Research Article

Newborn First Feed and Prelacteal Feeds in Mansoura, Egypt

Abdel-Hady El-Gilany and Doaa M. Abdel-Hady

Faculty of Medicine, Mansoura University, Mansoura 35516, Egypt

Correspondence should be addressed to Abdel-Hady El-Gilany; ahgilany@gmail.com

Received 13 February 2014; Accepted 25 April 2014; Published 6 May 2014

Academic Editor: Seth Owusu-Agyei

Copyright © 2014 A.-H. El-Gilany and D. M. Abdel-Hady. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Background. Prelacteal feed (feeding any other substance before first breastfeeding) appears to be common despite its harmful effects. By definition a child provided with prelacteal feed (PLF) is not exclusively breastfed and PLF has many implications for the success and early initiation of breastfeeding. Objectives. To describe the prevalence of, nature of, and reasons for and factors associated with PLF.

Methods. 647 mother-infant dyads were studied. Data was collected about the sociodemographic features of the family and baby, maternity care, the type of first feed before suckling, and causes of PLF. Maternal weight and height were measured and body mass index was calculated. Results. About 58% of newborns received prelacteal feeds. The most common PLF was sugar/glucose water (39.6%). The most frequent reasons for giving PLF are tradition (61.0%) and mother’s/mother in law’s advice (58.3%). The logistic regression revealed that the independent predictors of PLF are urban residence; maternal education; father’s education; low, middle, and high social class; maternal obesity; receiving antenatal care at private clinics and no antenatal care; Caesarean section; female babies; low birth weight; and admission to neonatal intensive care.

Conclusion. Indiscriminate use of PLF should be discouraged in medical education and in antenatal maternal health education.

1. Introduction

The feeding of newborns has implications for immediate and future health. Colostrum is highly nutritious and immunogenic [1, 2]. However, its avoidance has been reported across the globe and prelacteal foods (PLFs) are introduced when breastfeeding is delayed [3]. PLFs are these foods given to newborn before breastfeeding is established or before breast milk “comes in,” usually on the first day of life [4, 5]. WHO and UNICEF summarized the ten steps to successful breastfeeding: these steps include prohibiting prelacteal feeding [6, 7].

Newborns are given PLF for different reasons including the following: to clean baby’s bowels, keep mouth and throat moist, keep baby warm, soothe the baby, relief pain, and allow stool to be passed [8, 9]. Some in the Muslim community use PLF in the first day following birth because of the belief that colostrum has little nutritional value, may be considered dirty, and can even be harmful [8]. They may give sugar or water to the newborn instead of colostrum [10].

PLF may lead to lactation failure, insufficient milk production, infection, diarrhea, and short duration of breastfeeding [11–14]. It is noticed that there is a vicious cycle between PLF and delayed breastfeeding initiation; thus, PLF may delay the production of breast milk and the perceived lack of breast milk may encourage the use of PLF [15]. For these reasons WHO/UNICEF discourages the use of PLF unless medically indicated [16].

Knowing the determinants of introduction of PLF is essential to promote exclusive breastfeeding and early initiation of breastfeeding [17, 18]. There are many studies on PLF during the first three days after birth and it is not clear whether these are first feed or not. To the best of the authors’ knowledge no studies were carried out in Egypt to describe the type of first feed given to the newborns. The objectives of this study are to describe the nature of the first feed as well as prevalence of, reasons for, and factors associated with prelacteal feeds (PLFs) in Mansoura, Egypt.

2. Material and Methods

This is a cross-sectional study done in Mansoura District during a period of 6 months (from July 1 to the end of December 2013). The target population is singleton newborns and their mothers. Mothers were interviewed during birth...
registration at the chosen health facilities. Birth registration usually takes place within the first week of birth.

Sample size was calculated online (https://www.dssresearch.com/KnowledgeCenter/toolkitcalculators/sample-sizecalculators.aspx). A pilot study on 50 newborns revealed that 50% received PLF other than colostrum in the first feed after birth. With a 5% precision, 5% alpha error, and 20% beta error the expected sample size should be 616 infants at least.

In the urban area 6 out of 11 health offices were selected. In the rural areas 19 out of 38 rural health units/family health units were selected. These were selected by systematic random sample from the lists of health offices and rural health units/family health units. The sample was distributed proportionally according to the number of registered births in each of the chosen facilities during the previous year. Trained nurses interviewed mothers during the birth registration and completed the questionnaire.

The questionnaire covered the sociodemographic data of the mother and her family, antenatal care, and place and mode of delivery. Infant’s birth order, sex, birth weight, and gestational age were recorded. Mother’s weight and height were measured according to standard precautions. Height was measured with a stadiometer accurate to 0.1 cm, with mother standing without shoes. Body weight was measured with calibrated electronic Seca scale (Seca Ltd., Birmingham, UK) accurate to 0.1 Kg, with subject wearing the lightest possible clothes. The BMI was calculated using the formula weight (in Kg)/squared height (in meters). BMI values were classified into two groups: normal weight and overweight/obese [19].

Social score of the family was calculated according to El-Gilany et al. (2012) [20]. This score encompasses parental education and work, family income, crowing index, household appliances and equipment, and usual source of health care. The total score was categorized into four levels of social classes.

Mothers were asked about the type of food/drink given to baby for the first time. If PLF other than colostrum was given, mothers were asked about the reasons for this practice.

The outcome variable is the prelacteal feed. It is defined as any food/liquid other than breast milk given to the infant before initiating breastfeeding for the first time [21, 22].

2.1 Ethical Consideration. The study was approved by both the ethical committee of College of Medicine, Mansoura University, and the local Health Directorate. Mothers gave informed verbal consent to participate in the study, before the interview.

2.2 Data Analysis. Data was analyzed using SPSS version 16. Variables were described as number and percent. In categorical variables $\chi^2$ test and unadjusted odds ratio (OR) were used for comparison between groups. Significant predictors of prelacteal feed in bivariate analysis were entered into a logistic regression using the forward Wald methods and adjusted odds ratio (AOR) was calculated. $P \leq 0.05$ was considered statistically significant.

### Table 1: Type of first feed, PLFs, and their reasons.

| Type of first feed       | Number | % of total | % of PLF |
|-------------------------|--------|------------|----------|
| Colostrum               | 273    | 42.2       |          |
| PLF                     | 374    | 57.8       |          |

| Type of PLF              | Number | % of total | % of PLF |
|-------------------------|--------|------------|----------|
| Sugar or glucose water   | 148    | 22.9       | 39.6     |
| Infant formula           | 107    | 16.5       | 28.6     |
| Herbs decoction*         | 81     | 12.5       | 21.7     |
| Animal milk diluted with water | 19   | 2.9        | 5.1      |
| Plain water              | 7      | 1.1        | 1.9      |
| Gripewater**             | 5      | 0.8        | 1.3      |
| Tea                      | 3      | 0.5        | 0.8      |
| Soft drinks              | 2      | 0.3        | 0.5      |
| Juices (fresh or canned) | 2      | 0.3        | 0.5      |

| Reasons for PLFs@         | Number | % of total | % of PLF |
|--------------------------|--------|------------|----------|
| Tradition/convention      | 228    | 35.2       | 61.0     |
| Mother’s/mother in law’s advice | 218 | 33.7       | 58.3     |
| Keeping mouth and throat moist | 209 | 32.3       | 55.9     |
| Lack of/delay in milk production | 179 | 27.7       | 47.9     |
| Advice of health care provider | 157 | 24.3       | 42.0     |
| Infant refused suckling   | 144    | 22.3       | 38.5     |
| Maternal exhaustion/illness | 112 | 17.3       | 29.9     |
| To clean infant’s gut/throat/mouth | 105 | 16.2       | 28.1     |
| Breast problems (e.g., mastitis, engorgement, and soreness) | 102 | 15.8       | 27.3     |
| To calm soothe the baby   | 94     | 14.5       | 25.1     |
| Colostrum is bad to baby  | 92     | 14.2       | 24.6     |
| Allowing stool to be passed | 89   | 13.8       | 23.8     |
| Infant sickness ICU admission | 86   | 13.3       | 23.0     |
| Nurture baby              | 73     | 11.3       | 19.5     |
| Keeping baby warm         | 16     | 2.5        | 4.3      |

* Such as cumin, caraway, cinnamon, aniseed, and chamomile.
** Commercial preparation for soothing colicky babies.
@ Categories are not mutually exclusive.
ICU: intensive care unit.

3. Results

Table 1 shows that 42.2% and 57.8% of newborns received colostrum and prelacteal feeds in the first feed, respectively. The commonest PLFs were sugar/glucose water (39.6%), infant formula (28.6%), and herbs decoction (21.7%). The most frequent reasons for giving PLF are tradition (61.0%), mother’s/mother in law’s advice (58.3%), keeping mouth and throat moist (55.9%), lack of delay in milk production (47.9%), and advice of health care provider (42.0%).

Table 2 shows that PLF is significantly more reported in urban than rural areas (OR = 3.5), with highly educated mothers (OR = 2.0 for secondary education and OR = 1.9
Table 2: Prelacteal feeding before first suckling according to maternal characteristics.

|                     | Total | Prelacteal feeding N (%) | P value | OR (95% CI)  |
|---------------------|-------|--------------------------|---------|--------------|
| Overall             | 647   | 374 (57.8)               |         | (54.0–61.6)  |
| Residence           |       |                          |         |              |
| Rural               | 393   | 183 (46.6)               | 1 (r)   |              |
| Urban               | 254   | 191 (75.2)               | ≤0.001  | 3.5 (2.4–5.0)|
| Mother’s age        |       |                          |         |              |
| < 20 years          | 279   | 171 (62.4)               | 1 (r)   |              |
| 20–<35 years        | 319   | 172 (53.9)               | 0.04    | 0.7 (0.5–0.99)|
| 35 and more         | 54    | 31 (57.4)                | 0.5     | 0.8 (0.4–1.5) |
| Mother’s education  |       |                          |         |              |
| < secondary         | 104   | 57 (54.8)                | 1 (r)   |              |
| Secondary           | 316   | 165 (52.2)               | 0.6     | 0.9 (0.6–1.4) |
| > secondary         | 227   | 152 (67.0)               | 0.003   | 1.7 (1.01–2.8)|
| Mother’s work       |       |                          |         |              |
| No                  | 502   | 293 (58.4)               | 1 (r)   |              |
| Yes                 | 145   | 81 (55.9)                | 0.6     | 0.9 (0.6–1.3) |
| Father’s education  |       |                          |         |              |
| < secondary         | 122   | 54 (44.3)                | 1 (r)   |              |
| Secondary           | 295   | 182 (61.7)               | 0.001   | 2.0 (1.3–3.2) |
| > secondary         | 230   | 138 (60.0)               | 0.005   | 1.9 (1.2–3.0) |
| Father’s work       |       |                          |         |              |
| Farmer/manual worker| 326   | 181 (55.5)               | 1 (r)   |              |
| Professional/employee| 192   | 119 (62.0)               | 0.2     | 1.3 (0.9–1.9) |
| Trades/business/others| 129   | 74 (57.4)                | 0.7     | 1.1 (0.7–1.7) |
| Family income       |       |                          |         |              |
| Sufficient          | 366   | 220 (60.1)               | 1 (r)   |              |
| Insufficient        | 281   | 154 (54.8)               | 0.2     | 0.8 (0.6–1.1) |
| Social class        |       |                          |         |              |
| Very low            | 226   | 98 (43.4)                | 1 (r)   |              |
| Low                 | 127   | 71 (55.9)                | 0.02    | 1.7 (0.49–2.6)|
| Middle              | 155   | 97 (62.6)                | ≤0.001  | 2.2 (1.4–3.4) |
| High                | 139   | 108 (77.7)               | ≤0.001  | 4.6 (2.8–7.6) |
| Maternal obesity    |       |                          |         |              |
| No                  | 267   | 128 (47.9)               | 1 (r)   |              |
| Obese/overweight    | 380   | 246 (64.7)               | ≤0.001  | 2.0 (1.4–2.8) |

OR: odds ratio; CI: confidence interval; r: reference group.

for higher education), in low, middle and high social classes (OR = 1.7, 2.2 and 4.6; respectively) and on obese/overweight mothers (OR = 2.0).

PLF is significantly more encountered among women who received antenatal care at private clinics (OR = 2.0) and those who never received antenatal care (OR = 4.1), with delivery in private clinic/hospitals (OR = 3.4), with Caesarean section (OR = 3.1), female infants (OR = 1.8), low birth weight and preterm (OR = 4.1 and 1.9, resp.), and among infants admitted to ICU (OR = 3.8) (Table 3).

The logistic regression revealed that the independent predictors of PLF are urban residence (AOR = 3.8); maternal education (AOR = 0.6 and 1.5 for secondary and higher education, resp.); father’s education (AOR = 3.0); low, middle, and high social class (AOR = 5.7, 24.3, and 33.8, resp.); maternal obesity (AOR = 1.7); receiving antenatal care at private clinics and no antenatal care (AOR = 11.7 and 3.8, resp.); Caesarean section (AOR = 2.1); female babies (AOR = 1.7); low birth weight (AOR = 4.2); and admission to neonatal intensive care (AOR = 3.5) (Table 4).

4. Discussion

The best practice in infant feeding is to put the infant at the breast as soon as practicable after delivery and to offer colostrum to the infant.

The practice of PLF is still common in Mansoura, Egypt. This study revealed that 57.8% of newborns were given different types of PLF as their first feed. This rate is intermediate among reported rates from previous studies. In Kuwait, PLF is the norm as 81.8% of infants receive PLF as their first feed [23]. In China 26% of hospital births were given formula,
Table 3: Prelacteal feeding before first suckling according to antenatal care, delivery, and infant's characteristics.

| Source of antenatal care          | Total  | Prelacteal feeding N (%) | P value | OR (95% CI) |
|----------------------------------|--------|--------------------------|---------|-------------|
| Primary health care              | 100    | 46 (46.0)                | 1 (r)   |             |
| Governmental hospital            | 76     | 34 (44.7)                | 0.9     | 0.95 (0.5–1.8) |
| Private clinics                  | 439    | 275 (62.6)               | 0.002   | 2.0 (1.2–3.1) |
| > one source                     | 14     | 5 (35.7)                 | 0.5     | 0.7 (0.2–2.3) |
| None                             | 18     | 14 (77.8)                | 0.01    | 4.1 (1.2–16.0) |

| Number of antenatal visits       |        |                         |         |             |
|----------------------------------|--------|--------------------------|---------|-------------|
| < 5                              | 158    | 86 (54.4)                | 1 (r)   |             |
| 5–9                              | 328    | 179 (54.6)               | 0.98    | 1.01 (0.7–1.5) |
| 10 and more                      | 143    | 95 (66.4)                | 0.03    | 1.7 (1.01–2.7) |
| None                             | 18     | 14 (77.8)                | 0.06    | 2.9 (0.9–11.1) |

| Place of delivery                |        |                         |         |             |
|----------------------------------|--------|--------------------------|---------|-------------|
| Home                             | 60     | 22 (36.7)                | 1 (r)   |             |
| Governmental hospital            | 191    | 89 (46.6)                | 0.2     | 1.5 (0.8–2.9) |
| Private clinic/hospital          | 396    | 263 (66.4)               | ≤0.001  | 3.4 (1.9–6.3) |

| Model of delivery                |        |                         |         |             |
|----------------------------------|--------|--------------------------|---------|-------------|
| Vaginal delivery                 | 440    | 218 (49.5)               | 1 (r)   |             |
| Caesarean section                | 207    | 156 (75.4)               | ≤0.001  | 3.1 (2.1–4.6) |

| Infant sex                       |        |                         |         |             |
|----------------------------------|--------|--------------------------|---------|-------------|
| Male                             | 348    | 179 (51.4)               | 1 (r)   |             |
| Female                           | 299    | 195 (65.2)               | ≤0.001  | 1.8 (1.3–2.5) |

| Birth order                      |        |                         |         |             |
|----------------------------------|--------|--------------------------|---------|-------------|
| First born                       | 244    | 154 (63.1)               | 1 (r)   |             |
| 2nd and 3rd                      | 333    | 186 (55.9)               | 0.08    | 0.7 (0.5–1.1) |
| 4th and more                     | 70     | 34 (48.6)                | 0.03    | 0.6 (0.3–0.98) |

| Low birth weight                 |        |                         |         |             |
|----------------------------------|--------|--------------------------|---------|-------------|
| No                               | 598    | 333 (55.7)               | 1 (r)   |             |
| Yes                              | 49     | 41 (83.7)                | ≤0.001  | 4.1 (1.8–9.6) |

| Preterm                          |        |                         |         |             |
|----------------------------------|--------|--------------------------|---------|-------------|
| No                               | 556    | 310 (55.8)               | 1 (r)   |             |
| Yes                              | 91     | 64 (70.3)                | 0.009   | 1.9 (1.1–3.1) |

| NICU admission                   |        |                         |         |             |
|----------------------------------|--------|--------------------------|---------|-------------|
| No                               | 575    | 315 (54.8)               | 1 (r)   |             |
| Yes                              | 72     | 59 (81.9)                | ≤0.001  | 3.8 (1.9–7.4) |

OR: odds ratio; CI: confidence interval; r: reference group; NICU: neonatal intensive care unit.

Most of the previous studies deal with PLF during the first three days after birth, irrespective of the nature of the first feed. Previous studies from Egypt reported PLF rates of 60% in a rural area [11]; 56% in Mansoura, the locality of the current study [25]; and 47% at the national level [26]. More or less similar rates were reported from Nigeria (56%) [27], Philippines (55%) [28], and Ethiopia (63%) [3]. Lower rates of PLF were reported from Libya (18.5%) [29], Uganda (31.3%) [30], Nepal (26.5%) [31], Kenya (26.8%) [32], Thailand (34.6%) [33], and India (33.3% up to 43.2) [14, 34–37].

A much lower rate was reported from Malawi (5.4%) [38] and much higher rates (96%) were reported from India [39–41] and Bangladesh (more than 92%) [42].

The independent predictors of PLF were urban residence; maternal education; father’s education; low, middle, and high social class; maternal obesity; receiving antenatal care at private clinics and no antenatal care; Caesarean section; female babies; low birth weight; and admission to neonatal intensive care. One or more of these predictors were reported from previous studies in different countries. The Egypt Demographic and Health Survey found that PLF was more reported in medically assessed delivery, delivery at private health facilities, but no variation was noticed with infant sex, residence, mother’s education and work status, or wealth quintiles [26]. In Uganda and Nepal regression analysis revealed that PLF was more with attending antenatal care, urban residence, Caesarean delivery, nonworking and noneducated mothers, less number of antenatal care visits, and first born babies [30, 31]. In China the independent predictors of PLF are NICU admission (AOR = 17.8) and high maternal education (AOR = 0.6) [24].
In different Indian studies PLF was more frequent in female babies and less educated mothers [14] and more in high income groups [41], in home births, and in illiterate mothers [36, 37]. In Malawi high PLF was reported in rural children and births outside health facilities [38]. In Nigeria PLF decreased with higher maternal education and high wealth [27]. In Philippines, PLF was more frequent in children of wealthier families and better educated mothers and children whose mothers were assisted by health professional practices in other regions of Egypt.

5. Conclusions

Although the Egyptian authorities have set breastfeeding policies consistent with international recommendations, many neonates are given PLF. PLF is still a factor to be targeted through educational intervention. Further education of the mothers and health staff about adverse effects of PLF during delivery [28]. These variations in the predictors of PLF necessitate each country to develop its own target population for intervention activities.

The commonest PLFs were sugar/glucose water, infant formula, and herbs decoction. This agrees with previous studies in Egypt where glucose, herbal drinks [2, 43] sugar water and teas [11] were the most frequently used prelacteal feeds. In many African countries including Libya [29], Kenya [32], Nigeria [27], and Nepal [31], sugar water, glucose, plain water, and infant formula were the commonest PLFs. These PLFs were also reported in Philippines [28]. However, in India and Bangladesh the common feeds were honey, herbs, sugar water, gripe water, and cow’s milk [34, 35, 37, 40–42]. This variation in the type of PLF between different countries could be attributed to the difference in culture, local beliefs, and availability of different feeds.

The most frequent reasons for giving PLF are tradition (61.0%), mother’s/mother in law’s advice (58.3%), keeping mouth and throat moist (55.9%), and lack of delay in milk production (47.9%). This reveals the role of traditions and the influence of relatives in widespread practice of PLF. It is important to notice that advice of health care provider is cited as a reason by 42% of mothers. This highlights the importance of medical and paramedical education and the continuation of in-service training in breastfeeding practice. Previous studies in Egypt found that lack of milk in mothers’ breast (74%), maternal exhaustion or illness following labor (29%) [11], and breastfeeding difficulties (engorgement, flat nipple, sore, and inflammation) were the commonest causes of PLF [26, 43]. A previous study in Nigeria found that about 70% and 27% of doctors and nurses prescribe PLF routinely and in special circumstances, respectively. Their reasons were perceived milk insufficiency, prevention of dehydration, hypoglycemia, and neonatal jaundice, and well as cleansing the baby’s gut and rest the mother [5]. Indian studies reported that PLFs were given to clean infants systems [40], being traditional belief as they considered colostrum thick, cheesy, indigestible, unhygienic, and not good for the baby [35]. In Bangladesh, tradition, child becoming normal and quiet, delayed milk suction, and clearing newborn’s oral cavity were the most cited reasons for giving PLFs [42]. All these reasons are amenable for prevention through appropriate education.

One of the strengths of this study is low possibility of recall bias as data was collected within few days after birth. There are several limitations that should be considered when interpreting the results of this study. We did not collect data about PLF during the first three days of life as most of the newborns were registered before this duration. Also the sample was restricted to newborns in Mansoura District and a large scale nationwide study is needed to document the practices in other regions of Egypt.
is required. It is important to emphasize the nutritional value of colostrum and misconceptions about PLFs through a culturally acceptable approach.

**Conflict of Interests**

There is no conflict of interests.

**References**

[1] M. H. Labbok, D. Clark, and A. S. Goldman, “Breastfeeding: maintaining an irreplaceable immunological resource,” *Nature Reviews Immunology*, vol. 4, no. 7, pp. 565–572, 2004.

[2] J. C. Kent, “How breastfeeding works,” *Journal of Midwifery and Women’s Health*, vol. 52, no. 6, pp. 564–570, 2007.

[3] N. L. Rogers, J. Abdi, D. Moore et al., “Colostrum avoidance, prelacteal feeding and late breastfeeding initiation in rural Northern Ethiopia,” *Public Health Nutrition*, vol. 14, no. 11, pp. 2029–2036, 2011.

[4] N. Laroiya and D. Sharma, “The religious and cultural bases for breastfeeding practices among the Hindus,” *Breastfeeding Medicine*, vol. 1, no. 2, pp. 94–98, 2006.

[5] R. M. Akuse and E. A. Obinya, “Why healthcare workers give prelacteal feeds,” *European Journal of Clinical Nutrition*, vol. 56, no. 8, pp. 729–734, 2002.

[6] C. Vallenas and F. Savage, *Evidenc for the Ten Steps to Successful Breastfeeding*, WHO Division of Child Health and Development, Geneva, Switzerland, 1998.

[7] WHO/UNICEF: Baby-Friendly Hospital Initiative, Revised and Expanded for Integrated Care, WHO/UNICEF & Wellstart International, Geneva, Switzerland, 2009.

[8] F. F. Fikree, T. S. Ali, J. M. Durocher, and M. H. Rahbar, "Newborn care practices in low socioeconomic settlements of Karachi, Pakistan," *Social Science and Medicine*, vol. 60, no. 5, pp. 911–921, 2005.

[9] F. U. Ahmed, M. E. Rahman, and M. S. Alam, "Prelacteal breastfeeding: influencing factors and relation to establishment of lactation," *Bangladesh Medical Research Council Bulletin*, vol. 22, no. 2, pp. 60–64, 1996.

[10] A. R. Gatrad and A. Sheikh, “Muslim birth customs,” *Archives of Disease in Childhood: Fetal and Neonatal Edition*, vol. 84, no. 1, pp. F6–F8, 2001.

[11] M. Moshaddeque Hossain, M. M. Radwan, S. A. Arafah, M. Habib, and H. L. DuPont, "Prelacteal infant feeding practices in rural Egypt," *Journal of Tropical Pediatrics*, vol. 38, no. 6, pp. 317–322, 1992.

[12] M. M. Hossain, R. R. Reves, M. M. Radwan, M. Habib, and H. L. DuPont, "The timing of breastfeeding initiation and its correlates in a cohort of rural Egyptian infants," *Journal of Tropical Pediatrics*, vol. 41, no. 6, pp. 354–359, 1995.

[13] WHO, *Hypoglycemia of the Newborn. Review of the Literature. WHO/CHD/97/1, WHO/MSM/97/1*, WHO, Geneva, Switzerland, 1997.

[14] T. Jagzape, A. Lohkare, J. Vagha, and B. B. Lakhkar, "Prevalence of prelacteal feeding practice in Wardha and the effect of antenatal education on it," *Pediatric Oncall 6*. Art#56, 2009.

[15] A. V. Athavale, S. A. Athavale, S. G. Deshpande, S. P. Zodpey, and S. Sangole, "Initiation of breast-feeding by urban women," *Health and Population: Perspectives and Issues*, vol. 27, no. 2, pp. 117–125, 2004.

[16] WHO/UNICEF, *Innocent Declaration on the Protection, Promotion and Support of Breastfeeding. Breastfeeding in the 1990s*. A Global Initiative, UNICEF, New York, NY, USA, 1990.

[17] M. Ulak, R. K. Chandyo, L. Mellander, P. S. Shrestha, and T. A. Strand, "Infant feeding practices in Bhaktapur, Nepal: a sectional, health facility based survey," *International Breastfeeding Journal*, vol. 7, article 1, 2012.

[18] T. S. Chandrashekhar, H. S. Joshi, V. S. Binu, P. R. Shankar, M. S. Rana, and U. Ramachandran, "Breast-feeding initiation and determinants of exclusive breast-feeding—a questionnaire survey in an urban population of western Nepal," *Public Health Nutrition*, vol. 10, no. 2, pp. 192–197, 2007.

[19] WHO, "Physical status, "the use and interpretation of anthropometry", Report of a WHO Expert committee," WHO Technical Report Series 854, WHO, Geneva, Switzerland, 1995.

[20] A. El-Gilany, A. El-Wehady, and M. El-Wasify, "Updating and validation of the socioeconomic status scale for health research in Egypt," *Eastern Mediterranean Health Journal*, vol. 18, no. 9, pp. 962–968, 2012.

[21] O. Galal, "Child feeding patterns in the Middle East," *Saudi Journal of Gastroenterology*, vol. 1, no. 3, pp. 138–144, 1995.

[22] J. F. Ludvigsson, "Breastfeeding intentions, patterns, and determinants in infants visiting hospitals in La Paz, Bolivia," *BMC Pediatrics*, vol. 3, article 5, 2003.

[23] M. Dashti, J. A. Scott, C. A. Edwards, and M. Al-Sughayer, “Determinants of breastfeeding initiation among mothers in Kuwait,” *International Breastfeeding Journal*, vol. 5, article 7, 2010.

[24] L. Qiu L, X. Xie, A. Lee, and C. Binns, "Infant’s first feeds in Hangzhou, PR China," *Asia Pacific Journal of Clinical Nutrition*, vol. 16, no. 1, pp. 458–461, 2007.

[25] A. El-Gilany and K. Badawy, "Breastfeeding performance index at age of 6 months in Mansoura, Egypt," *TAF Preventive Medicine Bulletin*, vol. 12, no. 3, pp. 225–230, 2013.

[26] F. El-Zanaty and A. Way, "Feeding practices and micronutrient supplementation;" in *Egypt Demographic and Health Survey 2008*, Macro International, Cairo, Egypt, 2009.

[27] *Nigeria Demographic and Health Survey 2008*, National Population Commission, Federal Republic of Nigeria, Abuja, Nigeria, ICF Macro, Calverton, Md, USA, 2009.

[28] *Philippines National Demographic and Health Survey 2008*, National Statistics Office, Manila, Philippines, ICF Macro, Calverton, Md, USA, 2009.

[29] N. M. Shembesh, N. N. M. Balo, and R. Singh, "Breast-feeding and weaning patterns in Benghazi, Libyan Arab Jamahiriya," *Eastern Mediterranean Health Journal*, vol. 3, no. 2, pp. 251–257, 1997.

[30] A. O. Ogah, A. M. Ajayi, S. Akin, and S. N. Okolo, "A cross-sectional study of prelacteal feeding practice among women attending Kampala International University Teaching Hospital Maternal and Child Health Clinic, Bushenyi, Western Uganda," *Asian Journal of Medical Sciences*, vol. 4, no. 3, pp. 79–85, 2012.

[31] V. Khanal, M. Adhikari, K. Sauer, and Y. Zhao, "Factors associated with the introduction of prelacteal feeds in Nepal: findings from the Nepal Demographic and Health Survey 2011," *International Breastfeeding Journal*, vol. 8, no. 1, 9 pages, 2013.

[32] A. S. Lakati, O. A. Makokha, C. W. Binns, and Y. Kombo, “The effect of pre-lacteal feeding on full breastfeeding in Nairobi, Kenya,” *East African Journal of Public Health*, vol. 7, no. 3, pp. 258–262, 2010.
[33] U. Senarath, M. J. Dibley, and K. E. Agho, "Breast-feeding performance index: a composite index to describe overall breast-feeding performance among infants under 6 months of age," *Public Health Nutrition*, vol. 10, no. 10, pp. 996–1004, 2007.

[34] P. Spana, H. Ameya, P. Rooma, P. Aarti, A. K. Rashed, and K. A. Narayan, "Prevalence of exclusive breastfeeding and its correlates in an urban slum in western India," *International e-Journal of Science, Medicine & Education*, vol. 3, no. 2, pp. 14–18, 2009.

[35] B. Dakshayani and M. R. Gangadhar, "Breast feeding practices among the Hakkipikiks: a tribal population of Mysore District, Karnataka," *Ethno Medicine*, vol. 2, no. 2, pp. 127–129, 2008.

[36] R. N. Kulkarni, S. Anjenaya, and R. Gujar, "Breastfeeding practices in an urban community of Kalamboli, Navi Mumbai," *Indian Journal of Community Medicine*, vol. 29, no. 4, pp. 179–180, 2004.

[37] N. Joseph, B. Unnikrishnan, V. A. Naik et al., "Infant rearing practices in South India: a longitudinal study," *Journal of Family Medicine and Primary Care*, vol. 2, no. 1, pp. 37–43, 2013.

[38] *Malawi Demographic and Health Survey 2004*, National Statistical Office, Zomba, Malawi, ORC Macro, Calverton, Md, USA, 2005.

[39] B. Prasad and L. A. M. De Costello, "Impact and sustainability of a "baby friendly" health education intervention at a district hospital in Bihar, India," *British Medical Journal*, vol. 310, article 621, 1995.

[40] M. Bandyopadhyay, "Impact of ritual pollution on lactation and breastfeeding practices in rural West Bengal, India," *International Breastfeeding Journal*, vol. 4, article 2, 2009.

[41] S. K. Rania, V. Mengi, and G. Singh, "Determinants of prelacteal feeding among infants of RS Pura block of Jammu and Kashmir, India," *Journal of Family Medicine and Primary Care*, vol. 1, no. 1, pp. 27–29, 2012.

[42] S. Tarannum and S. M. Z. Hyder, "Prelacteal feeding practices in a rural area of Bangladesh," Working Paper No. 27BRAC-ICDDR, B Joint Research Project, Dhaka, Bangladesh, 1998.

[43] M. M. E. Al Ghwass and D. Ahmed, "Prevalence and predictors of 6-month exclusive breastfeeding in a rural area in Egypt," *Breastfeeding Medicine*, vol. 6, no. 4, pp. 191–196, 2011.