

The Effect of Knowledge on Breastfeeding among Mothers' in Abu Dhabi

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Abstract

Department of Health (DOH) the regulator of Abu Dhabi region in UAE launched its Baby Friendly Hospital Initiative (BFHI) on March 21, 2016. Despite this drive for last 3 years, there has been no noticeable changes or initiatives in private health sector. There are different factors that affect the breastfeeding behaviors that may result in sluggish response from private healthcare sector. The purpose of this article is to analyze the impact of knowledge and factors that modulates knowledge among breastfeeding mothers of Abu Dhabi. A mixed methods research design with a survey-based questionnaire was used to guide this research. Knowledge impacts breastfeeding practices ($P=0.001$) and is influenced by maternal age, educational preparedness, employer, employment, salaries and number of children. The sluggish progress of BFHI initiatives in Abu Dhabi is related to factors outside of the health system. Mothers are often faced with competing personal and professional decisions. This compels most mothers to adopt mixed feeding methodologies.

Keywords: breastfeeding, knowledge, breastfeeding knowledge, breastfeeding factors, breastfeeding practices.

Introduction

Breastfeeding is considered as the symbol of motherhood. It can be considered as a biological process of nourishing infants in their early days of life. Breastmilk has all the nutrients that are cardinal for the growth of the baby. International organizations like World Health Organization (WHO), Infant and Young Child Feeding (IYCF) and United Nations Children Funds (UNICEF) has recognized the benefits of breastfeeding. Nationally, the United Arab Emirates (UAE) has initiated its Baby friendly initiatives since 1993 from its Sharjah Baby Friendly Initiatives. The UAE is formulated by seven emirates. The capital of UAE is the emirate of Abu Dhabi. The health regulator of Abu Dhabi is the Department of Health (DOH). The DOH launched its baby friendly hospital initiatives on 2016. Even though it has been more than three years, there have been sluggish progress in the breastfeeding practices of UAE women.

As a part of governmental initiatives, healthcare industries in the Emirate of Abu Dhabi are motivated to achieve baby friendly practices through Baby-Friendly Hospital

Initiatives (BFHI). The BFHI program is developed based on the recommendations put forth by the World Health Organization. Based on the available researches in open sources, several gaps can be identified in Baby-friendly Initiatives in Middle Eastern countries. Even though the concepts of Baby-Friendly Hospital Initiatives have been adopted in Abu Dhabi since 2016, there is no comprehensive strategy to monitor the progress of breastfeeding initiatives or surveillance systems in the Abu Dhabi. There is a need for proper strategies, plans or actions and national targets to promote breastfeeding education, knowledge and attitude among women.

There is limited number of researches conducted in Abu Dhabi that specifically looks into knowledge and its relation to breastfeeding. The aim of this study is to address this gap in literature and to contribute to BFHI initiatives. This study will directly look into the relation between knowledge and breastfeeding and how knowledge is modulated by different factors. In this study, breastfeeding is considered as a complex behavior. Behavior is the resultant action of ongoing interaction between person

and environment. Behavior may change depending on the context of time. Hence the relation of behavior and knowledge may also change based on the other influencing factors.

The overarching theme of research question in this paper is “how does knowledge and factors that modulate knowledge affect the breastfeeding practices among the mothers in Abu Dhabi, UAE? This study guides through this research question using two objectives

1. How knowledge impact breastfeeding mothers in UAE?
2. How various factors modulates breastfeeding knowledge?

Literature review

It can be argued that the UAE was predominantly a breastfeeding culture considering its past and existence as an Islamic country. The Holy Quran recommends breastfeeding up to the age of two years in children (Taha, 2017). Knowledge is gained through education. As a developed country, the UAE understands the importance of education. The UAE have given substantial effort in its female education. As more and more females receive tertiary education, there is a substantial increase female employment rate followed by a positive economic transition. Female employment rate in the country has increased from 29.2 % in 1990 to 40.9% in 2017. The increase in employment and education rate has a reciprocal impact on the breastfeeding practices considering employment requirements acting as a barrier in maternal breastfeeding (Taha, Garemo & Nanda, 2018; Eidelman, et. al 2012). The duration and initiation breastfeeding have also been impacted by maternal education (Radwan, 2013). Maternal education has been identified as the key determinant for deciding breastfeeding behavior at or after 6 months (Tajir, Sulieman & Badrinath, 2006). Breastfeeding practices also depends on the duration of maternity leaves availed in each facility. Public sectors generally provide higher maternity benefits compared to private facilities. Mixed feeding has now emerged as the norm among employed couples (Radwan, 2013).

A mother can acquire breastfeeding knowledge from multiple arenas. This may include healthcare facility, family, peer group, school, training camps, online resources or through various marketing campaigns. Lack of

maternal knowledge on breastfeeding may result in multiple misbeliefs that may tempt the mother to persuade bottle feeding. This may include the feelings such as a baby is crying because of hunger or breast pain is related to poor breastfeeding practices and positioning (Taha, Garemo & Nanda, 2018). In a study conducted by Eidelman, et. al (2012), it was noticed as a common practice among the UAE mothers to combine breastmilk with complementary formula feeding. In their study, only 24% has been noticed to commit to exclusive breastfeeding at birth. However, majority of women planned to combine breastfeeding with formula feeding. One of the key reasons identified in this study as related to maternal knowledge on breastfeeding. The mothers in this study believed that breastfeeding is insufficient, and supplementation with infant formula provides additional nutrition.

Majority of the researches reviewed in this study focuses on a narrowed aspect of maternal or rarely infant attributes. The effect of knowledge of breastfeeding and the factors that modulates knowledge are solely depended on a self-reported reason that may be influenced by their limited insight into the concept of breastfeeding. Many a times a woman may be unaware about the broader environmental and socio-economic influences that may affect their breastfeeding behavior. Survey questions may limit women’s response on their perception or may choose to not answer socially less acceptable responses such as loss of breast shape (McLennan, 2001) or having a dysfunctional family.

Methods and materials

The selected research design demonstrates an empirical setting to investigate the theoretical underpinning from the literatures reviewed to test the hypothesis identified in this study. Analysis of the factors influencing breastfeeding will progress through qualitative and quantitative approach. The primarily validation can be confirmed through quantitative approach, however, qualitative information can be used to further validate the constructs identified in conceptual framework (See appendix 1). In combination both these approaches can help to triangulate the data where quantitative analysis can interpret empirical findings by showing the level of significance of relationship while

qualitative information explores interpretation of the phenomena.

As the current study tries to study a human behavior, which is a complex multifaceted concept. Mixed method researches are considered as a legitimate approach among social science researchers (O'Cathain et al., 2007). Referring back to the theoretical underpinnings in this study, the concept of behavior is contextual. That is behavior can change due to multiple factors overtime. Mixed method researches, in such instance will allow researchers to draw on the merits and minimize the weakness associated with qualitative or quantitative research methodology (Doyle *et al.*, 2009).

Since the topic selected for this study falls in the realm of public health and social psychology the need for ethical consideration emerges. Since mothers and children are considered as vulnerable population (WHO, 2005), there are heightened ethical concerns in performing an experimental study with direct involvement. A quasi-experimental design using a survey questionnaire was chosen to guide through the ethical framework. A paper questionnaire-based survey was chosen to alleviate unnecessary ethical concerns. As per the Standard Operating Procedure (SOP) published by DOH, this study comes under the preview of clause 2.4. Based on the recommendation the study was submitted to DOH for ethics review and was exempted from full review. Considering the nature of study, it was advised to pursue hospital's Research Ethics Committee's approval. A DOH approved hospital was selected to conduct the research.

In the absence of a well-tested research tool to access breastfeeding knowledge and the factors that modulates breastfeeding knowledge in middle eastern population, a questionnaire was adapted from the concepts of similar studies done in Saudi Arabia (Orabi et al, 2017) and UAE (Al Ketbi et al., 2018). Inputs from neonatologists and lactation consultant were obtained to ensure the clinical robustness of questions to measure the knowledge. A total of 18 questions was developed in 5-point Likert Scale. An additional 19 questions were added as objective questions to focus on the breastfeeding factors identified in literature review and from conceptual framework. Participants also had an option to complete two qualitative questions to express their view on breastfeeding. Each

questionnaire took around 25 minutes to fill out and were provided to participants in Arabic or English as per their language preference.

All mothers who are visiting the OBGYN clinic in NMC hospitals in Emirate of Abu Dhabi was the targeted population. All NMC hospitals are homogenous in their management style and their quality practices as they fall under the same corporate management. Study cohort included all nationalities, age, and socio-economic groups visiting NMC facilities from June 2019 to November 2019.

Inclusion and exclusion criteria in research define who can and can't participate in a research study sample. The inclusion criteria in research study ensures that the study population selected is consistent, reliable, uniform and is objective in nature. The exclusion criteria in a research separate the population that does not falls under the scope of study topic.

Inclusion criteria

1. All women visiting the OBGYN clinics in NMC facilities in Abu Dhabi
2. All women who gave birth to a live infant
3. Is willing to participate
4. All women above age of 18 years
5. All women who are legally married
6. All women who are breastfeeding

Exclusion criteria

1. All women who had no live born
2. All women, whose baby has died within the first 48 hours of birth
3. All women who are under the age of 1 years
4. All women who are not legally married
5. All women not attending OBGYN clinics in NMC Abu Dhabi Hospitals
6. All women who are not breastfeeding

As per Abu Dhabi Statistical Center report published on 2018, there is an estimated number of 1,050,555 females in Abu Dhabi. As per the equation (Sample size= (Distribution of 50%) / ((Margin of Error% / Confidence Level Score)²), the recommended sample size for this study would be 384 with a confidence level of 95% and margin of error percentage at 5%. The data from the responses were analyzed using descriptive statistics for sociodemographic data. Impact of knowledge and other modulating factors was analyzed using both inferential and descriptive statistics. Chi square-test (χ^2) and

ANOVA was used to establish relationships. Thematic analysis was used to analyze qualitative data.

Results and discussions

A total of 384 completed questionnaires were analyzed. The mean age of the participants were 29 years, while the age group with highest participation was between 25-29 years with a representation of 36% (Table 1). All participants in the study is residing in the Emirate of Abu Dhabi and was visiting OBGYN department of NMC hospitals as a part of their healthcare management. Large proportion (65%) of mothers attending study were working women. Employment commitments have been tied in with the ability of mothers to breastfeed.

For the purpose of the study, employment was grouped into unemployed, employed and self-employed mothers. Self-employed women may be a freelancer or have been running small business. Employed women were further classified based on their employer as government, semi-government and private workers.

By law government employees enjoys great support for childcare than private workers. Governmental institution offers three months' maternity leave in comparison to two months' maternity leaves offered in private institutions. As per Islamic culture it is the norm to have multiple kids. 61% of UAE families have 2 to 4 kids per household living with their parents. This is a typical representation of Arabic and Islamic culture.

Table 1. Age distribution of participants

Maternal Age	Frequency (f)	Percentage
18-24	73	19%
25-29	139	36%
30-34	120	31%
35-39	52	14%
40-45	0	0%

Note. The table denotes the age distribution of participants attending the study. A total of 384 participants completed the survey.

The preferred mode of delivery for UAE mother are normal vaginal delivery (73%). Women undergoing delivery may either birth naturally or with assisted instrumental deliveries (See table 4.11). Normal delivery traditionally is considered as healthy for the baby and

breastfeeding practice. Majority of mothers' gain their breastfeeding knowledge through nurses (97%), doctors (85%) and families (63%) (see table 2).

Breastfeeding knowledge have been cited in researches as modulating factor. The most influencing reason for UAE mothers to breastfeed is the understanding of health needs of the child. 90% of the mothers understand the importance of breastmilk. The second most influencing factor is religious teaching. As an Islamic country, it teaches the women to breastfeeding their newborn up to the age of two years. 80% of women participated in this study had a comfortable delivery with no complications, while 59% of them sought pain relieving measures such as epidural. As per the literature review, epidural is considered as an inhibiting factor on breastfeeding.

Table 2. Distribution of patient based on their source of knowledge

Source of Breastfeeding Information	Frequency (f)	Percentage
Doctors	325	85%
Nurses/Midwives	371	97%
Friends	119	31%
Family	241	63%
TV	23	6%
Campaigns	0	0%
Magazines	0	0%
Breastfeeding Classes	82	21%
Internet	17	4%
Lactation Consultant	264	69%

Note: This table denotes the distribution of participants based on their source of knowledge related to breastfeeding.

Based on the response of participants on breastfeeding knowledge questionnaire, 215 women (56%) presented with a better breastfeeding knowledge, while 169 women presented with suboptimal knowledge (44%). Statistical correlation of observed means scores with expected mean score provided a P value of 0.001 on Chi square (χ^2). A series of factors affecting knowledge was analyzed from the responses in the questionnaire to understand the effect of personal and environmental factors. The mean score of breastfeeding knowledge was

compared with their educational preparedness. Educational preparedness has a significant relation with breastfeeding knowledge as evidenced by a P value of 0.00023. Maternal age influenced maternal breastfeeding knowledge (P = 0.0012). Highest mean average of knowledge was found between mothers of age 25-29, while lowest mean of knowledge was observed between mothers of 35-39 years old.

Maternal education has a significant correlation to breastfeeding knowledge (P=0.00023). Mother with university education has the highest mean score of 162 compared to mothers educated to primary or high school level. Higher education level also paves for higher employment rate. Employment rates and the employer also influence breastfeeding knowledge (P= 0.00037) & (P= 0.00225). Salaries have a strong correlation with breastfeeding knowledge (P =0.00001). The number of children also increases the breastfeeding knowledge of mothers (P =0.0030), while there is no correlation between gender of child (P =0.1), gestation age of the child (P = 0.12) and mode of delivery (P= 0.2) with breastfeeding knowledge. There is no correlation between breastfeeding hours (P = 0.125) and living condition (P=0.223). Based on the response from participants in study, the sources of breastfeeding knowledge are depicted on table 3.

Table 3. Relation of various factors affecting knowledge and attitude

Parameters	Knowledge
	P Value
Maternal Age	0.001
Educational Preparedness	0.0002
Employment	0.0004
Employer	0.003
Salaries	0.00001
Number of Children	0.003
Gender of Child	0.14
Gestational Age	0.12
Mode of Delivery	0.2
Breastfeeding hours	0.125
Living conditions	0.223

Note: The table denotes the relation of various factors being analyzed in this study with knowledge and attitude along with their respective P value.

Conclusion

This study presents with pertinent data related to the impact of knowledge and factors that modulates breastfeeding knowledge among the breastfeeding mothers in Abu Dhabi, UAE. This study concludes that the mothers in UAE maintains a satisfactory breastfeeding knowledge towards breastfeeding. The findings in this study was congruent with other similar studies conducted in UAE. Though the mothers were knowledgeable on breastfeeding, majority of the participating mothers favored or practiced mixed methods feeding. The choice of mixed methods feeding was related to employment related constraints. Mothers lacked privacy, milk storing facilities and periodic breaks to pump milk along with appropriate breastfeeding support from the employer and family. These factors compel the mothers to adapt mixed method feeding practices to keep up with their other professional and social responsibilities.

This study had its own limitations. Firstly, this study selected all mothers who are breastfeeding without any restriction of the age of the child. This may have added a recall bias in women and they might have answered the questions based on their current context. In summation, the experience of women might be different based on their context, which was not analyzed in this study. Secondly, UAE is multicultural society with representation from around the world. Hence, the generalizability of this study may be limited to the population of UAE considering the adequate representation of all ethnicity. However, considering the sample size within the emirate of Abu Dhabi, the study can be generalized for mothers in Abu Dhabi, without considering their colloquial influences. Since the data collection methodology was questionnaire based only predetermined factors were analyzed in this study. A behavioral research is best analyzed qualitatively rather than selecting a quantitative approach. Because of the limitation in data collection approach, women have not opened up on any socially less acceptable behavior like sexuality and body image factors. Rather most factors addressed in this study was areas where women are vulnerable and helpless based on their context. It would have been appropriate to analyze the effect of knowledge and attitude in formula feeding and exclusive breastfeeding mother to

draw a better correlation on the effect of knowledge and attitude on breastfeeding.

The findings of this research suggest the need of analyzing a number of other areas to understand the suboptimal breastfeeding practices in Abu Dhabi. A separate study needs to be conducted on the effectiveness of BFHI initiatives among breastfeeding mothers in Abu Dhabi. It would be recommended to study its effect between the mothers giving birth in BFHI accredited and non-accredited hospitals. A qualitative study on formula feeding mothers will help to understand their mindset for avoiding breastfeeding. It can be argued based on this study that women have expressed formula feeding was necessity not a choice.

Appendix

Appendix 1. Graphical representation of the conceptual framework for the study

MACROENVIRONMENTAL FACTORS				
Microenvironmental factors				LAW & REGULATION
Personal Factors			Birth environment	
BREAST FEEDING BEHAVIOR	Infant Factors	Maternal Factors		
	Infant health	Education		Work environment
		Attitude		
	Early rooming in	Knowledge		Family environment
		Breastfeeding skills		
	Latching ability	Parenting experience		Community environment
		Birth experience		
	Gestational age	Maternal health		Other factors
	Pain			
	Maternal Intend to breastfeed			
	Perceived Behavioral Control			

The figure is a graphical representation of factors affecting breastfeeding practices. The figure attempts to explain multiple levels of factors affecting breastfeeding behavior.

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However, the sample in this study were breastfeeding mother who were also practicing mixed methods feeding.

Summary

Breastfeeding is an important concept. The success of breastfeeding campaign or further researches can be potentiated by understanding various factors that contributes to breastfeeding. This study focused on the concept of knowledge and the factors that modulates knowledge among breastfeeding mothers. The success of breastfeeding program in the emirate of Abu Dhabi depends on the holistic understanding of all factors affecting breastfeeding.

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