastfeeding and/or who have a history of breastfeeding, regardless of duration and presence of formula milk substitutes as supplementation. Mothers

who do not breastfeed (NBF) are mothers who are not currently breastfeeding and who have not breastfed in the past. A barrier is a perceived reason for a mother not to initiate, or to stop breastfeeding her child, or any perceived difficulty of a mother in the act of breastfeeding her child. An enabler is a perceived reason for a mother to initiate and/or continue breastfeeding her child, or to have considered breastfeeding despite not practicing it currently or in the past.

The instrument used was composed of three parts, with items adapted from a study on the barriers to breastfeeding by Thomas in 2016.¹⁰ It was translated to Filipino and certified by the *Komisyon sa Wikang Pilipino*, the official regulating body of the Filipino language. Both the English and Filipino versions were available per item on the online questionnaire to facilitate participant understanding. The first part of the instrument consisted of questions that asked about the participants' demographic characteristics, such as age, highest level of education, employment status, monthly income, marital status, parity, mode of delivery and location of delivery, and their breastfeeding practices. The socio-economic status stratification was based on the income strata done in the study by Thomas and correlated to Philippine currency figures.^{10,11} The second part of the instrument inquired on the barriers and enablers to breastfeeding, which were adapted from the same study done by Thomas and several others.^{10,12,13} Items were answerable by "yes," or "no," or "not applicable". The "not applicable" option was omitted on the final run for simplicity. An "others" option was provided for additional insights applicable to the mother that were not identified in the questionnaire. The collection of data was done through an online questionnaire posted on different social media platforms.

Data results were analyzed using the Statistical Package for the Social Sciences (SPSS Statistics) version 22. Descriptive statistics were calculated for variables in the demographic characteristics and breastfeeding practices. Subsequently, chi-square and prevalence odds ratio were used to analyze the presence and significance of association between enablers and barriers to breastfeeding and to the practice or non-practice of breastfeeding.

Results

Figure 1 shows that 937 mothers in Metro Manila joined in the study and answered the online questionnaire. Of

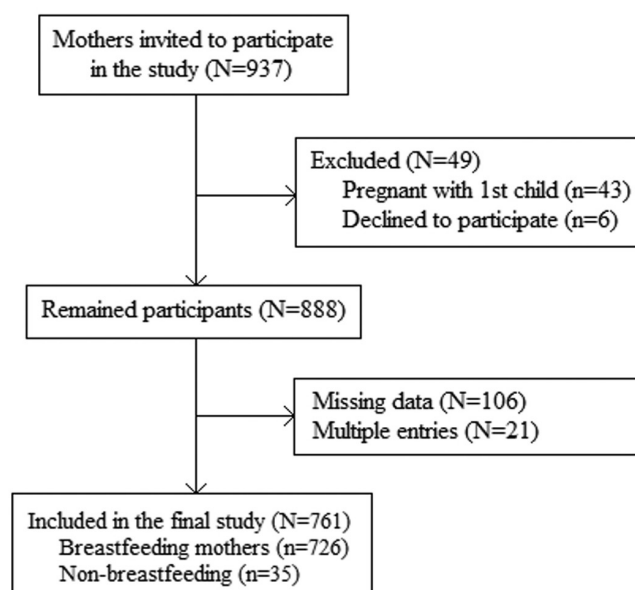


Figure 1. Flow diagram of study participants.

these, 49 were excluded in the study as 43 participants were currently pregnant with their first child while the other six had declined to participate. With the remaining 888 collected responses, there were 106 missing data and 21 repetitive entries. A total of 761 responses were included in the final analysis of the study.

The baseline characteristics of 761 mothers are shown in Table 1. The majority were 26 years and above and had college or postgraduate degrees. About half of the participants were employed during the time of the data collection, with the majority earning more than PhP19,000 per month. They were predominantly married and primiparous. Of those who were primiparous, more than 50% had delivered vaginally and most were attended in a hospital by a physician. A majority of multipara are delivered, regardless of birth order, vaginally in a hospital attended by a physician. A majority were currently breastfeeding or had breastfed. Of those who breastfed, most practiced breastfeeding for less than two years.

Table 2 shows that among the demographic characteristics described, only age was found to be significantly associated with the practice of breastfeeding: mothers were 3.21 times more likely to be 25 years and below. BF mothers were also 2.04

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Table 1. Demographic characteristics of mothers in Metro Manila (N = 761).

Characteristics	n (%)
Age (year)	
25 and below	171 (22)
26 and above	590 (78)
Education	
No education, elementary, high school	82 (11)
College or postgraduate	679 (89)
Employment status	
Employed	396 (52)
Unemployed	365 (48)
Monthly income (PhP)	
19,000 and below	404 (53)
More than 19,000	357 (47)
Marital status	
Single	281 (37)
Married	480 (63)
Parity	
Primipara	423 (56)
Multipara	338 (44)
Duration of breastfeeding (n = 726)	
Less than 2 years	537 (74)
More than 2 years	189 (26)

times more likely to have some schooling up to a high school level. However, the association was not significant ($p = 0.32$, 95% CI 0.48, 8.68). NBF mothers were 1.23 times more likely to be unemployed and 1.52 times more likely to earn more than PhP19,000 per month ($p = 0.54$, 95% CI 0.41, 1.61; $p = 0.24$, 95% CI 0.33, 1.32). They were also 1.2 times more likely to be multiparous ($p = 0.59$, 95% CI 0.41, 1.65). Employment status, monthly income, marital status, and parity were comparable between the breastfeeding mothers and non-breastfeeding mothers.

Table 3 shows the comparison between BF and NBF mothers' identified barriers to breastfeeding. Majority of the BF mothers considered the following as their barriers: stress brought by breastfeeding (55%), development of sore nipples (52%), and seeing breastfeeding as time consuming (50%). While the majority of the NBF mothers considered the following as their barriers: not enough breastmilk production (70%), poor latching on and return to work (tied at 49%), and stress from breastfeeding (43%). In the barriers that exhibited significant association, it was shown that BF mothers were 2.32 and 2.87 times more likely to consider development of sore and tender nipples and seeing breastfeeding as time consuming as barriers respectively ($p = 0.02$, 95% CI 1.12, 4.80;

Table 2. Association of demographics to the practice of breastfeeding.

Characteristics	BF (n = 726) n (%)	NBF (n = 35) n (%)	POR (95% CI)	p-value
Age (year)				
25 and below	168 (23)	3 (9)	3.21 (0.97, 10.62)	0.04
26 and above	558 (77)	32 (91)		
Education				
No education, elementary, high school	80 (11)	2 (6)	2.04 (0.48, 8.68)	0.32
College or postgraduate	646 (89)	33 (94)		
Employment status				
Employed	376 (52)	20 (57)	0.81 (0.41, 1.60)	0.54
Unemployed	350 (48)	15 (43)		
Monthly income (PHP)				
19,000 and below	382 (53)	22 (63)	0.66 (0.33, 1.32)	0.24
More than 19,000	344 (47)	13 (37)		
Marital Status				
Single	268 (37)	13 (37)	0.99 (0.49, 2.00)	0.98
Married	458 (63)	22 (63)		
Parity				
Primipara	402 (55)	21 (60)	0.83 (0.41, 1.65)	0.59
Multipara	324 (45)	14 (40)		

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$p = 0.005$, 95% CI 1.33, 6.22). NBF mothers were 5.26 times more likely to consider not enough breastmilk production and 3.86 times more likely to consider poor latching on ($p < 0.001$, 95% CI 0.09, 0.40; $p < 0.001$, 95% CI 0.12, 0.52). NBF mothers were also 2.86 times more likely to find failure in previous breastfeeding as a barrier ($p = 0.004$, 95% CI 0.17, 0.74). Other barriers not stated are statistically insignificant but

are still barriers to breastfeeding that should not be disregarded.

Table 4 shows the comparison between BF and NBF mothers on their enablers to breastfeeding. Majority of the BF mothers considered the following as their enablers: belief that breastfeeding is a good way to bond with a child (99%), knowledge on the benefits of breastfeeding to the child (97%), and

Table 3. Association of barriers to the practice of breastfeeding.

Barriers	BF (n = 726) n (%)	NBF (n = 35) n (%)	POR (95% CI)	p-value
Poor latching on	144 (20)	17 (49)	0.26 (0.12, 0.52)	< 0.001
Not enough breast milk	215 (30)	24 (70)	0.19 (0.09, 0.40)	< 0.001
Failure of previous breastfeeding	101 (14)	11 (31)	0.35 (0.17, 0.74)	0.004
Time consuming	362 (50)	9 (26)	2.87 (1.33, 6.22)	0.005
Painful nipples	374 (52)	11 (31)	2.32 (1.12, 4.80)	0.020
Concern that baby will not receive adequate nutrition	176 (24)	13 (37)	0.54 (0.27, 1.10)	0.080
Multiple children	188 (26)	5 (14)	2.10 (0.80, 5.48)	0.120
Exposure to formula milk advertisements	169 (23)	12 (34)	0.58 (0.28, 1.19)	0.140
Stressful	399 (55)	15 (43)	1.63 (0.82, 3.23)	0.160
Belief that breastfeeding makes babies smaller	125 (17)	3 (9)	2.22 (0.67, 7.36)	0.180
Maternal medications harmful to the baby	213 (29)	7 (20)	1.66 (0.71, 3.86)	0.230
Multiple household chores	356 (49)	14 (40)	1.44 (0.72, 2.88)	0.300
No one to contact for help	177 (24)	11 (31)	0.70 (0.34, 1.47)	0.340
Certain food that the mother eats will make the baby sick	194 (27)	7 (20)	1.46 (0.62, 3.39)	0.380
Lack of support from family	144 (20)	9 (26)	0.71 (0.33, 1.56)	0.400
Not informed that breastfeeding helps reduce maternal fractures and certain cancers	128 (18)	8 (23)	0.72 (0.32, 1.63)	0.430
Not informed that breastfeeding helps reduce postpartum complications	136 (19)	8 (23)	0.78 (0.35, 1.75)	0.540
Mother has previous/current medical condition	87 (12)	5 (14)	0.82 (0.31, 2.16)	0.680
Lack of support from hospital staff or midwife	94 (13)	4 (11)	1.15 (0.40, 3.34)	0.790
Not informed by health workers about the benefits of breastfeeding	114 (16)	6 (17)	0.90 (0.37, 2.22)	0.820
Returned to work	340 (47)	17 (49)	0.93 (0.47, 1.83)	0.840
Not informed about the benefits of breastfeeding to babies	95 (13)	5 (14)	0.90 (0.34, 2.39)	0.840
No access to free government services for breastfeeding mothers	279 (28)	13 (37)	1.06 (0.52, 2.13)	0.880
Embarrassment	18 (2)	1 (3)	0.86 (0.12, 6.67)	0.890

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support from partner and family members (93%). While majority of the NBF mothers considered the following as their enablers: belief that breastfeeding is a good way to bond with the child (93%), that healthy food eaten by the mother affects the baby (91%), knowledge on the benefits of breastfeeding to the child and that it helps reduce postpartum complications both tied in third place (tied at 89%). Mothers who breastfed were 8.74 times more likely to consider breastfeeding as a good way to bond with their child than their NBF counterparts ($p < 0.001$, 95% CI 1.6, 46.73). They were 4.07 times more likely to believe that breastfed babies achieve and consistently maintain their normal weight better than formula fed infants ($p < 0.001$, 95% CI 1.87, 8.84). They were also 2.26 times more

likely to consider the presence of breastfeeding areas in workplaces and in schools ($p = 0.02$, 95% CI 1.14, 4.49). Mothers who breastfed were 2.74 times more likely to consider previous success of breastfeeding experience than NBF mothers ($p = 0.003$, 95% CI 1.36, 5.53). Mothers who breastfed who had support from hospital staff or midwives were also 2.66 times more likely to see it as an enabler ($p = 0.006$, 95% CI 1.29, 5.50).

Moreover, BF mothers who had support from their partner or family were 4.40 times more likely to consider support ($p = 0.006$, 95% CI 1.29, 5.50), and 2.58 times more likely to consider knowledge on whom to contact when challenged with breastfeeding as an enabler ($p = 0.008$, 95% CI 1.25, 5.33). They were also

Table 4. Association of enablers to the practice of breastfeeding.

Enablers	BF (n = 726) n (%)	NBF (n = 35) n (%)	POR (95% CI)	p-value
Belief that breastfeeding helps babies achieve normal weight	661 (81)	25 (71)	4.07 (1.87, 8.84)	< 0.001
Support from family	673 (93)	26 (74)	4.40 (1.96, 9.86)	< 0.001
Good way to bond with child	721 (99)	33 (94)	8.74 (1.63, 46.73)	0.002
Success of previous breastfeeding	449 (62)	13 (37)	2.74 (1.36, 5.53)	0.003
Support from hospital staff or midwife	607 (84)	23 (66)	2.66 (1.29, 5.50)	0.006
Knowledge about the benefits of breastfeeding to babies	704 (97)	31 (89)	4.13 (1.34, 12.71)	0.008
Knows who to contact for help	604 (83)	23 (66)	2.58 (1.25, 5.33)	0.008
Presence of breastfeeding areas in at work/school	529 (73)	19 (54)	2.26 (1.14, 4.49)	0.020
Knowledge that breastfeeding helps reduce postpartum complications	672 (93)	29 (83)	2.57 (1.02, 6.47)	0.040
Relieves stress	559 (77)	22 (63)	1.98 (0.98, 4.01)	0.054
Informed by health workers about the benefits of breastfeeding	639 (88)	28 (80)	1.84 (0.78, 4.33)	0.160
Mother has minimal household chores	397 (55)	15 (43)	1.61 (0.81, 3.19)	0.170
Knowledge that breastfeeding helps reduce maternal fractures and certain cancers	672 (93)	31 (89)	1.61 (0.55, 4.71)	0.380
Concern that baby will not receive adequate nutrition if formula-fed	559 (77)	25 (71)	1.34 (0.63, 2.84)	0.450
Availability of maternal leave pay from work	405 (56)	18 (51)	1.19 (0.60, 2.35)	0.610
Access to free government services for breastfeeding mothers	422 (58)	19 (54)	1.17 (0.59, 2.31)	0.650
Healthy food eaten by the mother affects the baby	660 (91)	32 (91)	0.94 (0.28, 3.14)	0.920

4.13 times more likely to consider that knowledge on the benefits of exclusive breastfeeding in lowering the chances of the infant developing infections, allergies, and metabolic disorders than NBF mothers do ($p = 0.008$, 95% CI 1.34, 12.71). Lastly, BF mothers were 2.57 times more likely to consider that having the knowledge that breastfeeding lowers the chances of developing postpartum complications as an enabler ($p = 0.040$, 95% CI 1.02, 6.47). Other enablers not stated are statistically insignificant but are still factors worth considering as enablers of breastfeeding.

Discussion

This research aimed to determine the association of each barrier and enabler to the mothers' breastfeeding practices. The only participant demographic that was found to be significantly associated with the practice of breastfeeding was age. For the reported barriers, seeing breastfeeding as time-consuming and painful nipples are significant to BF mothers, while experience of a failed breastfeeding attempt, poor latching on, and not enough breastmilk production are significant to NBF mothers. Conversely, enablers showed significant associations in BF mothers: breastfeeding as a good way to bond with the child, presence of breastfeeding areas at work or school, previous success of breastfeeding experience, and support from hospital staff or midwives. Other significant enablers in BF mothers include having knowledge on whom to contact when challenged with breastfeeding, and knowledge of the benefits of breastfeeding on infant and maternal health.

The finding of age as the only significant predictor of breastfeeding practices, supported the result in another study which showed that with increasing age, there was a decreasing incidence of breastfeeding.¹⁴ However, this differed from the results of two other studies from abroad, which showed that younger mothers between 20-29 years old were less likely to breastfeed than mothers 30 years or older. Their findings suggested that older women had acquired confidence from having previously successful breastfeeding experiences.^{15,16} The disparity between these two studies abroad and in the present study can be due to most Filipino mothers being relatively younger at 20-24 years old compared to their US counterparts, where most are between 30-34 years old. This led to more Filipino mothers 25 years and below who were breastfeeding.^{17,18} It is important to

keep in mind that despite the results of a significant association between age and breastfeeding, the wide range of its confidence interval casts doubt on the association and may explain the discordance of this study in comparison to other references. Further study may be necessary to verify the conflicting results.

In congruence with the findings of several other studies, this study also found that success in previous breastfeeding had a significant relationship with the practice of breastfeeding.^{12,15,16,19,20} This showed that BF mothers were actively using their previous breastfeeding experience as the basis for their breastfeeding plans. They depended more on their attitudes and skills when making feeding decisions for their children. Consequently, failure of previous breastfeeding was identified as a barrier to breastfeeding by non-breastfeeding mothers. Mothers who had lactation problems, self-centered motivations, or had problems with their breastfeeding infants, stopped breastfeeding their first child. This subsequently made them lose motivation in breastfeeding their later-born children. The current study also found inadequate breast milk production was a significant barrier to NBF mothers. Studies in the United States and Mexico supported this finding and mentioned that insufficient quantities of breastmilk may be due to infrequent feeding or poor breastfeeding techniques.^{21,22} However, some mothers may also have had a false perception of insufficient milk supply due to lack of confidence and poor understanding of the normal physiology of lactation, when in fact there was enough milk quantity to nurture their babies. This perception of insufficient breast milk in NBF mothers significantly affected the future decisions of the mothers about breastfeeding.

Among the identified enablers, BF mothers primarily engage in breastfeeding as a good way to bond with their children. This was consistent with research showing increased mother-infant emotional bonding from lower maternal stress due to the release of oxytocin during breastfeeding. Aside from its immediate emotional support, breastfed children also displayed lower risks of developing psychopathology and internalizing behavior problems in the future. This was because a good mother-infant bond promoted healthy cognitive maturation in infants.²³⁻²⁵ Breastfeeding was also considered to be cost-effective.^{24,26} This supports the study participants, who cited cost-effectiveness as one of the enablers to breastfeeding in the "others" option. Both breastfeeding and non-breastfeeding mothers provided

this reason for their consideration to breastfeed. Thus, it may be a good factor to emphasize when engaging mothers to breastfeed, especially in the Philippine context.

External support from hospital staff, midwives, partners, or family members were found to be a significant enabler to BF mothers. Support, whether coming from the mother's colleagues, the healthcare team, or from the mother's family, can positively influence the initiation and continuation of breastfeeding.^{16,27-30} Family support was provided mainly through emotional support, provision of additional childcare, and help as to acquisition of information about breastfeeding.²⁷ Family members who previously had successful breastfeeding experience may also act as role models. Healthcare support primarily came from continuous educational support about the proper techniques for breastfeeding. This is crucial since this current study found that painful nipples and poor latching on were significant barriers to both BF and NBF mothers, respectively, and that some studies have shown these to be mostly due to improper technique brought about by lack of education during breastfeeding initiation. These findings highlight the importance of early counseling on proper breastfeeding techniques and correct breastfeeding information as early as the postpartum period.^{22,31} This would support the importance of knowing who to contact about concerns on breastfeeding, which was found to be a significant enabler in BF mothers. Additional enablers for BF mothers include a knowledge on breastfeeding benefits in lowering the infant's risk for developing infections, allergies, and metabolic disorders; and on lowering maternal risk for developing postpartum bleeding, depression, and obesity-related illness. Lactational amenorrhea is a known benefit from breastfeeding that was neither specified nor elicited in the study.⁴ However, because of its immense impact on maternal health and family planning, it should also be emphasized on the education that healthcare teams provide for breastfeeding mothers.

Another particular benefit of breastfeeding as an enabler was the BF mother's belief that breastfed babies achieved and consistently maintained normal weight better than formula fed infants. This belief proved to be true according to one study on growth patterns of breastfed and formula-fed infants in the first 12 months of life. Breastfed infants had the highest z-scores at birth and had significantly higher growth

indices from the first three months of age compared to their formula-fed counterparts.³¹ This is contrary to the Centers for Disease Control and Prevention memorandum stating healthy breastfed infants gained weight slower than formula-fed infants in the first year of life.³² This discrepancy may be due to the varying growth patterns between breastfed and non-breastfed infants. Breastfed infants showed significant weight gain in the first three months of life while formula-fed infants started to show significant weight gain from the fourth up to the 12th month. There were also growth variations among local populations secondary to wide differences among environments, irrespective of infant feeding strategy. Regardless, most mothers believed that breastfeeding, as opposed to formula feeding, helped their child to achieve and maintain normal weight.³³

A significant barrier of BF mothers that had a high number of responses was the notion that breastfeeding was "time-consuming". This could be a direct result of mothers being employed or in school during the time that they were breastfeeding. The Philippine government has enacted laws to mitigate this impact on lactating working mothers. RA 10028 mandated lactation breaks and lactation rooms for women both in government and in the private sector.^{8,34,35} This is primarily beneficial to employers because it resulted in increased productivity of lactating mothers during working hours. There were fewer absences as breastfed babies were less likely to be ill.³⁶⁻³⁸ Overall, an optimal breastfeeding practice can be attributed to a gross reduction of healthcare costs and employee turnover.^{12,39,40} These studies have shown that access to breastfeeding areas in the workplace benefited lactating mothers as well, as it reinforced commitment and satisfaction in their work. This can subsequently reduce stress and help mothers spend more time with their child. The current study was also reflective of this finding, wherein the presence of breastfeeding facilities in workplaces and in other institutions was also found to be a significant enabler for BF mothers. Since time consumption still showed to be a significant barrier to breastfeeding, there might still be a need for further improvement in the implementation and availability of lactation services in the workplace.⁸

As age was the only significant factor between breastfeeding and non-breastfeeding mothers in Metro Manila, baseline characteristics are still considered comparable. The study also exceeded its target sample

size, from 455 to 761 participants, which may provide another reason for its generalizability. However, because of the geographic limitations, breastfeeding practices cannot be generalized to Filipino mothers outside Metro Manila, particularly those in far-flung, rural areas. Online recruitment of participants and their corresponding data can limit the significance of the results. In particular, the accessibility to an internet connection and online literacy needed to accomplish the questionnaires might have skewed the study towards a higher socioeconomic level and computer-literate mothers. As opposed to a face-to-face interview, most online participants had no interactive feedback from the researchers and relied on their personal understanding of the questions. Multiple factors such as age, socio-economic status, and the utilization of snowball sampling technique, also factor into the demographics. Multiparas' recall bias in previous breastfeeding practices could have also been a limitation.

Although this research was able to elicit factors affecting breastfeeding practices and found associations of these factors to breastfeeding practices of mothers, a great majority of these data came from the breastfeeding group. Further research that targets non-breastfeeding mothers, especially those who belong to the lower socioeconomic class, may be of great value in the Philippine setting considering the irony of having low rates of breastfeeding in the country despite poor economic conditions. This recommendation stems from one of the breastfeeding enablers obtained in this study that showed mothers who breastfeed choose and continue to do so because of its economic benefit.

Age was the only participant demographic that was significantly associated with the practice of breastfeeding between BF and NBF mothers. Significant barriers in either BF or NBF mothers were all personal factors. Barriers that were personal factors among BF mothers include breastfeeding as time-consuming and the development of painful nipples. In NBF mothers, barriers that were personal factors include previously failed breastfeeding attempts, poor latching on, and not enough breastmilk production. (Table 5) Significant enablers in BF mothers were a combination of personal and external factors. The two personal factors were breastfeeding as a good way to bond with the child and previous success in breastfeeding experience. Enablers were predominantly external factors: presence of breastfeeding areas at work or school, support from hospital staff or

Table 5. Other barriers to breastfeeding by breastfeeding mothers.

Barrier	Frequency
Baby concerns (medical condition, crying, clingy, hungry etc.)	8
Nipple problems (inverted, retracted, confusion, etc.)	16
Mother concerns (inconvenience, laziness, cosmetic concerns, pregnant)	11
Other complications from breastfeeding (dehydration, engorged breast etc.)	5
Lack of breastfeeding apparatus or facilities in public places other than school/workplace	8

Table 6. Other enablers to breastfeeding by breastfeeding mothers.

Enabler	Frequency
Support Groups/ Self-Motivation	74
Community-friendly	79
Availability, Accessibility and Convenience	25
Baby Benefits/ Needs	10
Knowledge/ Beliefs about breastfeeding vs formula feeding	11

midwives, knowledge on whom to contact when challenged with breastfeeding, and knowledge of the benefits of breastfeeding on infant and maternal health. (Table 6) These barriers and enablers have significant associations towards breastfeeding practices and may serve as target points for improving interventions aimed at expanding breastfeeding in the Philippines.

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Conflict of Interest Declaration

The authors declare that the research was carried out without any conflict of interest.

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