# Perceived barriers to the implementation of a baby friendly initiative in Jeddah, Saudi Arabia

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## ABSTRACT

**الأهداف:** جمع البيانات عن تصورات وموقف المجتمع المحلي من الرضاعة الطبيعية وهذه هي المرحلة الأولى من مشروع مبادرة صداقة الطفل لتشجيع الرضاعة الطبيعية.

**الطريقة:** أُجريت هذه الدراسة المقطعية في المركز الطبي الدولي، جدة، المملكة العربية السعودية وذلك خلال الفترة من إبريل 2011م إلى يونيو 2011م. لقد قمنا باستخدام استبيان منظم مكون من أسئلة مغلقة النهايات.

**النتائج:** لقد أجابت 120 مشاركة على الاستبيان (معدل الإجابة: 100%). لقد وجدنا أنه من أكثر العوائق للرضاعة الطبيعية عند تقريبا ثلث الأمهات هي كالتالي: عدم توفر المعلومات الكافية عن الرضاعة الطبيعية وأهميتها، والانطباع الخاطئ بأن حليب الأم المرضعة لا يكفي لإشباع الطفل، وسهولة توفر الحليب الصناعي في المجتمع وسهولة استخدامه عند الأم بعد الولادة. ومن المثير للدهشة أنه كلما ازدادت ثقافة الأمهات أو مركزهن الاجتماعي كلما قلت معلوماتهن عن الرضاعة الطبيعية وأهميتها. كما أن الأمهات اللواتي أنجبن من قبل و لديهن أكثر من طفل قد يشعرن بأن الحليب لديهن أقل من حاجة الطفل. وأفادت 43% من المجيبات على الاستبيان بوجود أكثر من مانع أو عائق للرضاعة الطبيعية.

**خاتمة:** سوف تفيدنا هذه الدراسة المقطعية بأن ترشدنا لتصحيح المفهوم الخاطئ عن الرضاعة الطبيعية، ووضع إستراتيجية فعالة ومصممة خصيصاً للمجتمع المحلي لتنفيذ مشروع مبادرة صداقة الطفل لتشجيع الرضاعة الطبيعية في المجتمع السعودي.

**Objectives:** To collect data about perceptions and attitudes regarding breastfeeding in the local community and is intended as the first phase prior to the implementation of the baby friendly initiative (BFI).

**Methods:** A cross-sectional study was conducted at the International Medical Center, Jeddah, Kingdom of Saudi Arabia between April 2011 and June 2011, using a structured and closed-ended questionnaire.

**Results:** One hundred and twenty women responded (100% response rate) in the study. The most commonly cited barriers to breastfeeding in approximately one-third of women included: lack of knowledge about breastfeeding, false impressions about inadequate quantities of breast milk produced by lactating women, and ease of use and liberal availability of formula within the community after birth. Surprisingly, more educated women and those with higher income prove to have less knowledge about breastfeeding. Women who had 2 or more previous pregnancies were less confident about their ability to produce enough milk for their babies. Thirty-four percent of the respondents reported more than one deterrent to breast feeding.

**Conclusion:** The results of the survey will serve as a guide to correct misconceptions about breastfeeding and effectively strategize the implementation of a local BFI tailored to the characteristics of our community.

***Saudi Med J 2012; Vol. 33 (8): 895-900***

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*Received 26th May 2012. Accepted 18th July 2012.*

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Breastfeeding is the logical and optimal nutrition for babies especially in their first months of life. A myriad of research studies have confirmed the benefits of breastfeeding.[1-4] However, the practice of breastfeeding is faced with many challenges. Millions of babies are denied this natural right for a variety of reasons. The World Health Organization (WHO) and

The United Nations Children's Fund launched the baby friendly initiative (BFI) in 1991 to promote, protect, and support breastfeeding especially during the crucial early days of life. Although the 10 steps required for accrediting hospitals as baby friendly are clear, the implementation of the initiative should be molded and individualized to local community hospitals to achieve the best results.[5]

Several socioeconomic factors come into play when women choose how to feed their babies. Saudi society shares in several potential barriers to effective breastfeeding. Moreover, there have been some changing trends over the past few decades. The percentage of women who breastfeed exclusively is declining in favor of mixed and formula-feeding.[6-9] Prior to the year 2003, breastfeeding rates in the first year of life in the Middle East, ranged from 40-90%,[7-10] but thereafter there appears to be a steady fall off in the rates of exclusive breastfeeding to 1.7-58% with a trend supporting partial breast and formula-feeding.[10-16] The present cultural norms of introducing mixed feeding regimens early after birth are driven by several factors such as mode of delivery, freely available formula, parity, occupational status, contraceptive use, and timely initiation of breast feeding.[8,13,15] However, few hospitals are trying to adopt the BFI despite these challenges. It is imperative to have a clear plan at the start of the project to fully achieve the desired objectives and raise public awareness about the practice of breastfeeding.

Since data about potential barriers to breastfeeding in the local environment have not been previously explored, the survey is intended as the first phase prior to the implementation of a hospital-wide BFI. The primary objective is to evaluate perceptions and attitudes regarding breastfeeding, and if these are related to the demographics of the respondents.

**Methods.** A pilot, cross-sectional survey was conducted from April 2011 to June 2011 on all women in the postpartum obstetric ward at a single center in Jeddah, Kingdom of Saudi Arabia, irrespective of parity. Subjects were recruited immediately after delivery, before breastfeeding was initiated. No exclusion criteria were applied. All participating women (100% response rate) completed the structured and closed-ended questionnaire, after signing an informed consent that was pre-approved by the institutional research ethics board. The questionnaire was developed by the investigators and comprised 20 items that were previously ascertained from the scientific literature as having relevance in the Saudi population[6-20] and from the feedback provided by the hospital lactation consultants. Items explored in the survey included age, parity, mode of delivery, income in Saudi Arabian Riyal (SAR), level of education, occupation, smoking habits as well as family support and personal knowledge of breastfeeding. One primary investigator (Zagoot E) and the hospital lactation advisor recruited women for the survey and were fully familiar and knowledgeable with regard to the questionnaire items. If any ambiguities were identified, assistance was sought from the investigator either through an on-site face to face discussion or by timely telephone contact. All ambiguities were also addressed among the co-investigators in order to both standardize the approach across surveys and members of the research team. This facilitated survey completion and optimized the quality of the responses. Household income was categorized as low (<5,000 SAR), moderate (5,000-10,000 SAR) and high (>10,000 SAR).

Since this was a pilot study, a convenient sample was selected; therefore, an a priori decision of a specific sample size could not be made based on a power calculation of a hypothesis test or effect size. Descriptive statistics were utilized to analyze the reported barrier variables among participating mothers and are reported as percentages in the respective tables. Associations between demographic features and perceived breastfeeding barriers were examined in a bi-variate analysis. All descriptive statistics, frequencies, and cross-tabulation analyses were performed with the statistical software package IBM SPSS® Version 19.0 (SPSS Inc, Chicago, IL, USA, 2010).

**Results.** One hundred and twenty mothers completed the questionnaire. **Table 1** shows the distribution of the perceived barriers to breastfeeding across the women surveyed. Over 90% of mothers were aged 20-35 years and their demographic characteristics relative to the perceived breastfeeding barriers are outlined in **Tables 2 & 3**.

Eighty (67%) women reported a single perceived barrier to breast feeding, 22 (18%) documented 2 barriers and 18 (15%) reported that 3 or more barriers were influential in the decision to adopt this feeding strategy. Cumulatively, 33% of women indicated the presence of more than one potential barrier and these are categorized and reported as "multiple barriers"

**Disclosure**. Authors have no conflict of interests, and the work was not supported or funded by any drug company.

**Table 1 -** Overall perceived barriers to breast feeding among 120 surveyed women.

| Barriers to breast feeding | Frequency (%) |
|---|---|
| Formula is easy to use and more available soon after birth | 40 (33.3) |
| Lack of adequate knowledge about breast feeding | 40 (33.3) |
| Multiple barriers | 40 (33.3) |
| Breast feeding will not provide enough milk | 36 (30.0) |
| Breast feeding causes unappealing changes in breast shape | 30 (25.0) |
| Cultural and environmental factors | 16 (13.3) |
| Formula contains more nutritional value than breast milk | 5 (4.2) |
| Total percentage exceeds 100% because of multiple barriers reported by individual women | |

in Tables 2 & 3. The most cited barriers to exclusive breastfeeding were lack of sufficient knowledge (33.3%) and the perception that formula-feeding is easier to establish and more available soon after birth (33.3%). Thirty percent of respondents thought that breastfeeding would not provide an adequate supply of milk for their babies, but almost 50% of women concurrently documented an inability to assess breast milk sufficiency or signs of infant satiety post feeding and a similar percentage were unfamiliar with the technique of milk expression. The varied positions to facilitate breast-feeding were unknown in 53% of the women. Concern over changes in breast shape and

**Table 2 -** Perceived barriers to breastfeeding compared according to demographic characteristics of age-group, parity, and mode of delivery.

| Demographic characteristics | Number of respondents | Barriers to breast feeding | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Lack of knowledge about breastfeeding | | Lack of family support | | Cultural/ environmental factors | | Unappealing change in the shape of the breast | | Breastfeeding will not provide enough milk | | Formulae contain more nutritional value than breast milk | | Formula is easy and more available soon after birth | | Multiple barriers | |
| *Age in years (n=120)* | | | | | | | | | | | | | | | | | |
| <20 | 1 (0.8) | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 1 | (2.5) |
| 20-35 | 109 (90.8) | 20 | (90.9) | 4 | (80.0) | 6 | (100.0) | 10 | (100.0) | 14 | (100.0) | 2 | (100.0) | 19 | (90.5) | 34 | (85.0) |
| >35 | 10 (8.3) | 20 | (9.1) | 10 | (20.0) | 0 | | 0 | | 0 | 0 | 0 | | 2 | (9.5) | 5 | (12.5) |
| *Parity (n=120)* | | | | | | | | | | | | | | | | | |
| Primigravida | 55 (45.8) | 11 | (50.0) | 1 | (20.0) | 2 | (33.3) | 8 | (80.0) | 3 | (21.4) | 2 | (100.0) | 12 | (57.1) | 16 | (40.0) |
| Multipara | 65 (54.2) | 11 | (50.0) | 4 | (80.0) | 4 | (66.7) | 2 | (20.0) | 11 | (78.6) | 0 | | 9 | (42.9) | 24 | (60.0) |
| *Mode of delivery (n=120)* | | | | | | | | | | | | | | | | | |
| Vaginal | 83 (69.2) | 14 | (63.8) | 4 | (80.0) | 3 | (50.0) | 6 | (60.0) | 11 | (78.6) | 2 | (100.0) | 14 | (66.7) | 29 | (72.5) |
| Caesarean | 37 (30.8) | 8 | (36.4) | 1 | (20.0) | 3 | (50.0) | 4 | (40.0) | 3 | (21.4) | 0 | | 7 | (33.3) | 11 | (27.5) |
| Data are expressed as number and percentage (%) | | | | | | | | | | | | | | | | | |

**Table 3 -** Perceived barriers to breastfeeding compared according to level of education, occupation, income and smoking habit.

| Demographic characteristics | Number of respondents | Barriers to breast feeding | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Lack of knowledge about breastfeeding | | Lack of family support | | Cultural/ environmental factors | | Unappealing change in the shape of the breast | | Breastfeeding will not provide enough milk | | Formulae contain more nutritional value than breast milk | | Formula is easy and more available soon after birth | | Multiple barriers | |
| *Level of education (N=120)* | | | | | | | | | | | | | | | | | |
| Below high school | 8 (6.7) | 0 | | 0 | | 0 | | 0 | | 1 | (7.1) | 0 | | 0 | | 7 | (17.5) |
| High school | 76 (63.3) | 10 | (45.5) | 3 | (60) | 5 | (83.3) | 4 | (40.0) | 10 | (71.4) | 0 | | 20 | (95.2) | 24 | (60.0) |
| College | 29 (24.2) | 9 | (40.9) | 2 | (40) | 1 | (16.7) | 5 | (50) | 2 | (14.3) | 1 | (50) | 1 | (4.8) | 8 | (20.0) |
| Higher education | 7 (5.8) | 3 | (13.6) | 0 | | 0 | | 1 | (10) | 1 | (7.1) | 1 | (50) | 0 | | 1 | (2.5) |
| *Occupation (n=120)* | | | | | | | | | | | | | | | | | |
| Housewife | 94 (78.3) | 17 | (77.3) | 5 | (100) | 6 | (100.0) | 6 | (60) | 9 | (64.3) | 2 | (100) | 15 | (71.4) | 34 | (85.0) |
| Working | 26 (21.7) | 5 | (22.7) | 0 | | 0 | | 4 | (40) | 5 | (35.7) | 0 | | 6 | (28.5) | 6 | (15.0) |
| *Income Saudi Riyals (n=120)* | | | | | | | | | | | | | | | | | |
| <5,000 | 33 (27.5) | 2 | (9.1) | 0 | | 1 | (16.7) | 3 | (30) | 7 | (50.0) | 2 | (100) | 7 | (33.3) | 1 | (32.5) |
| 5,000-10,000 | 65 (54.2) | 12 | (54.5) | 3 | (60) | 3 | (50.0) | 5 | (50) | 6 | (42.9) | 0 | | 12 | (57.1) | 2 | (55.0) |
| >10,000 | 22 (183.2) | 8 | (36.4) | 2 | (40) | 2 | (3.3) | 2 | (20) | 1 | (7.1) | | | 2 | (9.5) | 1 | (12.5) |
| *Smoking* | | | | | | | | | | | | | | | | | |
| Non-smokers | 112 (93.3) | 20 | (90.9) | 4 | (80.0) | 6 | (100.0) | 10 | (10) | 14 | (100.0) | 2 | (100) | 19 | (90.5) | 37 | (92.5) |
| Smokers | 8 (6.7) | 0 | (9.1) | 1 | (20) | 0 | | 0 | | 0 | | 0 | | 2 | (9.5) | 3 | (7.5) |
| Data are expressed as number and percentage (%) | | | | | | | | | | | | | | | | | |

disfigurement with breastfeeding caused 25% of the study sample to favor formula-feeding. Approximately 4% of the women believed that formula was superior to breast milk regarding its nutritional value and 23% had neither knowledge about colostrum nor the benefits of consuming colostrum.

Further analysis of the barriers showed that these differed according to certain demographic characteristics. Surprisingly, more highly educated women were less informed about breastfeeding and this was more prevalent in those with higher family income. Working mothers were more concerned about alterations in breast contour than housewives. Primigravida women were more likely than multigravida to consider formula-feeding easier and more readily available soon after birth. Overall, 96% of the study participants recognize that breastfeeding is beneficial for both the mother and child and 72% reported a desire to breastfeed exclusively for more than 6 months

**Discussion.** Perceived barriers to breastfeeding may vary among different communities. Saudi women are influenced by different cultural and societal factors. Further challenges to the adoption of breastfeeding arise from the modernization of the Saudi society and the increasing numbers of working mothers.[6-9]

Our survey shows an alarming lack of knowledge about breastfeeding which perhaps stems from a limited desire to attend antenatal classes on breastfeeding (92%) and an already pre-planned decision to institute mixed or exclusive formula-feeding both pre (49%) and post delivery (55%). Furthermore, misconceptions and flawed information additionally may compound difficulties in the introduction of a baby friendly initiative in Saudi hospitals. One third of mothers in our sample lacked knowledge about breastfeeding. The additive component of erroneous information increases the prevalence of fallacies about breastfeeding to almost two thirds of women enrolled in the survey. The study conducted by Alwelaie et al[11] in 2010, revealed that almost half of Saudi women in the central area of the country had not received antenatal or perinatal education about breastfeeding. Women aged greater than 35 years indicated more lack of family support for breastfeeding than younger mothers.

An interesting finding among study participants was that knowledge about breastfeeding was more deficient in women who had received higher education and those with higher family income. This is contrary to the trend in most developed countries where lower levels of education and income were associated with less knowledge and practice of breastfeeding.[21,22] However, a Saudi study reported that better educated women were more likely to be employed and were more likely to select formula-feeding as a favorable choice and similar findings were also reported in Jordan and other Middle Eastern countries.[11-13,17] These studies concluded that the challenges imposed on working mothers were the main culprit leading to failure of breastfeeding. The failure may in part be due to the limited 40-60 days postpartum maternity leave of absence from work, granted to employed women in the country, compared to the average of 6 months in industrialized nations or that women perhaps are not provided with a conducive environment and amenities for breastfeeding in the workplace. Our findings highlight a different aspect which is the paradoxical lack of proper knowledge of breastfeeding in the more highly educated and economically privileged participants as the root of the problem. This needs further analysis to gain an in-depth appreciation of this behavioral pattern. It may reflect a lack of enthusiasm to seek adequate knowledge about breastfeeding and opting for the misconceived choice of "readily available" formula as an undemanding way out instead of pursuing constructive information on breastfeeding. Other reasons may include conforming to the social norm and practices of working mothers, yielding easily to peer pressure when breastfeeding is failing or lack of hierarchy support in the office environment.

A common practice of Saudi women is to give formula to their babies on the first day after delivery so that they can "rest" and recover postpartum. This trend is usually encouraged by immediate family such as maternal mothers' and mothers-in-law especially when babies start to cry presumably for feeds.[14] Another one third of mothers in our study identified this as a pertinent issue. Al-Hreashy et al[15] documented that 46% of Saudi women introduced formula to their babies on the first day of life and that this practice led to shortening of the duration of breastfeeding. In some countries, sugar water is commonly used to initiate feeds,[23] but not in Saudi Arabia where ready to feed or conventional formula is more likely to be used because it is easily accessible in the hospital setting. Primigravida were more concerned about unappealing changes in breast shape than multigravida. Most of them also thought that formula-feeding is easier and more available after birth than breastfeeding. This behavioral pattern is not different from the findings reported in other studies. On the other hand, multiparous women were much less confident that they would have enough breast milk to satisfy their babies. This was another unexpected finding

in mothers' who were surveyed. It seems that lack of proper education and support perhaps led to difficulties with prior breastfeeding that made them less confident in their ability to produce enough milk to meet their babies' needs.

There was more than one barrier identified in a significant percentage (34%) of respondents. A single mother below the age of 20 years, half of those aged above 35 years, and almost one third of remaining mothers perceived multiple barriers to breastfeeding. Over 85% of women whose education was less than high school had multiple barriers. The percentage declined gradually with increasing level of education to approximately 15% in the category with higher education. This reflects the challenges that women with lower level of general education face with breastfeeding as reported in different studies.[17-20] Surprisingly, this was not related to the knowledge about breastfeeding as already described. A similar but less prominent trend was noticed in relation to income. In the other categories, presence of multiple barriers ranged from one fifth to one third and was somewhat comparable within the subgroups.

***Study limitations.*** There are several limitations of this study. The survey was not piloted prior to use and the small, convenient sample size restricts our ability to critically analyze the statistical significance of the perceived barriers to breastfeeding. We cannot exclude potential biases such as the possibility of some social desirability to participate in the study which may have impacted the survey responses. The structured questionnaire limits our capability to explore additional perceived existing barriers that were not tapped in the survey. The importance of the various barriers was not ranked and the motivators for choosing the different barriers are likely quite different among women that may impact the strategies for the proposed BFI plans. Moreover, the sample size confines our capacity to compare data on multiple barriers such as "the ease of formula-feeding" and "unappealing breast changes" versus "insufficient milk supply" and "lack of breastfeeding support". Lastly differences between the co-investigators administering the survey and the site of subject recruitment could influence the survey results. Positive assets of the study include; a one-time rather than multiple completions of the same survey which could skew the findings; minimal selection bias ensured through a 100% response rate; the use of all inclusive participant criteria; and internal consistency of the responses to the survey items supported by 2 trained individuals.

In general, the practices of infant feeding in Saudi Arabia in the majority do not align with WHO recommendations.[18] The role of hospitals should be to enhance and reinforce the baby friendly initiative in order to increase the rate and duration of breastfeeding. Identifying the local attitudes and perceptions regarding breastfeeding will help tailor consultations provided to mothers on breastfeeding and address their specific concerns.

In conclusion, this study identified a disparity between the majority of study participants who recognized that breastfeeding is beneficial for both the mother and her child and expressed a desire to engage in this practice but perceived that this goal was not easily achievable. Lack of information and false notions about the benefits of breastfeeding coupled with easy accessibility to formula in the postpartum hospital setting, are the most common reported barriers to successful breastfeeding in Saudi mothers. A paradoxical lack of proper knowledge regarding breastfeeding in the more highly educated and economically privileged participants is currently prevalent within the community. The first phase of this study has nucleated the key perceived barriers in the establishment of a comprehensive breastfeeding program that need to be initially addressed before the implementation of a robust BFI initiative. The mothers enrolled in our study will be followed up in the future and will be re-surveyed after the hospital's baby friendly initiative project has been established, to assess the rate of exclusive breastfeeding, and the efficacy of the breastfeeding education maneuver.

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