

The Availability of Information on Induced Lactation in Malaysia

NORSYAMLINA Che Abdul Rahim¹, ZAHARAH Sulaiman², TENGKU ALINA Tengku Ismail³

Submitted: 8 Mar 2017

Accepted: 7 May 2017

Online: 18 Aug 2017

¹ Women's Health Development Unit, Universiti Sains Malaysia, Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia

² Women's Health Development Unit, School of Medical Sciences, Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia

³ Department of Community Medicine, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia

To cite this article: Norsyamalina CAR, Zaharah S, Tengku Alina TI. The availability of information on induced lactation in Malaysia. *Malays J Med Sci.* 2017;24(4):5–17. <https://doi.org/10.21315/mjms2017.24.4.2>

To link to this article: <https://doi.org/10.21315/mjms2017.24.4.2>

Abstract

Induced lactation is a method of stimulating the production of breast milk in women who have not gone through the process of pregnancy. Recent advances in technology have given such women the opportunity to breastfeed adopted children. Previous studies conducted in Western countries have explored the breastfeeding of adopted children, as well as the experiences, successes and challenges of this process. However, research on procedures for breastfeeding adopted children is lacking in Malaysia. The authors have therefore reviewed literature related to induced lactation in Malaysia to fill this gap. Of the 30 related articles identified, 19 described the breastfeeding practices and experiences of adoptive mothers in Malaysia. Out of 19 articles, there were four journal articles, five circulars and regulations, two books, two post-graduate theses, four blogs posts and forum discussions, and two online newspaper articles. Medical information relating to induced lactation procedures was also reviewed, showing that there was a lack of scientific studies focusing on induced lactation practices among adoptive mothers. Information on religious, specifically Islamic, perspectives on breastfeeding and child adoption laws was gathered from websites, social networks, blogs, magazines and online news sources. In consideration of recent advancements in medical technology and the dire need among Malaysians, it is crucial that evidence-based, accurate and reliable information on induced lactation is made available to professionals and other individuals in this country.

Keywords: breastfeeding, lactation, human milk, nursing, galactogogues, adoption, legislation, jurisprudence

Background

Advancements in medical science and technology, especially induced lactation, have given women the ability to breastfeed children to whom they did not give birth. Induced lactation is a medical process by which a woman who has not been pregnant with the infant she intends to breastfeed, and who is not currently breastfeeding another child, is able to produce breast milk (1, 2). Many women claim that the ability to breastfeed their adoptive child makes them feel more complete as women and mothers.

It also improves maternal-infant bonding between the adopted child and parent (3).

Nowadays, awareness about nursing an adopted child progressively increases with the practice of adoption. Research on breastfeeding an adopted child has begun to be documented since the mid-20th century with keywords such as 'non-puerperal lactation', 'abnormal lactation in the virgin', 'breastfeeding without pregnancy', 'breastfeeding adopted children', 'extraordinary breastfeeding', 'wet nursing' and 'induced lactation'. Writing and published articles focused on the overall review of this

practice and also included case studies about breastfeeding without giving birth (4). Despite these purported benefits, induced lactation, although widely discussed on social media, has not been studied in depth by researchers in Malaysia. Nevertheless, the earliest research on induced lactation procedures among adoptive mothers was conducted in 1981 by Auerbach and Avery (5). Research on induced lactation was reported in only a few countries (6–10).

Malaysia is a multicultural society that includes ethnic Malays, Chinese and Indians. However, child adoption is not uncommon in this multi-ethnic society. Analysis done by the National Registration Department in 2011 has shown that the highest number of adoption applications were submitted by Malay couples ($n = 3418$), followed by Indian ($n = 286$) and Chinese ($n = 229$) couples. Punjabis and natives from Sabah and Sarawak states also submitted a large number of applications for child adoption ($n = 1595$) (11). The National Lactation Centre of the Ministry of Health Malaysia reported that only 24 mothers underwent induced lactation in 2013 (12). This number increased to 68 in 2014 and there were 52 cases in 2015 (13, 14). However, there is less research, particularly involving the Muslim community (4) on why such practices are carried out or simply what factors motivate the breastfeeding of an adopted child.

Breastfeeding can play an important role in helping a woman to adapt to becoming a mother. Among the reasons which would encourage nursing through the method of induced lactation are: to save the lives of babies whose mothers die soon after their birth (15–17); to build a strong bond between mothers and the children to whom they did not give birth (18); to meet the nutritional needs for breast milk in the case of babies carried by surrogate mothers (19, 20); and nursing an adopted child is to create a restriction against marriage between siblings who were nursed by the same mother (21). Child adoption can raise many conflicts, especially among Muslims with regard to the issue of *mahram* relationships between adoptive parents and children. The term 'mahram' is used to denote a level of relationship between close family members; those with whom the hijab does not have to be observed. An adoptive mother and her adopted child are considered to have developed a mahram relationship after the mother breastfeeds the child (i.e., provides them with a complete meal of breast milk) at least five

times before the child reaches the age of two. In Islam, the adoptive mother is not considered to have any familial bond with her adopted child until she feeds them with her own breast milk. Therefore, the Fatwa Committee of the National Fatwa Council for Islamic Religious Affairs in Malaysia recommends that a Muslim adoptive mother should feed her adopted child with her breast milk to make that child a full member of her family (22).

Women who choose to feed the adopted child with their breast milk are required to follow a strict protocol, which was initiated by a breastfeeding expert Dr Jack Newman (23). When following this protocol, a number of factors must be taken into account, including the baby's estimated date of arrival, and the age and reproductive health of the mother, especially regarding her ovarian function. Nevertheless, inducing lactation is not a simple process, and there have been cases where women started the process but were unable to achieve the main objective of creating a relationship with their adopted child (23).

Induction of lactation is a way to provide an enhanced bonding experience for women. Unfortunately, not enough milk is produced to exclusively breastfeed the infant, but women find satisfaction in this rigorous process because of the maternal bonding with the infant that it promotes (24). This review article examines all studies related to induced lactation in Malaysia in order to assess the current state of knowledge of this topic, to upgrade the existing system and fix any imperfections in induced lactation practices in Malaysia.

Methods

To guide this review, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards were used (25). PRISMA is an evidence-based minimum set of items for reporting in systematic reviews and meta-analyses. For this article, the medical literature was reviewed in search of evidence to support currently popular recommendations for inducing lactation. The terms 'breastfeeding', 'induced lactation', 'adoptive breastfeeding', 'adoptive mother', 'adoptive children' and 'Islamic jurisprudence in context of induced lactation' were searched in the databases including Scopus, ScienceDirect, Google Scholar, MEDLINE, PubMed and Elsevier. News websites, social networks, blogs and online

discussion fora were among the sources used to obtain data on feeding practices and experiences of adoptive mothers in feeding their children. In addition, information relating to induced lactation was also obtained from post-graduate theses written at several local universities. This study only included issues discussed within Malaysia.

Data Selection

Our initial searches resulted in 30 references, of which 19 studies included in qualitative synthesis met our inclusion criteria: 1) they were available in English or Malay, either in full text or abstract; 2) they examined the effects of medication on lactation; 3) they investigated induced lactation procedures; or 4) they reviewed induced lactation cases. Out of 19 articles, there were four journal articles, five circulars and regulations, two books, two post-graduate theses, four blogs posts and forum discussions, and two online newspaper articles. Searches conducted to identify potential items for review are shown in Figure 1. Our review was

limited to works published from January 2006 to July 2016.

Data Collection

Data collection lasted from July 2015 to July 2016. References related to induced lactation and child adoption in Malaysia were selected for this study. Broadly speaking, we included works focused on feeding adopted children, adoptive mothers' experiences of feeding their adopted children and induced lactation procedures among adoptive mothers, as well as Malaysian laws, policies and regulations related to child adoption and breastfeeding, especially among adoptive mothers. Materials discussing induced lactation remain relatively sparse; all studies concerning induced lactation practices were therefore included in our review, regardless of experiences, protocols or procedures followed. Also, regardless of their demographics, all studies were included that pertained to knowledge about and support for feeding experiences, breast milk production and breastfeeding duration in adoptive mothers' induced lactation procedures.

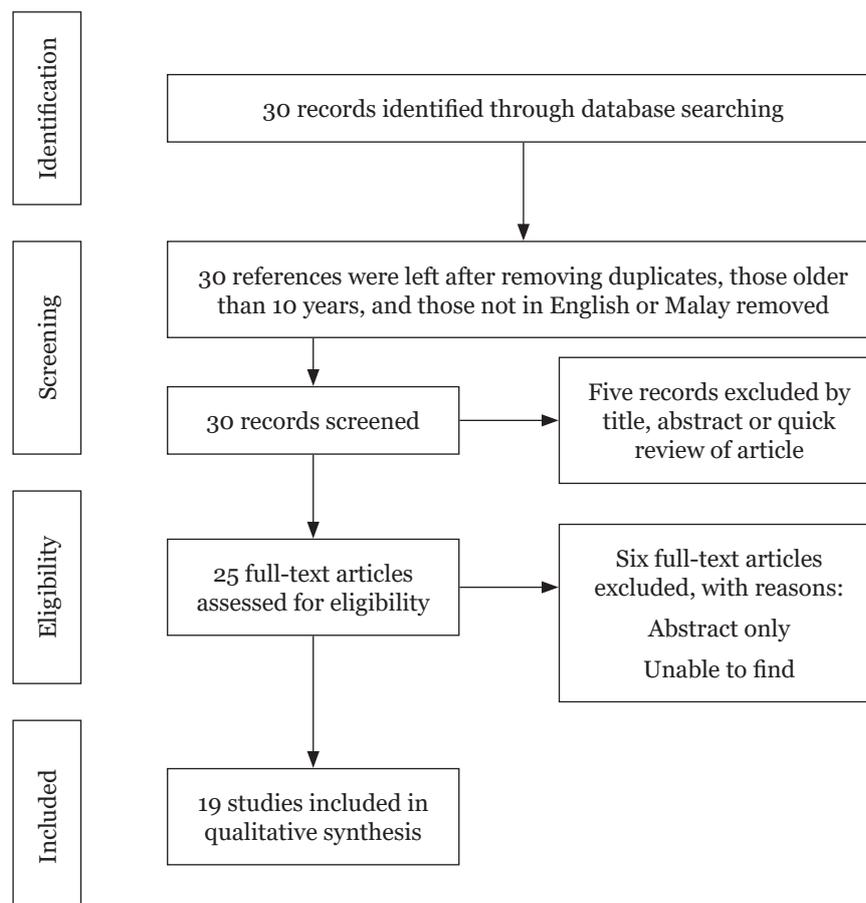


Figure 1. Eligibility determination process

Results

Table 1 contains a summary of the studies ($N = 19$) which are divided into 6 categories: 1) adoption legislation in Malaysia; 2) the concept of breastfeeding adopted children from an Islamic perspective; 3) the legality of women breastfeeding adopted children; 4) the use of drugs in nursing an adopted child; 5) Malaysian breastfeeding guidelines for adopted children and 6) challenges in nursing adopted children.

Availability of Information on Induced Lactation and Child Adoption in Malaysia

Literature regarding induced lactation remains relatively sparse. Most recommendations in the area of induced lactation are based on anecdotal experience because the few studies that exist are either small, short-term studies or case reports (44–46). It is difficult to determine the actual number of women who have undergone procedures to induce lactation, but older

Table 1. Summary of the findings, included studies ($N = 19$)

Category	Source	Finding
1. Adoption Legislation in Malaysia	Registration of Adoptions Act 19521 (26)	Adoption can be done through the National Registration Department. Guarantees security and stability of child's position in their adoptive family.
	Adoption Act 19521 (27)	Adoption can be done through the Court. Dictates who can adopt, places restrictions on adoptions by single men, requires consent of all parents/guardians of prospective adoptees, and sets out requirements for adoptive parents to protect the rights and interests of adopted children.
	Child Act 2001 (Act 611) (28)	Defines 'adoptive parent'. Children protection through adoption program is more appropriate for children who do not have families. This is happen because the adoption concept will last longer compared to the temporary child care.
	Family Law Act of Islam (Federal Territories) Act 1984 (29)	Defines 'adoption' as the suckling of a baby to sufficiency by a woman who is not its natural mother at least five times during the first two years of its life, and specifies that in this way, mahram relationships are established between adopted children and the members of their adoptive family.
	Leave Child Care Facilities (Service Circular Letter Number 5 Year 2014) (30)	Improves child care leave, and dissolves links between maternity leave and child care leave. Child care leave which do not tied to the period of maternity leave was extended to women who has a dependent step child, foster child taken by law and foster children.
2. The Concept of Breastfeeding a Foster Child from an Islamic Perspective	Siti Zainab, 2011 (31)	Discussion of adoption and breastfeeding (<i>rada'ah</i>) from the perspective of Islamic law, especially with regard to the protection of adopted children.
	Islamic Development Department of Malaysia, 2011 (22)	Defines the conditions for adoption via breastfeeding according to Islamic law (<i>Shari'ah</i>).
	State of Selangor, 2003 (32)	Discusses adoption via both breastfeeding and the use of assistive devices (e.g. Bottle feeding) in the context of <i>shari'ah</i> .
	Azizah, 2011 (33)	Review of literature on the concept of breastfeeding in an adoptive relationship.
	Zulkifli, 2015 (34)	Exploration of the three pillars of feeding an infant, and the mechanisms for verifying the occurrence of breastfeeding.

(Continued on next page)

Table 1. (continued)

Category	Source	Finding
3. Legal Woman Breastfeeding Adopted Child	Islamic Development Department of Malaysia, 2011 (22)	Discusses breastfeeding practices from an Islamic perspective. Islam also allows a woman who does not give birth but adopts a child to breastfeed such child with the assistance of medical treatment.
	Norkumala, 2014 (35)	Explains concerns related to adoptive breastfeeding by single unmarried women.
	Maznah, 2007 (36)	Dictates single women could breastfeed, provided they have reached child-bearing ages. Also, the need to consult Islamic texts and scholars concerning this issue.
	Mohd Farid Ravi, 2006 (37)	Islam is never against adoptive breastfeeding practices among unmarried women, based on history.
	Zulkifli, 2015 (34)	Explains single women are allowed to breastfeed their adopted children with their own milk and not from other sources. For instance; cow milk.
4. The Use of Drugs in Nursing an Adopted Child	Islamic Development Department of Malaysia, 2011 (22)	Dictates the use of medical procedures to stimulate milk production is permissible if the woman has reached puberty and the procedure are not harmful.
	Siti Fatimah et al., 2015 (38)	Explains synthetic hormones is allowed, provided they do not contain illegal substances and not detrimental to both mother and baby.
	Mohd Farid Ravi, 2006 (37)	Discusses Islamic view on using hormones for adoptive breastfeeding.
	Nik Hazlina, 2013 (39)	Discusses process of induced lactation, adoption laws related and benefits of breastfeeding.
	IBCLC Malaysia, 2015 (40)	Explains the importance of stimulate in establishing breast milk in adoptive breastfeeding.
5. Malaysia Breastfeeding Guidelines on Adopted Children	Zilal, 2014 (41)	Establishment of four stage model guidelines on adoptive breastfeeding.
	Norkumala, 2014 (35)	Suggests seeking for professional advices regarding usage of medical technology in adoptive breastfeeding.
	IBCLC Malaysia, 2015 (40)	Recommends qualified medical practitioners or lactation consultants' opinions and advices for induced lactation process.
6. Challenges in Nursing an Adopted Child	Zilal & Farahwahida, 2015 (4)	Explores internal and external factors for successful breastfeeding.
	Zilal & Farahwahida, 2014 (42)	Identifies six major challenges in nursing an adopted child.
	Siti Mariam, 2013 (43)	Discovers main challenges in adoptive breastfeeding which are misconceptions, poor support, lack of commitment, health issues, career setbacks and lack of motherhood instinct.

research, case reports, various websites and a small number of publications indicate that the practice continues today (1, 3, 5, 8, 17, 44–47).

Much of the available information on induced lactation and adoption is from individual bloggers, family magazines, Islamic departments of the Malaysian government websites, online news and journals published locally. This is similarly noted in studies by Auerbach and Avery (5) and Goldfarb (48), in which sources of knowledge about induced lactation were popular, rather than academic, publications. Information about adoptive breastfeeding usually comes from social media such as Facebook, blogs, and family magazines. Many of these sources discuss Islamic laws relating to adoption, induced lactation via medical procedures, and breastfeeding without marriage. In contrast, civil law focuses on ensuring children's interests and rights are protected in adoption, and on requirements for various parts of the adoption process.

Academic publications presented many cases of induced lactation experiments using galactagogues, a class of medications that initiate and/or increase milk production (8, 49–56). In addition, there have been several studies conducted on induced lactation practices, such as examining the success of induced lactation in non-pregnant women (17); identifying the processes that promote milk production for women who want to induce lactation (8); exploring motivating factors or reasons for why women want to breastfeed their adopted children (5, 48) and gathering experiences of induced lactation (57, 58). To date, there is no published data about induced lactation protocols or procedures in Malaysia.

Discussion

Adoption Legislation in Malaysia

There are four legal documents related to the custody of adopted children: the Registration of Adoptions Act of 1952, the Adoption Act of 1952, the Child Act of 2001 (Act 611) and the Family Law Act of Islam (Federal Territories) Act of 1984 (26–29). Custody adoption is defined as the legal act of placing a child with a parent or parents other than the birth (or 'biological') mother or father in section 30(1)(e) of the Child Act of 2001.

Most of the articles published in Malaysia are discussions of the issue of the relationship between mothers and adopted children. This

is supported by The Malaysian Bar. Adoption can be done through the National Registration Department (Registration Adoption Act 1952 (ACT 253)) (26) or through the Court (Adoption Act 1952 (ACT 257)) (27). In Malaysia, the law that is applicable to Muslims is the *Islamic Shari'ah*. It is legally enshrined in the Islam Enactment of legislation for states in Malaysia. For Malaysia's Federal Territories, there is a family law regarding adoption for Muslim families. It provides general protection for those involved in adoptions, and ensures that children's rights are protected (33).

In Malaysia, national policies on maternity leave also pose a threat to induced lactation practices. According to the Service Circular Letter Number 15 Year 2007 and Service Circular Letter Number 14 Year 2007 (59), the Convenience Leave to Take Care of a Child without any payment had been allocated to female employees for the purpose of taking care of and breastfeeding their babies, and similarly for female employees who have stepchildren under their care, or adopted children who had been adopted legally. The time period is limited to one year during the time of service or before the child reaches the age of five years old, depending on which comes first.

Breastfeeding Adopted Children: An Islamic Perspective

Breastfeeding an adopted child is not something new, especially in Muslim communities. For Muslims, breastfeeding an adopted child is an issue that requires detailed guidance and explanation. This is because it involves aspects of Islamic law such as family relationships, restrictions on *awrah* (nakedness; the intimate parts of a person's body that must be covered), instructions concerning mahram relationships, inheritances, preservation of family lineages, aspects of medical technology such as the use of hormonal drugs and nursing support equipment and potential future psychological effects of adoption on children brought up in an adoptive family (4). According to Zulkifli Mohamad al-Bakri, Federal Territory Mufti (34), there are three pillars in the feeding of a child: 1) nursing mothers; 2) children who breastfeed and 3) breast milk (34). All three conditions must be fulfilled in order for an adopted child to achieve the same status as a biological child. Next, the rounding mechanism for witnessing breastfeeding is divided into two, namely 1) recognition and 2) evidence. In summary, there are many rules and guidelines

for legally determining that feeding has occurred, should there be any problems when determining so-called milk relationships. Issues may arise in situations such as if a wet nurse did not tell anyone that she breastfed a certain child. Therefore, as a precaution, adoptive mothers should define the witnesses, or evidence that confirms that she has been nursing a baby, to avoid any problems later (33).

Azizah (33) reports that the practice of breastfeeding in the custody of an adoptive family can improve family relationships while at the same time maintaining the protection of children. Therefore, breastfeeding adopted children can have a big impact, promoting and offering protection for children who are in need of such care. Siti Zainab (31) describes the concept of adoption from the perspective of *fiqh* (*fiqh* is 'Islamic jurisprudence' and means 'to know Islamic laws about *ibadat* (acts of worship), *jazaa* (punishment) and *muamalat* (dealings and transactions) with detailed proof'. She conducted several studies on breastfeeding and adoption in Muslim countries, and her work serves as a good example for improving the laws regarding breastfeeding in Malaysia. Her comparative study examines the provisions relating to adoption in Malaysia and other Muslim countries such as Syria, Morocco and Algeria. She suggests that authorities should draw up specific legislation on breastfeeding to improve the quality of care and protection of children in Malaysia. Based on this research, inducing lactation in adoptive mothers is perfectly acceptable in Islam. In addition, the practice also influences the legal jurisprudence of milk, and establishes mahram relationships equivalent to blood or biological kinship among adoptive family members.

Legality of Women Breastfeeding Adopted Children

The Fatwa Committee of the National Fatwa Council for Islamic Religious Affairs, Malaysia (22) emphasises that Islam encourages every mother to nurse her baby herself with her breast milk until the baby reaches two years of age, if possible. However, Islam also allows a woman who has not given birth, but has adopted a child, to breastfeed that child with the assistance of medical treatment. It is not an offence for an unmarried woman to breastfeed, this has never been the practice of the Arabian. Even it was a form of the practice of breastfeeding another's child with the objective of being paid for it

becomes a source of revenue in the days before and after the advent of Islam (37).

Maznah (36) demonstrated that if breast milk is produced by a virgin, and milk is consumed by the baby, then there is *hurma* (being forbidden to marry) between the woman and her relatives, with the baby making such a marriage illicit by reason of a relationship of consanguinity. There is no minimum age for producing milk; this is related to the ability to conceive and bear children. Girls under nine years of age cannot be said to be able to (physically) give birth.

According to Zulkifli Mohamad al-Bakri, Federal Territory Mufti (34), one of the conditions for feeding mothers are that the person who is breastfeeding must be a woman, so it does not include milk from a man or animal milk. For example, two children who are given milk from cows are not regarded as brothers, as they would be if they were both breastfed. It is because method 'The ban is a branch than about his mother and no convictions ban mothers with breastfeeding and therefore brotherhood more mainstream'. Thus, when exploring Islamic perspectives on breastfeeding and adoption, scholars must consult Islamic texts and discourse directly to determine what is and is not allowed.

Use of Drugs in Nursing Adopted Children

Procedures commonly used to induce lactation include pharmacologic (hormonal stimulation) and non-pharmacologic (breast stimulation) methods, often in combination. A woman may induce lactation with breast stimulation (manually, with a breast pump, or by nursing). Generally, two types of medication are used, contraceptives and galactagogues. Contraceptives are used to replicate the pregnancy stage in which high levels of oestrogen and progesterone exist (60) and galactagogues are medications that aid in initiating and maintaining adequate milk production (61). Metoclopramide and Domperidone are two examples of medication (9) that are frequently used as galactagogues. Numerous other herbs, such as fenugreek, blessed thistle, milk thistle, fennel, alfalfa, oats, and marshmallow root, are reported to aid in lactation, however research is scant (9). The medications used in the process of induced lactation are not identified in any journals published locally. Research only discusses the laws regarding the use of medication or injections in inducing lactation for

women who have never been pregnant and are not married but have adopted children.

According to the National Fatwa Council for Islamic Religious Affairs, Malaysia, inducing lactation via a medical procedure is allowed in women who have reached puberty whether they are married or single, provided the medications and hormones used contain no forbidden substances and can in no way harm the woman or child (22). Similarly, Siti Fatimah et al. also mention that synthetic hormones are allowed to be used for inducing lactation as long as they do not contain forbidden substances and cannot harm the woman or the child under any circumstances (38). Thus, it is permissible to use milk resulting from the consumption of medications, including synthetic hormone injections, to feed adopted children, according to the *Hanafi*, *Maliki*, *Shafi'i* and *Hanbali* schools of thought.

Induced Lactation Guidelines in Malaysia

There are only two published articles that look at induced lactation by adoptive mothers (4, 42). In those articles, Zilal and Farahwahida (42) stress the experiences of 12 adoptive mothers who have successfully breastfed their adopted children, and produce guidelines on induced lactation for Muslim mothers. Their findings identify the driving factors behind adoptive breastfeeding and adoptive breastfeeding implementation processes, and identify women's levels of knowledge about legal jurisprudence regarding breastfeeding by adoptive mothers. These studies also identify the desire to establish a mahram relationship as the main factor motivating adoptive mothers to breastfeed their adopted children; other factors include maternal love, psychology and nutrition. Zilal and Farahwahida (42) have outlined two objectives for breastfeeding in a Muslim society such as Malaysia: it is a requirement of Islam and it develops a human connection between children and their adoptive parent(s). This study has shown that Muslim families who have adopted children can build a better relationship between the adopted child and their other children through induced lactation (42).

Zilal (41) has developed a model for adoptive breastfeeding that integrates both the fiqh and scientific perspectives. Her study explains that there are four stages that lead to success in breastfeeding adopted children: 1) terms of fiqh in breastfeeding an adopted child; 2) implementation of breastfeeding an adopted

child; 3) implications of fiqh on breastfeeding an adopted child; 4) the goal of breastfeeding an adopted child. The resulting model could be a guide for both adoptive mothers and medical professionals to achieve success with breastfeeding adopted children.

Challenges in Nursing Adopted Children

Information on induced lactation is easily accessible on the Internet, but the validity of this information is questionable. Online breastfeeding references give a variety of recommendations on how to induce lactation. Much of the information is shared on personal blogs and websites. Protocols and procedures for induced lactation originated with Dr Jack Newman and Dr Lenore Goldfarb (62). In 2013, the newspaper, *Utusan Online*, started a discussion in its health column on women's questions about induced lactation, coordinated by Professor Dr Nik Hazlina Nik Hussain, a senior consultant obstetrician and gynaecologist at the Hospital University Science Malaysia and the head of the Women's Health Development Unit at the School of Medical Sciences of that university. She has discussed in depth the processes a woman can undergo to induce lactation, the laws on adopting a child and the benefits of breastfeeding (39). A parenting magazine, *Pa and Ma*, also discusses induced lactation in detail (63).

Every woman is advised to meet face-to-face with a certified medical practitioner, lactation consultant or lactation counsellor to get a comprehensive overview of the process she will undergo to induce lactation; doing research on the Internet alone is not enough to guarantee success (40). A direct consultation with experts gives women a much clearer picture of the available options, and a fuller understanding of the best practices for adoptive breastfeeding.

Theoretically, the basic concept and procedures for inducing lactation seem straightforward, but in practice almost all women face severe difficulties. Zilal (4) found that not all women who attempted induced lactation could produce milk, often due to a poor understanding of the concept. In many cases, the mother had limited exposure to and knowledge of induced lactation protocols and procedures, which frequently led to further problems after adoption, especially (for Muslim mothers) regarding establishing a mahram relationship with their adopted child. Zilal (4) stated that induced lactation was not a minor issue, because

it involved child's rights and family ties – the backbone of a good society.

Only two articles were identified which discuss the challenges in Malaysia of breastfeeding an adopted child. Both articles were by Zilal and Farahwahida (4, 42) and were published in the Malaysian Journal of Technology. According to them, some people are still sceptical about breastfeeding an adopted child (42). These people consider it to be against human nature. The main challenges in induced lactation are: misconceptions; lack of commitment, support or maternal instinct; health problems; non-conducive work environments and career setbacks. Objections from family members can prevent a woman from attempting the process of inducing lactation. In cases where a Muslim woman does not successfully breastfeed her adopted child, either because she has been discouraged from attempting the procedure or because one (or more) of the above difficulties has caused her to discontinue her efforts to induce lactation, problems can arise due to the baby not being considered to have a mahram relationship with the adoptive mother (43).

Besides establishing peer counsellors at health clinics and hospitals, research also shows the importance of support groups consisting of adoptive mothers who have managed to successfully breastfeed their babies. Such groups are a platform for mothers to get support and share their experiences of breastfeeding their adopted children. Hence, they can serve as a valuable support system during induced lactation procedures (64). The mother who chooses to augment lactation will need more support and encouragement in her efforts from her partner, family and health clinicians. Emotional and psychological factors can influence oxytocin secretions, therefore self-confidence and a strong desire to succeed are important factors for success.

Conclusion

There is still space for discussion about different procedures or protocols for inducing lactation work, depending on the community. There are many factors to be considered in induced lactation programmes, due to adoptive mothers' varying religious and ethnic backgrounds, health status, and financial and environmental challenges. No research has shown that there are effective guidelines

in place for induced lactation in Malaysia. Establishing such guidelines is very important, and it is especially urgent in Malaysia, given the recent expansion in Malaysians' awareness of the possibility of breastfeeding adopted children. Many Malaysian medical experts and adoptive parents do not have standardised information on procedures and protocols for induced lactation. The authors therefore suggest that these procedures and protocols should be disseminated to medical practitioners, lactation consultants, lactation counsellors and individuals certified in breastfeeding support, as well as to adoptive mothers. These procedures and protocols should be documented scientifically to create a model for induced lactation that can be followed by Malaysian parents and medical professionals in the years to come.

This review has highlighted many related topics that need to be researched. Even though there are Malaysian researchers investigating the role of community support in breastfeeding, there should also be in-depth examinations of the effects of breastfeeding on adopted children. We recommend that future projects develop a practical model for induced lactation in Malaysia to explore maternal views related to the mothers' needs, obstacles, experiences, perceptions and motivations.

Conflict of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funds

The authors received no financial support for the review, authorship and/or publication of this article.

Authors' Contributions

Conception and design: NCAR
 Analysis and interpretation of the data: NCAR
 Drafting of the article: NCAR
 Critical revision of the article for important intellectual content: ZS, TATI
 Final approval of the article: ZS, TATI
 Provision of study materials or patients: NCAR
 Statistical expertise: ZS
 Obtaining of funding: ZS
 Administrative, technical, or logistic support: NCAR
 Collection and assembly of data: NCAR

Correspondence

Norsyamlina Che Abdul Rahim
Women's Health Development Unit,
Universiti Sains Malaysia, Health Campus,
16150 Kubang Kerian, Kelantan, Malaysia.
Tel: +6011 39163931
E-mail: ncar15_med062@student.usm.my; syamlina_rahim@yahoo.com

References

1. Cheales-Siebenaler NJ. Induced lactation in an adoptive mother. *J Hum Lact.* 1999;**15**: 41–43.
2. Hormann E, Savage F. *Relactation: review of experience and recommendations for practice.* Geneva, Switzerland: World Health Organization; 1998.
3. Auerbach KG. Extraordinary breast feeding: Relactation/induced lactation. *J Trop Pediatr.* 1981;**27**:52–55.
4. Zilal S, Farahwahida MY. Motivating factors to breastfeed an adopted child in a muslim community in Malaysia. *J Tech (Sciences & Engineering).* 2015;**74**(1):205–214.
5. Auerbach KG, Avery JL. Induced lactation. A study of adoptive nursing by 240 women. *Am J Dis Child.* 1981;**135**(4):340–343. <https://doi.org/10.1001/archpedi.1981.02130280030011>.
6. Thorley V. Induced lactation and relactation. In Mannel R, Martens PJ, and Walker M. *Core curriculum for lactation consultant practice.* 3rd ed. Boston: Jones and Bartlett; 2013.
7. Mohrbacher N, Stock J. *The breastfeeding answer book.* 3rd edition. La Leche League International; 2003.
8. Bryant CA. Nursing the adopted infant. *J Am Board Fam Med.* 2006;**19**(4):374–379. <https://doi.org/10.3122/jabfm.19.4.374>.
9. Szucs KA, Axline SE, Rosenman MB. Induced lactation and exclusive breast milk feeding of adopted premature twins. *J Hum Lact.* 2010;**26**(3):309–313. <https://doi.org/10.1177/0890334410371210>.
10. Dalzell J, Rogerson E, Martindale L. *Breastfeeding: contemporary issues in practice and policy.* UK: Radcliffe Publishing Ltd; 2010.
11. National Registration Department. *Data on application adoption 2011.* Ministry of Home Affairs Malaysia; 2012 [cited 2016 Sep 17]. Available from http://www.jkm.gov.my/jkm/uploads/files/pdf/laporan_statistik/statistic_2011/BHG_B_5_-_PERMOHONAN_ANAK_ANGKAT.pdf.
12. National Lactation Centre. *Data on induced lactation year 2013.* Ministry of Health Malaysia; 2014. 2 p. Reports No.: NLC2013-001.
13. National Lactation Centre. *Data on Induced Lactation Year 2014.* Ministry of Health Malaysia. 2015. 2 p. Reports No.: NLC2014-001.
14. National Lactation Centre. *Data on Induced Lactation Year 2015.* Ministry of Health Malaysia. 2016. 2 p. Reports No.: NLC2015-001.
15. Abejide OR, Tadese MA, Babajide DE, Torimiro SEA, Davies-Adetugbo AA, Makanjuola ROA. Non-puerperal induced lactation in a Nigerian community: case reports. *Ann Trop Paediatr.* 1997;**17**:109–114.
16. Chaturvedi P, Dubey AP. Induced non-pearperal lactation. *Indian J Pediatr.* 1985;**52**(3): 319–320.
17. Nemba K. Induced lactation: a study of 37 non-puerperal mothers. *J Trop Pediatr.* 1994;**40**(4):240–242. <https://doi.org/10.1093/tropej/40.4.240>.
18. Gribble KD. A model for caregiving of adopted children after institutionalization. *J Child Adolesc Psychiatr Nurs.* 2007;**20**(1):14–26. <https://doi.org/10.1111/j.1744-6171.2007.00076.x>.
19. Kathleen GA. Induced lactation: a study of adoptive nursing by 240 women. *Am J Dis Child.* 1981;**135**(4):340–343. <https://doi.org/10.1001/archpedi.1981.02130280030011>.
20. Kinga AS, Sherry EA, Marc BR. Induced lactation and exclusive breast milk feeding of adopted premature twins. *J Hum Lac.* 2010;**26**(3).
21. Zilal S, Farahwahida MY. Penyusuan anak angkat: satu analisis. In Bakar JA, Al-Battah ESM, Sukor SA, Lauto M, Najib S, Nadia A, editors. *Persidangan Antarabangsa Kekeluargaan dari Perspektif Global.* Johor Bahru: KPIJ PRESS; 2014. 124–144 p.

22. Fatwa Committee of the National Fatwa Council for Islamic Religious Affairs Malaysia. Breastfeeding adopted children. Islamic Religious Affairs Malaysia; 2014 [cited 2016 Jan 15]. Available from <http://www.e-fatwa.gov.my/fatwa-kebangsaan/hukum-wanita-menyusu-anak-angkat>.
23. Newman J, Pitman T. *The ultimate breastfeeding book of answers*. Roseville (CA): Crown Publishing Group; 2000.
24. Sharan H, Yahav J, Peleg D, Ben-Rafael Z, Merlob P. Hospitalization for early bonding of the genetic mother after a surrogate pregnancy: Report of two cases. *Birth*. 2001;**28**(4): 270–273.
25. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analysis: the PRISMA statement. *J Clin Epidemiol*. 2009;**62**(10):1006–1012.
26. The Commissioner of Law Revision of Malaysia. Registration of Adoptions Act 1952. Civil Registration and Vital Statistics Knowledgebase; 2006 [cited 2015 July 9]. Available from <http://unstats.un.org/unsd/vitalstatkb/KnowledgebaseArticle50622.aspx>.
27. The Commissioner of Law Revision of Malaysia. Adoption Act 1952. Civil Registration and Vital Statistics Knowledgebase; 2006 [cited 2015 July 9]. Available from <http://unstats.un.org/unsd/vitalstatkb/KnowledgebaseArticle50583.aspx>.
28. Child protection. Child Act 2001. Unicef.org; 2001 [cited 2016 Jan 9]. Available from https://www.unicef.org/malaysia/protection_child-act-2001.html.
29. Legislation. Islamic Family Law (Federal Territories) Act 1984. Landportal.info. 1987 [cited 2015 July 9]. Available from <http://landportal.info/es/node/22946>.
30. Government of Malaysia. Circular No. 5 of 2014 Implemented the government's decision. Public Service Department; 2015 [cited 2015 July 16]. Available from <https://sistem.jpa.gov.my/ppsp/index.php/cuti-pp/item/1146-pp-bil-5-2015-kemudahan-cuti-menjaga-anak.html>.
31. Siti Zainab AR. Suckling and its' significance in children foster care/foster relationship: Legal principles under Islamic law and the law in Malaysia [master's thesis]. [Department of Islamic Law, Gombak]: International Islamic University of Malaysia, Malaysia; 2011.
32. The State of Selangor. Administration of the Religion of Islam (State of Selangor) Enactment 2003. Selangor Mufti Department; 2012 [cited 2015 Oct 20]. Available from <http://www.muftiselangor.gov.my/2016-06-27-08-57-00/fatwa/fatwa-terkini/267-hukum-wanita-menyusukan-anak-angkat>.
33. Azizah M. Protection of rights of adopted children in relation to duties of adoptive parents under the law in Malaysia. *J Adopt Quarterly*. 2011;**14**(4):229–245. <https://doi.org/10.1080/10926755.2011.628261>.
34. Zulkifli MA. Irsyad fatwa-53: Preparation adoption law by a girl. Federal Territory Mufti; 2015 [cited 2016 Jan 16]. Available from <http://www.muftiwp.gov.my/index.php/ms-my/perkhidmatan/irsyad-fatwa/674-irsyad-fatwa-ke-53-hukum-penyusunan-anak-angkat-oleh-gadis>.
35. Norkumala A. Single women feed the baby. Department of Islamic Development Malaysia; 2014 [cited 2015 Dec 2015]. Available from <http://www.ikim.gov.my/index.php/ms/artikel?start=80>.
36. Maznah D. Single Woman Breastfeeding Adopted Child. Jamaah Islah Malaysia; 2010 [cited 2015 Dec 10]. Available from <http://laman-seri.blogspot.my/2010/03/wanita-bujang-menyusukan-anak-angkat.html>.
37. Mohd Farid Ravi A. Religion talk: must eat hormone pills for adoptive breastfeeding. *Utusan Online*; 2006 [cited 2015 Dec 10]. Available from http://ww1.utusan.com.my/utusan/info.asp?y=2006&dt=0915&pub=Utusan_Malaysia&sec=Bicara_Agama&pg=ba_03.html.
38. Siti Fatimah S, Mohd Zulkifli M, Saadan M. Synthetic hormone injections during breastfeeding intake: Dirasah ta'siliyyah. *J Islamic Contemporary Society*. 2015;192–208.
39. Nik Hazlina NH. Breastfeeding a adopted child. *Utusan Malaysia Online*; 2013 [cited 2015 June 18]. Available from http://ww1.utusan.com.my/utusan/Kesihatan/20130120/kn_01/Penyusunan-anak-angkat.

40. International Board of Certified Lactation Consultants (IBCLC) Malaysia. Breastfeeding issues: woman *fiqh* television program. *The Malaysian Lifestyle Media*; 2015 [cited 2015 Aug 15]. Available from <http://www.mmgazette.com/kenyataan-rasmi-perunding-laktasi-malaysia-ibclc-berhubung-isu-penyusuan-ibu-dalam-rancangan-fiqh-wanita-tv3-782015/>
41. Zilal S. Model on adoptive breastfeeding from fiqh and science perspective [doctoral's thesis]. Johor: University of Technology, Malaysia; 2014.
42. Zilal S, Farahwahida MY. Induced lactation by adoptive mothers: a case study. *J Tech (Sciences & Engineering)*. 2014;**68(1)**:123–132.
43. Siti Mariam A. Support for breastfeeding mothers. *Sinar Harian Online*; 2013 [cited 2015 July 16]. Available from <http://www.sinarharian.com.my/rencana/suami-boleh-bantu-jayakan-penyusuan-susu-ibu-1.192465>.
44. Biervliet FP, Maguiness SD, Hay DM, Killick SR, Atkin SL. Induction of lactation in the intended mother of a surrogate pregnancy. *Hum Reprod*. 2001;**16(3)**:581–583. <https://doi.org/10.1093/humrep/16.3.581>.
45. Thearle MJ, Weissenberger R. Induced lactation in adoptive mothers. *Aust NZ J Obstet Gyn*. 1984;**24(4)**:283–286. <https://doi.org/10.1111/j.1479-828X.1984.tb01512.x>.
46. Ryba KA, Ryba AE. Induced lactation in nulliparous adoptive mothers. *New Zealand Med J*. 1984;**97(768)**:822–823.
47. Kirkman M, Kirkman L. Inducing lactation: a personal account after gestational 'surrogate motherhood' between sisters. *Breastfeeding Review J*. 2001;**9(3)**:5–11.
48. Goldfarb L. *An assessment of the experiences of women who induced lactation*. Ohio: Union Institute & University Cincinnati; 2009.
49. Liebert MA. ABM Clinical Protocol #9: Use of galactogogues in initiating or augmenting the rate of maternal milk secretion. Academy of Breastfeeding Medicine Protocol Committee. In: *Breastfeeding Medicine*. 2011;**6**:41–49. <https://doi.org/10.1089/bfm.2011.9998>.
50. Emery MM. Galactogogues: drugs to induce lactation. *J Hum Lact*. 1996;**12(1)**:55–57.
51. Gabay MP. Galactogogues: Medications that induce lactation. *J Hum Lact*. 2002;**18(3)**:274–279.
52. da Silva OP. Domperidone for lactating women. *Can Med Assoc J*. 2004;**171(7)**:725–726. <https://doi.org/10.1503/cmaj.1041054>.
53. Campbell-Yeo ML, Allen AC, Joseph KS, Ledwidge JM, Allen VM, Cheales-Siebenaler NJ. Induced lactation in an adoptive mother. *J Hum Lact*. 1999;**15(1)**:41–43.
54. West D, Marasco L. *The breastfeeding mother's guide to making more milk*. USA: The McGraw-Hill Company; 2009. 278 p.
55. Zuppa AA, Sindico P, Orchi C, Carducci C, Cardiello V, Romagnoli C. Safety and efficacy of galactogogues: substances that induced, maintain and increase breast milk production. *Int J Pharm Pharm Sci*. 2010;**13(2)**:162–174. <https://doi.org/10.18433/J3DS3R>.
56. Zapantis A, Steinberg JG, Schilit L. Use of herbals as galactagogues. *J Pharm Pract*. 2012;**25(2)**:222–231. <https://doi.org/10.1177/0897190011431636>.
57. Moran L, Gilad J. From folklore to scientific evidence: breast-feeding and wet-nursing in Islam and the case of non-puerperal. *Lac Intern J Biomed Sci*. 2007;**3(4)**:251–257.
58. Marzieh S, Mitra F, Arabipoor A, Elahe M. A successful induction of lactation in surrogate pregnancy with metoclopramide and review of lactation induction. *Int J Fertil Steril*. 2010;**3(4)**:191–194.
59. Jabatan Perkhidmatan Awam. SARAAN 223/5/4-3 JLD.2 (3). No. Siri: Kerajaan Malaysia. Pekeliling Perkhidmatan Bilangan 5 Tahun. Kemudahan cuti menjaga anak; 2014 [cited 2016 July 16]. Available from http://registrar.utm.my/circular/files/2016/03/pp_052014_kemudahan-cuti-menjaga-anak.pdf.
60. Wittig SL, Spatz DL. Induced lactation: gaining a better understanding. *MCN Am J Matern Child Nurs*. 2008;**33(2)**:76–81.
61. Asztalos EV, Campbell-Yeo M, da Silva OP, Ito S, Kiss A, Knoppert D. Enhancing breast milk production with Domperidone in mothers of preterm neonates. Results of the EMPOWER trial. *J Hum Lact*. 2017.

62. Goldfarb KD, Newman J. Induced lactation. *Asklenore.info*. 2009 [cited 2016 Sep 10]. Available from <http://www.asklenore.info/index.shtml>.
63. Karangraf Media Group. Preparation of adoptive breastfeeding. *Pa & Ma Magazine Online*. 2012 [cited 2016 Jan 16]. Available from <http://www.majalahpama.my/famili/persediaan-menyusukan-anak-angkat-1.34043>.
64. Adoptive Breastfeeding Group. Adoptive breastfeeding. *moms@KIM*. 2014 [cited 2015 June 30]. Available from <http://kimsusuibu.blogspot.my/2013/02/penyusuan-anak-angkat.html>.