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ORIGINAL ARTICLE

Comparing Breastfeeding Outcomes in Mothers Conceiving via Assisted Reproduction versus Spontaneous Conception: A Retrospective Cohort Study

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ABSTRAK

Bukti daripada kajian terdahulu mengenai hasil penyusuan dalam kalangan ibu yang menjalani reproduksi dibantu (ARM) berbanding dengan ibu yang hamil spontan (SCM) adalah tidak konsisten. Kajian ini bertujuan untuk membandingkan amalan penyusuan antara ibu yang menjalani 'in vitro fertilisation' (IVF) dengan ibu yang hamil secara spontan (SCM). Kajian kohort retrospektif ini dijalankan ke atas ibu yang melahirkan selepas 36 minggu kehamilan di pusat obstetrik dari tahun 2010 hingga 2019. Kedua-dua kumpulan ini dipadankan mengikut pariti ibu, umur, kaedah kelahiran dan tempoh kehamilan. Maklumat mengenai faktor sosio-demografi, data kesihatan reproduktif, hasil kelahiran dan amalan penyusuan dikumpulkan melalui temubual telefon. Analisis regresi logistik mudah dan berbilang telah digunakan. Daripada 110 ARM yang layak, 82 (75%) dapat dihubungi dan bersetuju untuk menyertai kajian. Kumpulan ini dipadankan dengan 82 SCM. Berbanding dengan SCM, ARM mempunyai kadar EBF yang sedikit tinggi (47.5% berbanding 46.3%) dan peratusan penyusuan ≥12 bulan yang lebih tinggi (62% berbanding 55%), walaupun perbezaan ini tidak signifikan secara statistik. Regresi logistik berbilang menunjukkan penyakit antenatal dan berat lahir bayi mempunyai kaitan yang signifikan dengan EBF. Kesimpulannya, kaedah konsepsi tidak mempunyai kaitan yang signifikan dengan amalan penyusuan. Ibu yang menjalani IVF boleh diyakinkan bahawa mereka mempunyai peluang kejayaan penyusuan yang serupa berbanding dengan ibu yang hamil secara spontan.

Kata kunci: *Kemandulan; penyusuan ibu; persenyawaan in vitro; teknik reproduktif*

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ABSTRACT

Previous evidence on the outcomes of breastfeeding among assisted reproduction mothers (ARM) compared to spontaneous conception mothers (SCM) were inconsistent. This study aimed to compare breastfeeding practices between mothers who had in vitro fertilisation (IVF) as compared with SCM. This retrospective cohort study was conducted among mothers who delivered beyond 36 weeks gestation at an obstetric centre from 2010 to 2019. ARM and SCM groups were set to match in terms of maternal parity, age, delivery method and pregnancy period. Information on socio-demographic factors, reproductive health, birth outcomes and breastfeeding practices was collected through telephone interviews. Simple and multiple logistic regression analyses were applied. Out of 110 eligible ARM, 82 (75%) were contactable and agreed to participate. The group was matched with 82 SCM. Compared to SCM, ARM had a slightly higher rate of exclusive breastfeeding (EBF) (47.5% versus 46.3%), and a higher percentage of breastfeeding ≥12 months (62% versus 55%), although these differences were not statistically significant. Multivariate logistic regression showed antenatal illness and babies' birth weight were significantly associated with EBF. In conclusion, conception mode had no significant association with breastfeeding practices. Mothers undergoing IVF may be assured of similar breastfeeding success chances compared to mothers who conceived spontaneously.

Keywords: Breastfeeding; fertilisation in vitro; infertility; reproductive techniques

INTRODUCTION

Breastfeeding is recognised as the optimal way to provide essential nutrients to an infant, foster a strong bond between the mother and newborn, as well as confer many other benefits to the mother and child (Camacho-Morales et al. 2021). Therefore, exclusive breastfeeding (EBF) for the first six months of the newborn's life with subsequent continued breastfeeding plus complementary food, until the age of two years is recommended by the World Health Organisation (WHO) (WHO 2018). However, these breastfeeding practices were received by less than 50% of infants in the lower and middle income countries (LMICs) (North et al. 2021). Therefore, thorough research on all possible factors that influence breastfeeding practices in all groups is important to improve this rate, including less researched factors such as in mothers who conceived through assisted reproduction.

Infertility has increased in prevalence during recent years and has been recognised as a public health issue worldwide by the WHO. It is experienced by 48.5 million couples worldwide (Adamson et al. 2013). As becoming a parent is one of the most universally desired aims for couples, many fertility treatments have been introduced, ranging from simple interventions, from medications for ovulation, to assisted reproductive treatments (ART). In vitro fertilisation (IVF) is the most commonly utilised assisted reproductive technology which now represents 1.5 to 5.9 % of all births (Calhaz-Jorge et al. 2017). This issue is highly relevant in Malaysia, one of the 39 nations in the Asia Pacific region shown to have a significant increase in infertility trend in the Asia-Pacific region from 1990 to 2021 (Luo et al. 2024).

IVF utilisation presents challenges to mothers with IVF pregnancies as they are at risk of pre-eclampsia, gestational diabetes, placenta previa, caesarean section, low birth

weight and perinatal mortality (Tarlatzis & Grimbiziz 2009). Some studies have reported that women who conceived via IVF also had problems with breastfeeding (Barnes et al. 2013). A research by Hammarberg et al. (2011) showed that mothers who give birth to IVF-conceived infants tend to produce less breast milk. Additionally, women with infertility often encounter specific anxieties and stresses that can negatively affect their breastfeeding experience (Evans et al. 2014).

However, previous studies also highlighted that women utilising IVF are more likely to be more educated, within the higher income group, married and older, resulting in an increased likelihood of breastfeeding (Barnes et al. 2013). An Australian cohort study found that women who conceived through assisted methods were more likely to start breastfeeding compared to the general population. However, they had higher rates of early discontinuation, and by three months postpartum, significantly fewer were exclusively breastfeeding (46% compared to 57%) (Hammarberg et al. 2011).

Research exploring the relationship between various fertility treatments, including IVF, and breastfeeding outcomes were mainly conducted in developed countries. However, findings from these studies have been inconsistent, with some indicating challenges in breastfeeding initiation and duration, while others show little to no impact of fertility treatments on breastfeeding success (McDonald et al. 2012). This inconsistency highlights the complexity of factors influencing breastfeeding outcomes in assisted reproduction cases. Additionally, there is a scarcity of studies assessing this relationship in developing countries, where differing healthcare access, cultural factors, and support systems may influence both fertility treatment outcomes and breastfeeding practices, creating a significant gap in understanding global patterns and challenges. Thus, research in diverse contexts is essential to gain comprehensive insights into breastfeeding experiences among assisted reproduction mothers. Therefore, we conducted a retrospective study to compare mothers who conceived through assisted reproduction (ARM), specifically IVF, with mothers who had spontaneous conception (SCM) in terms of (i) EBF; (ii) initiation of breastfeeding; and (iii) duration of breastfeeding. The findings from this research could help to tailor support services for mothers who have undergone assisted reproductive technologies (ART) like IVF and are keen on breastfeeding.

MATERIALS AND METHODS

This retrospective cohort study was conducted among two groups of patients (ARM and SCM) who delivered from 1st January 2010 until 31st December 2019 at the Hospital Sultanah Nur Zahirah (HSNZ), Kuala Terengganu, Malaysia. All mothers whose pregnancy were assisted via IVF at the Reproductive Unit of the hospital and delivered during that time frame were included into the ARM group. The SCM comprised comparable women who achieved spontaneous conception following a period of infertility and delivered at the same hospital within the same time frame. Simple random sampling was applied to select eligible SCM from the same time frame. Sample size was calculated for all objectives. The largest sample size was obtained from the objective of comparing EBF rate using PS software by comparing two proportions using the following values: significance level (α) = 0.05, power (1 - β) = 0.8, EBF rate in SCM = 0.58 and EBF rate in ARM = 0.42 (Sáez et al. 2022). The sample size yielded 110 samples per group.

Data was obtained from the reproductive unit database and delivery census. The inclusion

criteria were (i) spontaneous conception; (ii) childbirth at HSNZ; (iii) gestational age more than 36 weeks; (iv) delivery of a healthy singleton; (v) able to understand Malay or English; and (vi) consented to participate in the study. The exclusion criteria for both groups were any contraindications to breastfeeding, any infants who were born with breastfeeding difficulty such as facial cleft, and multiple pregnancy.

Data were further obtained via telephone interviews that took approximately 5-10 minutes, at 12 months postpartum to gather all related information. The sociodemographic characteristics, reproductive health, birth and breastfeeding practices were assessed by study-specific questions to evaluate the main outcomes, which were initiation, exclusivity and continuation of breastfeeding.

Research Tool

The questionnaire consisted of two parts. The first part contained the demographic and background information of the participants. The second part of the questionnaire consisted of details of breastfeeding practices among participants. Infant feeding was categorised into three groups i.e. EBF, formula feeding and mixed feeding. EBF was defined as exclusive breast milk provision to the infant, with no formula milk, for at least six months. Mixed feeding referred to receiving both breast milk and formula milk. Information about breastfeeding duration was gathered through telephone interviews conducted by a trained interviewer. Questions about feeding practices at home; classified into EBF, formula feeding or mixed feeding, and the duration were asked during the interview. The definition of weaning was stopping breastfeeding with no plan to resume. Feeding with expressed breast milk was also included as breastfeeding.

Statistical Analysis

Data were analysed using SPSS ver. 26.0 (IBM Corp, Armonk, New York). The initiation, exclusivity and continuation of breastfeeding were described using percentages while comparisons of the proportions were made using Chi-square and Fisher's Exact tests. Multiple logistic regression was applied to compare exclusivity of breastfeeding between the ARM and SCM groups. The measure of risk was described using Odds Ratio and its 95% confidence interval.

RESULTS

Out of 110 eligible women who had IVF pregnancies at our centre, 82 (75%) consented to participate in the study. This was matched with 82 mothers who conceived spontaneously, making a total of 164 subjects. Their demographics were summarised in Table 1. ARM were comparable to the SCM in terms of age, ethnicity, health condition, work status, mode of delivery and gender of the babies. Comparisons of sociodemographic and obstetric variables indicated that there were no statistically significant difference between the two groups. The majority of respondents were healthy Malay women. All of them had good partner support for breastfeeding. None of them had any breastfeeding experience before. The majority of mothers in both groups completed their confinement period/leave and returned to work after the leave (Table 1).

The present study found that ARM did not differ in breastfeeding initiation compared to SCM. All mothers in both groups initiated breastfeeding within one week of childbirth (Table 2).

In the ARM group, duration of breastfeeding of less than six months was observed in 27%, 6-12 months in 11%, and 12-36 months in

TABLE 1: Comparisons of the subjects' characteristics by mode of conception

Characteristics	IVFC, n (%), n= 82	SC, n (%), n=82	p-value
Age (years)			
less 30	16 (20)	16 (20)	0.941
31-35	31 (38)	29 (35)	
More 36	35 (42)	37 (45)	
Ethnicities			
Malay	81 (99)	81 (99)	-
Chinese	1 (1)	1 (1)	
Education level			
Primary	26 (32)	33 (40)	0.329
Secondary and above	56 (68)	49 (60)	
BMI (kg/m^2)			
Less 18.5	5 (6)	3 (4)	
18.5-24.9	41 (50)	25 (30)	0.240
25-29.9	26 (32)	26 (32)	
More 30	10 (12d)	28 (34)	
Work status			
Employed	63 (77)	64 (78)	0.852
Unemployed	19 (23)	18 (22)	
Parity			
Parity 0	75 (92)	81 (99)	0.127
Parity 1 or more	7 (8)	1 (1)	
Pre pregnancy illness			
Nil	77 (94)	79 (96)	
Asthma	3 (4)	0 (0)	<0.001
Chronic hypertension	2 (2)	1 (1)	
Diabetes mellitus	0 (0)	2 (3)	
Antenatal illness			
Absent	64 (78)	54 (66)	0.019
Present	18 (22)	28 (34)	
Gestational age at birth			
< 37 weeks	22 (27)	11 (13)	0.032
≥ 37 weeks	60 (73)	71 (87)	
Mode of delivery			
Caesarean	80 (98)	82 (100)	0.155
Vaginal	2 (2)	0 (0)	
Postpartum complication			
Absent	81 (99)	79 (96)	0.311
Present	1 (1)	3 (4)	
Sex of baby			
Boy	39 (48)	40 (49)	0.876
Girl	43 (52)	42 (51)	
Birth weight of baby			
≤ 2.5kg	7 (8)	14 (17)	0.049
> 2.5kg	75 (92)	68 (83)	
Partner support			
Yes	82 (100)	82 (100)	-
No	0 (0)	0 (0)	
Return to work			
Yes	63 (100)	63 (99)	0.589
No	0 (0)	1 (1)	

62% (Table 2). ARM had higher rates of long breastfeeding duration compared to SCM (62% versus 55%). However, this difference was not statistically significant (p=0.114). A marginally higher percentage (47.5%) of ARM achieved EBF compared to SCM (46.3%). Overall rate of EBF was 47.0%. The mean duration of breastfeeding in this study was 15.2 ± 9.9 months with ARM attaining a higher mean duration of 16.09 ± 10.19 compared to SCM (14.28 ± 9.56). This difference, however, was not statistically significant (p = 0.242).

Simple logistic regression analysis followed by multiple logistic regression (Table 3), revealed that only one significant predictor variable emerged i.e. education level (Table 3). Women with higher educational status had 1.9 times higher odds of exclusive breastfeeding.

DISCUSSION

The growing rates of IVF conception necessitates studies exploring specific concerns regarding this group of mothers and whether they need special attention regarding certain antenatal and postnatal aspects such as breastfeeding. We ventured to explore any effects of assisted conception via IVF on maternal breastfeeding practices compared to spontaneous conception. The present study indicated that the mode of conception did not statistically affect breastfeeding practices in terms of initiation, duration or exclusivity of breastfeeding. This is in line with the results of a Swiss comparative cross-sectional study (n = 1619) evaluating the effect of mode of conception on breastfeeding practices (Purtschert et al. 2021). Similarly, a retrospective cohort study of 76 Canadian women also showed no significant difference in EBF rate between women who conceived spontaneously compared to those who underwent assisted conception (O'Quinn et al. 2012). A more recent prospective study in Italy from 2018 to 2019, also showed similar results (Pisoni et al. 2023). The present research was the first such study in Malaysia, which may be anticipated to differ in view of the differences in culture and health support system. Nonetheless the outcome of our study showing similar EBF rates is reassuring to both mothers and healthcare professionals alike.

Malaysia's breastfeeding policy recommends EBF for the first six months of life and continued breastfeeding along with complementary food up to two years of age.

TABLE 2: Breastfeeding initiation, EBF and continuity of breastfeeding versus mode of conception

Outcome Variable	IVFC n(%) n=82	SC n (%) n=82	p-value
Breastfeeding Initiation within one week of delivery	82 (100)	82 (100)	-
Exclusive breastfeeding up to six months			
No	43 (52)	44 (54)	0.085
Yes	39 (48)	38 (46)	
Continuation of breastfeeding (duration)			
Less than 6 months	22 (27)	18 (22)	
6 to 12 months	9 (11)	19 (23)	0.114
≥ 12 months	51 (62)	45 (55)	

TABLE 3: Predictors of exclusivity of breastfeeding (EBF) by simple and multiple logistic regression models

Variable	Simple Logistic Regression			Multiple Logistic Regression		
	Regression coefficient (b)	Crude Odds Ratio (95% CI)	p- value	Regression coefficient (b)	Adjusted Odd Ratio (95% CI)	p-value
Mode of conception						
SC	0	1 (Ref)	0.090	0	1 (Ref)	0.100
IVFC	-0.54	0.58 (0.31, 1.08)		-0.54	0.59 (0.31, 1.11)	
Age (years)						
26-30	0	1 (Ref)	0.960			
31-36	-0.37	0.70 (0.31, 1.57)	0.788	-	-	-
37-45	-0.21	0.81 (0.33, 1.99)	0.800			
Education level						
Up to secondary	0	1 (Ref)	0.041	-	-	-
Tertiary and above	-1.38	0.87 (0.46, 1.65)				
BMI (kg/m^2)						
<18.5	0	1 (Ref)	0.872			
18.5-24.9	-0.18	0.83 (0.19, 3.62)	0.811	-	-	-
25-29.9	-0.23	0.79 (0.18, 3.62)	0.762			
More 30	-0.11	1.11 (0.24, 5.11)	0.891			
Work status						
Unemployed	0	1 (Ref)	0.180	0	1 (Ref)	0.150
Employed	-0.51	0.60 (0.29, 1.26)		-0.56	0.57 (0.27,1.23)	
Parity						
Parity 0	0	1 (Ref)	0.665	-	-	-
Parity 1 and above	0.67	1.94 (0.45, 8.42)				
Antenatal illness						
Absent	0	1 (Ref)	0.098	0	1 (Ref)	0.031
Present	0.62	1.87 (0.91, 3.82)		0.80	2.23 (1.06, 4.7)	
Gestational age at delivery (weeks)						
< 37	0	1 (Ref)	0.557	-	-	-
≥ 37	-0.64	0.53 (0.16, 1.68)				
Baby's gender						
Boy	0	1 (Ref)	0.733	-	-	-
Girl	0.11	1.11 (0.60, 2.06)				
Birth weight of baby (kg)						
≤ 2.5	0	1 (Ref)	0.063	0	1 (Ref)	0.040
≥ 2.56	-0.93	0.39 (0.15, 1.03)		-1.03	0.36 (0.13,0.96)	

The Code of Marketing of Infant Formula Products (Code) and the Baby Friendly Hospital Initiative (BFHI) serve as two important pillars in implementing this policy. The Code protects breastfeeding by controlling competitive promotion and advertising of commercial products that threaten to undermine maternal ability and intention to breastfeed, whilst BFHI promotes breastfeeding by creating a conducive environment in hospitals that empowers women to make the right choice on infant feeding (Subramaniam 2014). Correct information through patient health education, as well as strong family and

community support, all contribute to the individual mother's successful continuation of breastfeeding.

Breastfeeding initiation was started within one hour of delivery by mothers by both groups, indicating all types of conception had a positive acceptance. The positive acceptance was similar to a study by Pileri et al. (2021) whereby breastfeeding was initiated in 88% of spontaneous conception group, 86% of IVF conception mothers, and 73% in ovum donation group; as well as in a cross-sectional study in Switzerland (93.4% in IVF and 94.8% in control group) (Purtschert et al. 2021). The positive likelihood of breastfeeding initiation was likely due to the postpartum policies of clinical practice and the facilities that encouraged the practice in the hospital (Merewood et al. 2005). A good example of supporting policies are the policies developed by United Nations Children's Fund (UNICEF) and WHO named as 'Ten Steps to Successful Breastfeeding', which were adopted as criteria for a BFHI (Saadeh & Akré 1996). Pérez-Escamilla et al. (2016) demonstrated that this breastfeeding policy positively influences breastfeeding outcomes in the short, medium, and long term, enhancing early breastfeeding initiation and EBF rates at hospital discharge. A high rate of breastfeeding initiation was observed after both vaginal and caesarean deliveries, although majority of births being via caesarean section. This was despite previous studies from the United States, Mexico, and Hong Kong identified caesarean delivery as a risk factor for not starting breastfeeding (Teshale & Sintayehu 2020). This may be attributed to the presence of a well-established BFHI, promoting a "breastfeeding-oriented" environment (Merewood et al. 2005).

EBF for infants from birth until six months of age has been the main evaluation parameter in breastfeeding rate studies, as it is the recommendation by the WHO and the American Academy of Pediatrics (AAP) (Waits et al. 2018). In this study, the rate of EBF was noted to be less than 50%, which is considered low, regardless of mode of conception. Nevertheless, the rate of EBF in ARM (47.5%) was comparable to the rate among SCM (46.3%). The rate of EBF among our ARM was higher compared to a study in Italy where the EBF rate was 16% in the assisted conception group (Pisoni et al. 2023). However, this study included all assisted reproductive treatment, not just IVF, and the percentage of employed mothers was also higher at 85.5% compared to 77% in our study. The overall low rate of EBF in our study coincides with the low rates of EBF regionally and globally (Michels et al. 2016). Barriers to EBF include lack of prenatal education, misperception of inadequate milk, misinterpretation of normal infant crying, lack of support, issues related to work, and early food or solids introduction (Foo et al. 2005). Further research is needed to explore factors contributing to low EBF in both groups, where qualitative studies might be helpful. As the study showed that educational level influenced the outcome of EBF, further emphasis should be given to finding ways to educate mothers with lower educational levels in both groups of conception.

Evidence-based details on how specific reproductive treatment methods may influence breastfeeding behaviour are not readily available (Castelli et al. 2015). Pathophysiological mechanisms underlying an association between breastfeeding and mode of conception are at best speculative. It has been reported that women who had utilised IVF for conception faced psychological distress and early parenting difficulties that can contribute to difficulty in their breastfeeding practices (Cousineau & Domar 2007). Furthermore, women who conceive via IVF are more prone

to pregnancy complications, as they tend to be older compared to those who conceive naturally. Milk supply problems were also found to be experienced by women conceiving with fertility treatment (Hammarberg et al. 2011). However, despite these difficulties, the results of this and many other studies remain reassuring and can be cited by healthcare providers to instil confidence among women undergoing ART to breastfeed their newborn infants.

In this study, it was found that the presence of antenatal illness had a significant relationship with EBF. Antenatal illness in the context of our study was defined as any medical or obstetric problems that were encountered during pregnancy such as diabetes mellitus, hypertension, pre-eclampsia, placenta previa and other illness. The present study showed that the presence of antenatal illness was positively associated with EBF practice. This could be explained by the frequency of antenatal care visits due to their illness and the good opportunity for them to have frequent nutritional counselling and education about their illness as well as on breastfeeding. This positive correlation between antenatal illness and EBF was further supported by a study among high-risk Portuguese women, which concluded that only a small cohort of high-risk pregnant women had conditions that could hinder breastfeeding (Moimaz et al. 2020). However, the relationship was inconsistent, where research by Haile et al. (2016) found that the odds of EBF was lower among women with gestational diabetes mellitus compared to women without the condition (OR = 0.59; 95% CI, 0.39, 0.92). This unique finding emphasised the importance of frequent breastfeeding education during their antenatal period. Previous studies have shown that support from healthcare professionals, breastfeeding education programs, breastfeeding promotion initiatives, and easy access to healthcare during the antenatal period are important factors that encourage EBF (Biks et al. 2015).

The present study results showed that the birth weight of the newborn had a significant relationship with exclusivity of breastfeeding at six months. Women who delivered a baby with birth weight of $\geq$ 2.5 kg were more likely to exclusively breastfeed their child as compared to women giving birth to babies with birth weight $\leq$ 2.5 kg, an outcome that is consistent with previous studies (Pileri et al. 2021; Purtschert et al. 2021). Infants with lower birth weights or who are smaller in size are more likely to experience feeding difficulties, including challenges with initiating early breastfeeding, compared to larger or healthier babies. In this study, we excluded preterm delivery and multiple pregnancy, which are common contributory factors for low birth weight. Early initiation of breastfeeding and EBF have the potential to reduce growth faltering and morbidity especially for babies born with LBW (Thakur et al. 2012).

For comparison, in a study by Tan in 2011 on mothers in Peninsular Malaysia, the prevalence of EBF among mothers with infants aged between one and six months was 43.1% (95% CI: 39.4, 46.8). EBF was positively associated with rural residence, Malay mothers, non-working and non-smoking mothers, multiparous mothers, term infants, mothers with husbands who support breastfeeding and mothers who practice bed-sharing (Tan 2011). Mutual parental decision to persist with breastfeeding is a vital factor in the Malaysian household (Draman et al. 2017).

A major strength of this study is that this is the first study on breastfeeding practice following ART pregnancy in Malaysia. It provides a baseline for future research on the impact of a variety of fertility treatment on breastfeeding practice. Besides that, our study

included two groups of women with infertility but with different types of conception, IVF versus spontaneous conception. In this study, the two groups were matched in terms of maternal parity, age, delivery method and pregnancy period. Therefore, by avoiding these confounding factors, we were able to demonstrate the effect of mode of conception on breastfeeding practice more validly.

The present study had several limitations. The data collection method through telephone interviews could have introduced bias such as misunderstanding of the question and dependancy on maternal recall. As the information was collected two to eleven years after birth, there was a possibility of memory bias. Nonetheless, we attempted to minimise this bias by using several distinct time frames (e.g. < 12 or ≥ 12 months). Furthermore, memories of one's first child is rarely forgotten. However, there is still potential biases in self-reported data, due to the data being collected via telephone interviews. Additionally, this is a retrospective study with a relatively small sample size. The number of qualified ARM group samples who responded did not meet the minimum sample size, causing the study to be slightly underpowered, and it only included IVF mothers from one centre. Thus, generalisability to other hospital or setting should be done with caution. Therefore, the future prospective research should include other types of fertility treatment and include more than one centre.

CONCLUSION

Among women with infertility, conception mode had no significant association with breastfeeding practices when women who had IVF conception were compared with women who conceived spontaneously. Therefore, mothers undergoing this reproductive treatment may be assured that they have similar chances of success in breastfeeding as mothers who conceived spontaneously.

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