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A Multicenter Survey for Monitoring the Baby-Friendly Initiative in 6 University Hospitals in Egypt (2017-2018): A Comparative Analysis

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Abstract

Introduction: University hospitals (UHs) face multiple challenges to achieve Baby friendly Hospital Initiative (BFHI) designation. Recently UNICEF has supported 6 UHs in Egypt to become Baby Friendly using the UNICEF/WHO BFHI monitoring tools. **Aim**: The aim of this study is to present and compare the monitoring activities that were carried out by 6 UH in Egypt for assessing BFHI after implementation. **Methods**: The six hospitals included in this study were AinShams UH (AsUH), Alexandria UH (AxUH), AlHussein (Azhar) UH (AzUH), Assiut UH (ATUH), Benha UH (BUH) and Cairo Kasr ElAini UH (KUH) using the monitoring tools of UNICEF/WHO BFHI. Four monitoring visits were conducted by each UH over the period of 3 months and involved interviews with mothers in maternity wards and NICUs, pregnant women in antenatal clinics and clinical staff in the service wards and observations. Data were collected and analyzed quantitatively into the UNICEF/WHO

BFHI summary sheets of the tools. **Results**: Interviews totaled 915. Hospitals meeting BFHI global criteria were AinShams UH for steps 2, 6, 7 and AxUH for steps 1, 2, 3 and the Code. AzUH achieved steps 1 and 8 and the Code; BUH achieved steps 2 and 8; KUH steps 6 and 7. The lowest mean score was step 4 (16.87 ± 8.67) and the highest score was step 2 (61.68 ± 23.89). AxUH had the highest score in administrative activities, while AinShams UH had the highest score for clinical protocols and AzUH had the highest score for educational activities. **Conclusions**: A monitoring tool can be effective in achieving the global criteria for the Ten steps of BFHI by identifying gaps in program implementation.

Keywords

Breastfeeding, Baby-Friendly Hospital Initiative, Monitoring, Ten Steps, University Hospitals, Accreditation, Health Promotion

1. Introduction

The UNICEF/WHO Baby Friendly Hospital Initiative (BFHI) aims at promoting, protecting and supporting breastfeeding through the Ten steps to successful breastfeeding in maternity health facilities. The BFHI started in 1991 and was updated in 2009 [1] and revised in 2018 [2]. Many studies have demonstrated how the implementation of Ten steps through BFHI have had an impact on exclusive breastfeeding practices with consequent impact on child health at hospital and national level [3] [4] [5] and national-level impact has also been noted [6] and global level [2] [7]. In Egypt many studies were done over the past 3 decades to assess baseline indicators for BFHI and monitoring progress towards achieving BFHI status [8] [9] [10].

The BFHI material for training and advocacy was updated and revised for clarification and further interpretation of the Ten steps, based on the emerging evidence. This included the emphasizing in "Step 1" the implementation of the code, and in "Step 4" the initiation of breastfeeding through immediate skin-to-skin contact for one hour or up to the first suckle [1]. In 2018 the BFHI material was further updated by categorizing the Ten steps into critical management procedures and key clinical practices. The former highlighted emphasis on the Code and relevant resolutions and the need to establish ongoing monitoring and data management systems. While the latter (key clinical practices) added counseling families in addition to mothers in step 3, and managing common difficulties in step 5, and guiding mothers to recognize and respond to infant feeding cue. While step 9 was adapted to counsel mothers on the use and risks of bottles and pacifiers. Accordingly the Ten steps remain in context as they were written originally but with further clarification for improving implementation [2]. Moreover special guidelines were developed for making neonatal units Baby Friendly emphasizing importance of encouraging Kangaroo mother

care, minimizing mother-infant separation and ensuring continuity of care [11]. In Egypt this has been shown very relevant to support of exclusive breastfeeding [12] [13]. Although the revised Ten steps are based on evidence based guidelines, they may need to be tested in different settings for feasibility, acceptance and impact.

Labbok [14] assessed the global status of BFHI and reported that 21,328 ever-designated facilities from 70 countries (2010-2011). This is 27.5% of maternities worldwide: 8.5% in industrialized countries and 31% in less developed countries. UNICEF presented a compendium of case studies from 13 countries on their experiences with BFHI and recommended that conducting ongoing monitoring of the quality of care among other recommendations for updating global guidance in BFHI [14]. An assessment for BFHI in multiple hospitals showed that there was consistent lack of breastfeeding records and statistics for regular monitoring [15]. Hence it is important to ensure that data obtained from monitoring of BFHI is regularly recorded, interpreted and taken into action when change is considered.

In Egypt, exclusive breastfeeding rates have shown to be consistently low over the past decades [16]. BFHI had made 126 hospitals designated as Baby-friendly in 1996; however with the lack of reassessments the hospitals lost their designation. Over the past decade there have been several attempts to revive the BFHI using the updated BFHI tools. Several studies to test the monitoring tools have been used to monitor and improve implementation in Egyptian hospitals [4]. University hospitals (UH) are the most challenging facilities to make Baby friendly. Recently in 2016 UNICEF has supported 6 UH in Egypt to become Baby-friendly using the updated Monitoring tools of Section IV of the BFHI 2009 [1].

Aim: The aim of this study to present and compare the monitoring activities that were carried out by 6 UH in Egypt for preparing them to achieve BFHI status and use the results to develop national criteria for monitoring university hospitals (UH) with maternity services.

2. Methods

We conducted preliminary meetings with all the monitoring teams from each of the six hospitals: Ain Shams UH, Alexandria UH, AlHussein UH, Assiut UH, Benha UH and Cairo UH (Kasr ElAini). The monitoring teams were led by the community medicine departments of the faculty of medicine in each UH in collaboration with the pediatric and obstetric departments assisted by the relevant departments in faculty of nursing. The teams were trained in the use of the monitoring tools. The first monitoring was carried out after the completion of training of most of the staff in the maternity and Neonatal intensive units (NICU). The monitoring tools of UNICEF/WHO BFHI were adapted and translated into Arabic version and tested. Adaptation involved removal of the HIV and non-breastfeeding mothers and inclusion of interview sheets for clinical staff from the faculty and residency programs in the UH for monitoring integra-

tion of BFHI into the curriculum. Four monitoring visits were required to be conducted by each UH over the period of 3 months. The monitoring involved interviews with mothers in maternity wards and NICUs, pregnant women in antenatal clinics and clinical staff with observations and review of training and educational material. Each monitoring cycle lasted for two days and was followed up by a feed-back visit to the UH. Data was collected and analyzed using the summary sheets of the UNICEF/WHO BFHI tools after adaptation. Each step was assigned scores based on the global criteria for the Ten steps and the Code. The final results were presented in a final workshop meeting with all the 6 UH to discuss outcome and develop national criteria for monitoring and assessing UH in Egypt.

3. Results

Table 1 lists the number of interviews conducted for clinical staff , pregnant women, breastfeeding mothers and babies observed in the monitoring cycles by university hospital. Clinical staff ranged from 18 to 72 with a total of 266. Pregnant women interviewed ranged from 14 to 90 with a total of 258 women. Breastfeeding mothers at delivery ranged from 30 to 102 with a total of 391 mothers. Babies observed in perinatal areas ranged from 28 to 64 with a total of 204 babies. Total interviews conducted in the multicenter study were 915.

Table 2 compares the mean scores for each of the Ten steps of the BFHI and the Code by university hospital. The mean score for Step 1 ranged from 13.3 ± 11.54 in ATUH to 61.5 ± 20.86 in AzUH. The mean score for Step 2 ranged from 30 ± 36.05 in ATUH to 63.16 ± 12.85 in BUH. The mean score for Step 3 ranged from 0.0 in KUH and AsUH to 83.5 ± 12.47 in AxUH. The mean score for Step 4 ranged from 5.27 ± 6.41 in AxUH to 29.75 ± 14.7 in AsUH. The mean score for Step 5 ranged from 14.33 ± 8.14 in ATUH to 68.82 ± 5.42 in AzUH. The mean score for Step 6 ranged from 10.825 ± 9.68 in AxUH to 85.5 ± 3.18 in KUH. The mean score for Step 7 ranged from 12.5 ± 8.66 in ATUH to 75.5 ± 21.7 in AsUH. The mean score for Step 8 ranged from 13.2 ± 13.3 in ATUH to 73.33 ± 6.65 in BUH. The mean score for Step 9 ranged from 11.47 ± 8.82 in AxUH to 53.75 ± 18.8 in AsUH. The mean score for Step 10 ranged from 0 in BUH to 61.07 ± 10.69 in AzUH. The mean score for The Code ranged from 24.66 ± 25 in ATUH to 74.25 ± 4.94 in AzUH.

Table 3 compares the final scores achieved for each of the Ten steps of the BFHI and the Code by university hospital. Hospitals that fulfilled the global criteria for each of the Ten steps of 75 or more were as follows: AsUH achieved 3 out of 10 (steps 2, 6, 7) and the Code; AxUH achieved 3 out of 10 (steps 1, 2, 3) and the Code; AzUH achieved 2 out of 10 (steps 1, 8) and the Code; ATUH did not achieve any of the global criteria for the Ten steps or the Code. BUH achieved 2 out of 10 (steps 2, 8); KUH achieved 2 out of 10 (steps 6, 7). The lowest mean score for all the Ten steps was step 4 (16.87 ± 8.67) and the highest score was step 2 (61.68 ± 23.89) and the Code (75.34 ± 17.34).

Table 1. Number of staff and mothers interviewed in each monitoring cycle by university hospital.

University hospital*	Clinical staff interviewed**	Pregnant women interviewed	Mothers interviewed	Babies observed
Ain Shams Maternity University Hospital (ASUH) (4)	18	14	37	37
AlShatby Maternity H. (Alexandria University) (ShH-AlexU) (4)	42	90	83	28
AlHussein University Hospital (AlAzhar U) (AHUH-AzU) (4)	64	64	102	64
Assiut Women's Hospital (Assiut University) (AsUH) (3)	31	30	56	45
Benha University Hospital (BUH)	72	30	30	30
Cairo University Kasr alainy (3)	39	30	83	0
Grand Total	266	258	391	204

*University hospitals in alphabetical order. **Includes resident doctors and nurses working in maternity and neonatal intensive wards in the university hospital at the time of the monitoring.

Table 2. Comparison of the mean scores for each of the Ten steps of the BFHI and the Code by university hospital.

Universities	Ain Shams (AsUH)	Alexandria/ Shatby (AxUH)	AlHussein AlAzhar (AzUH)	Assiut (ATUH)	Benha (BUH)	KasrAlAini (KUH)
# Monitoring cycles	4	4	4	3	3	3
Steps						
			Step 1			
Range	50 - 50	0 - 89.5	49.6 - 92.7	0 - 20	20 - 22	0 - 0
Mean ± SDs	50 ± 0	61.44 ± 41.32	61.5 ± 20.86	13.33 ± 11.54	20.67 ± 1.15	0 ± 0
			Step 2			
Range	20 - 75	0 - 85	26.3 - 67.6	0 - 70	53.7 - 77.8	35 - 80
Mean ± SD	45 ± 26.77	45.85 ± 35.12	51.2 ± 18.43	30 ± 36.0551	63.16 ± 12.85	55 ± 22.91
			Step 3			
Range	0 - 0	68 - 98.4	13 - 67.1	0 - 16.6	46.7 - 50	0 - 0
Mean ± SD	0 - 0	83.47 ± 12.47	40.43 ± 30.6	5.53 ± 9.58	47.8 ± 1.90	0 ± 0
			Step 4			
Range	15 - 50	0 - 14.3	16.5 - 30.3	0 - 23	4 - 10	8.7 - 13.3
Mean ± SD	29.75 ± 14.7	5.275 ± 6.416	26.3 ± 6.60	11.53 ± 11.50	7.33 ± 3.05	10.67 ± 2.37

Continued

			Step 5			
Range	25 - 56	3.3 - 49.4	60.9 - 72.7	5 - 20	18.8 - 44.8	26.2 - 45
Mean ± SD	41 ± 13.44	26.35 ± 18.99	68.82 ± 5.42	14.33 ± 8.14	34.2 ± 13.65	35.07 ± 9.45
			Step 6			
Range	52 - 100	0 - 19	30.4 - 44.2	5 - 22.5	50 - 55	82.6 - 88.9
Mean ± SD	80.75 ± 23.54	10.825 ± 9.68	38.35 ± 5.77	15 ± 9.01	51.66 ± 2.86	85.5 ± 3.18
			Step 7			
Range	50 - 100	0 - 27.3	52.8 - 54.4	2.5 - 17.5	50 - 50	60.9 - 93
Mean ± SD	75.5 ± 21.7	12.9 ± 12.49	53.4 ± 0.692	12.5 ± 8.66	50 ± 0	72.73 ± 17.63
			Step 8			
Range	7 - 33	7 - 52.6	86.5 - 92.5	3 - 28.3	66.7 - 80	34.4 - 38.9
Mean ± SD	25 ± 12.32	33.95 ± 19.61	89.05 ± 2.50	13.2 ± 13.3	73.33 ± 6.65	36.03 ± 2.49
			Step 9			
Range	35 - 80	0 - 21.4	22.6 - 35.5	2.5 - 27.5	33.3 - 46.7	47.2 - 50
Mean ± SD	53.75 ± 18.87	11.47 ± 8.82	30.47 ± 5.53	18.33 ± 13.76	40 ± 6.7	48.4 ± 1.44
			Step 10			
Range	0 - 8	0 - 71.4	45.7 - 70.5	0 - 2.5	0 - 0	0 - 4.35
Mean ± SD	2 ± 4	26.875 ± 32.80	61.07 ± 10.69	0.83 ± 1.44	0	1.45 ± 2.51
The Code						
Range	50 - 88	0 - 100	67 - 78	0 - 50	43.9 - 66.9	62.8 - 70.75
Mean ± SD	68 ± 15.58	50 ± 57.74	74.25 ± 4.94	24.66 ± 25.00	57.26 ± 11.94	67.02 ± 4

Table 3. Comparison of the final scores achieved for each of the Ten steps of the BFHI and the Code by university hospital.

Universities	Ain Shams	Alexandria	AlHussein AlAzhar	Assiut	Benha	Cairo	Mean ± SDS
			Final score				
Step 1	50	89.5	92.7	20	22	0	45.7 ± 38.62
Step 2	75	85	62.3	20	77.8	50	61.68 ± 23.89
Step 3	0	98.4	67.1	0	50	0	35.92 ± 42.29
Step 4	25	14.3	30.3	11.6	10	10	16.87 ± 8.67
Step 5	56	49.4	71.9	20	44.8	34	46.02 ± 17.91
Step 6	100	19	39.2	17.5	50	85	51.78 ± 34.17
Step 7	100	19	53.2	17.5	50	93	55.45 ± 35.21
Step 8	27	42.9	86.5	28.3	80	38.9	50.6 ± 26.09
Step 9	50	13.2	31.4	27.5	46.7	50	36.47 ± 14.96
Step 10	0	71.4	64	2.5	0	0	22.98 ± 34.73
The Code	88	100	76.4	50	66.9	70.75	75.34 ± 17.34

Figure 1 compares the activities related to administration, clinical protocols and education for achieving Baby-friendly status in each university hospitals.

AxUH had highest score in administrative activities, while AinShams UH had the highest score for clinical protocols and AzUH had the highest score for educational activities.

Figures 2-4 are run charts for the improvements across the monitoring cycles for administration, clinical protocols and educational activities. The university hospitals that showed maximum improvement in administration activities from the first to the final monitoring cycle was shown in AxUH increasing from a score of zero to 86.5. ATUH increased from a score of zero to 35.65. AsUH increased from 35.25 to over 53.25. AzUH increased from around 47.15 to 73.85. BUH increased from a score of 30.5 to 41.7. The highest improvement was seen in AxUH followed by ATUH and the least was seen in BUH in administration related activities.

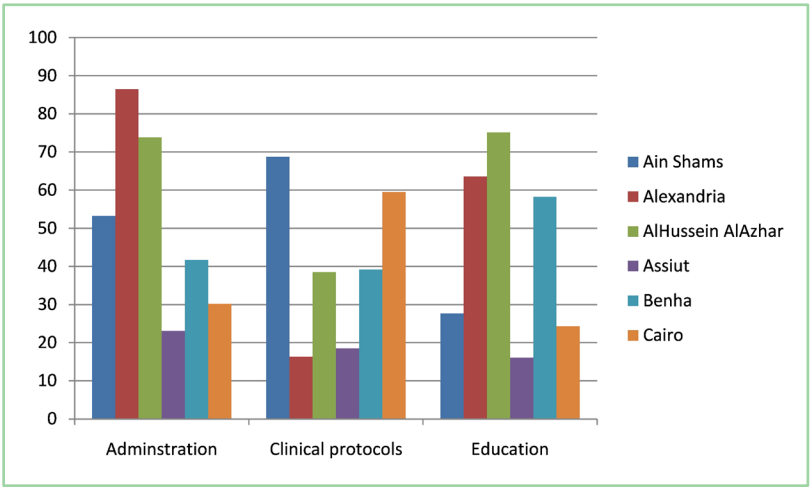

Figure 1. Comparison of the activities related to administration, clinical protocols and education for achieving Baby-friendly status in each university hospitals.

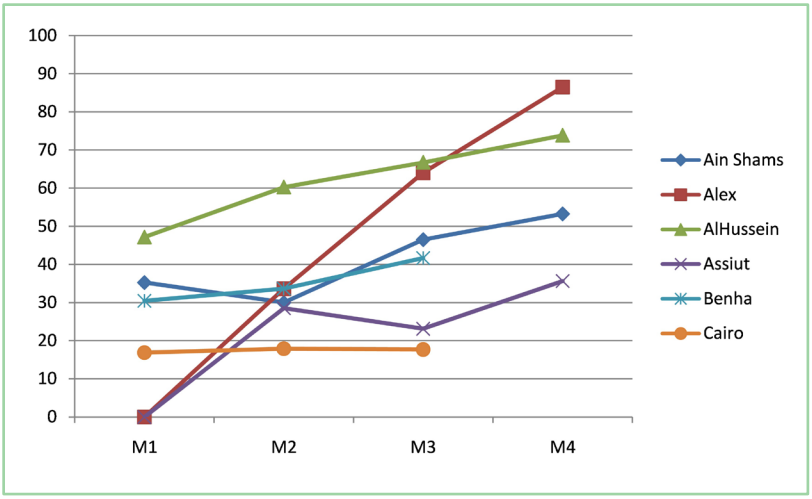

Figure 2. Comparison of the improvements in the activities related to administration (steps 1, 2, 10, Code) throughout the monitoring cycles for preparing the university hospital under study to become Baby-Friendly.

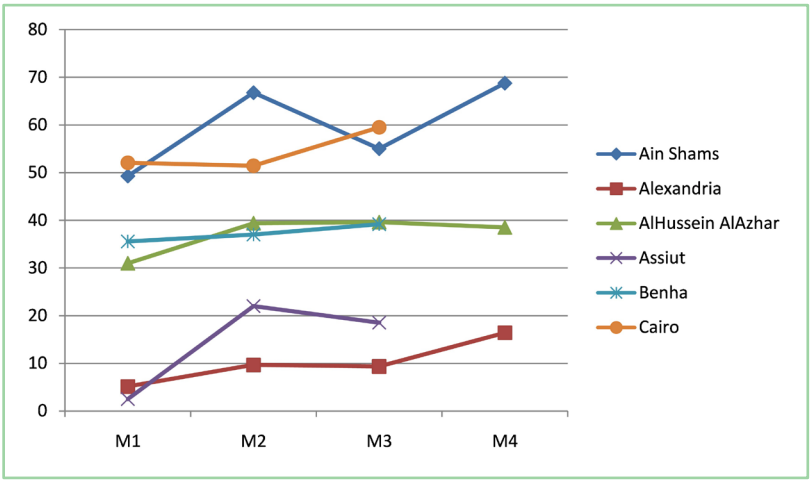

Figure 3. Comparison of the improvements in the activities related to clinical guidelines (steps 4, 6, 7, 9) throughout the monitoring cycles for preparing the university hospital under study to become Baby-Friendly.

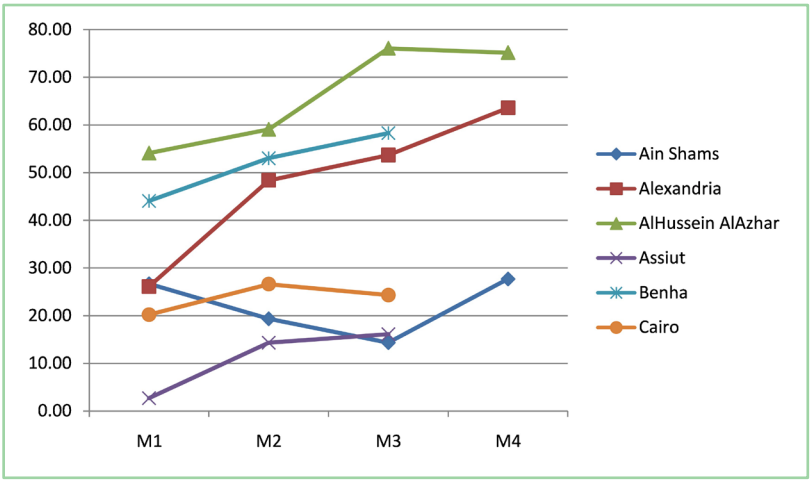

Figure 4. Improvements in the activities related to education (steps 3, 5, 8) throughout the monitoring cycles for preparing the university hospital under study to become Baby-Friendly.

Figure 3 shows that the improvements in the activities related to clinical guidelines (steps 4, 6, 7, 9) throughout the monitoring cycles. The highest improvement across the monitoring cycles occurred in Ain Shams UH rising from a score of 49.25 to 68.75 and ATUH rising from 2.5 to 18.5. The remaining hospitals showed minimal change in the score for the clinical protocols but none of universities showed declines in their scores.

Figure 4 shows the improvements in the activities related to education (steps 3, 5, 8) throughout the monitoring cycles for preparing the university hospital under study to become Baby-Friendly. AxUH showed the highest improvement rising from a score of 26.1 to 63.5 and AzUH rising from a score of 54.1 to 75.17. Other universities showed minimal improvement across the cycles but did not show any decline from the start to the end of the monitoring cycle intervention.

4. Discussion

The 22 monitoring cycles conducted in the six different universities in Upper and Lower Egypt showed diverse findings. A high percentage of the influential and permanent staff in the target wards of maternity and neonatal units were exposed to some training before the implementation of the monitoring and in-between the monitoring cycles. However the response to the training varied from one hospital to the other and from one monitoring cycle to another. Improvement did not always reach the requirements of the global criteria indicating a high degree of resistance and the need to develop strategies in training and implementation that are tailored to the needs of each hospital. The complexity of implementation in university hospitals (UH) is that these hospitals carry the dual role of teaching and providing services. They have a high rate of turnover of staff because of the continuous training of students and residents. Although there is diversification between the teaching and service delivery practices, yet they are both interlinked. Moreover, Baby-friendly criteria for UHs have not been developed by UNICEF and WHO, which pose more difficulty in the interpretation of the findings. However Baby friendly as a program needs to be integrated into the teaching curriculum in order to ensure sustainability. In 2008, Utah University hospital was the first hospital to become Baby-Friendly in Utah and the 73rd in the USA [17]. In the Eastern Mediterranean region the Jordan University Hospital launched the BFHI [18].

The overall mean score, for the 6 universities under study, was highest for the Code (75.34 ± 17.34) followed by step 2 (61.68 ± 23.89), while the lowest mean score was for step 4 (16.87 ± 8.67). Also the mean scores for most of the steps by university hospital did not achieve the requirements for the global criteria for the BFHI except for step 3 that achieved a mean score of 83.5 ± 12.47 in AxUH and step 6 which achieved a score of 85.5 ± 3.18 in KUH. The lowest mean scores were noted in steps "4" which was highest in AsUH (29.75 ± 14.7). This indicates that the highest challenge facing hospitals is: the early initiation at the breast and, immediate placement of newborn skin-to-skin with the mother for one hour or up to the first suckle. This is a very important step in order to achieve BFHI status. Several other studies have shown that this was one of their main challenges and barriers to achieving the BFHI status. Administrative, cultural and traditional practices interfere. Other studies in Egypt have shown that supplemental feeding of neonates in maternity hospitals and lack of immediate skin to skin were one of the biggest challenges facing Egyptian safe delivery breastfeeding practices [19] [20]. This may be attributed to traditional beliefs in the community [21]. Hence any Baby Friendly initiative intervention must go hand in hand with community-based breastfeeding promotion.

The final scores achieved for each of the Ten steps of the BFHI and the Code by each UH showed that monitoring motivated staff to improve their practices since the highest improvement was for step 2 (61.68 ± 23.89) and the Code (75.34 ± 17.34). However the lowest mean score for all the Ten steps was step 4 (16.87 ± 8.67). This indicates that this practice probably requires special training

using problem solving workshops with the teams working in the labor wards. A study of primiparous women showed that continuous mother infant skin-to-skin contact at birth can improve self-efficacy [22]. Delayed breastfeeding initation has deleterious effects of on child survival and breastfeeding continuity [23]. Hence, in order to improve the outcome of first hour skinn to skin contact, process mapping of skin-to-skin practice [24] in the first hour after birth using the algorithms, can provide a guide for analysis and opportunities for improvement with targeted interventions for guiding staff in implementing this procedure for improving child survival and breastfeeding outcome. In Egypt a study showed that implementing Mother-Friendly practices can greatly improve the outcome on implementing the Ten steps and discharge rates of exclusive breastfeeding [25]. Early Breastfeeding practices continue to be challenged in Upper Egypt [26] [27] [28].

Our findings showed that efforts should be made to work individually with the staff who are involved in administration to make the necessary changes for facilitating Baby-Friendly practices. Likewise clinical guidelines and protocols should be developed by each of the pediatrics and obstetric departments separately to integrate breastfeeding management in their clinical guidelines for management of their cases. All the UHs showed improvement across the monitoring cycles in administration, with varying improvement rates, indicating that high resistance may still be present in the administrative needs for making these hospitals Baby-Friendly. UNICEF supported by Wellstart International have developed section 2 of the BFHI material which targets administrative staff and decision makers. This was translated into Arabic by WHO. However this module is poorly implemented and needs to be more widely used especially in the Arabic version.

Improvements in the activities related to clinical guidelines (steps 4, 6, 7, 9) throughout the monitoring cycles was highest improvement in two UHs, but none of universities showed declines in their scores. The WHO has recently developed updated guidelines in the Baby-Friendly which focus on clinical guidelines especially in neonatal units [27]. The guidelines were updated in 2018 again to clarify the guideline concerning the use of pacifiers in the NICU units and educational needs to promote education about the hazards of their use after discharge from the hospital [21].

Improvements in the activities related to education (steps 3, 5, 8) throughout the monitoring cycles face many challenges and was highest in one hospital and minimal improvement in other UHs indicating that there is a need to work on improving the steps related to education, especially related to educating and preparing pregnant women to the immediate practices for initiation of breastfeeding. Also educating mothers about the importance of to the cue feeding and how to latch baby to breast, the different positions for breastfeeding and positing baby at the breast and especially expressing and feeding expressed breast milk by cup and not be bottle especially for preterm babies and newborns when admitted to NICU. Studies that surveyed baseline BFHI practices across the past two dec-

ades have shown that education has always been a defective practice in maternity and neonatal wards. The main reason was attributed to work load and rapid turnover of staff as well as short stay of mothers on normal deliveries (less than 6 hours) and admission of babies to NICU who are not visited frequently by mothers. Mothers usually come in the evening when visiting hours are allowed, when less staff are working and thereby are unable to provide time for educating the mothers at this time. Assigning staff who are dedicated to education has shown some success in some of the hospitals who implemented this intervention. However the administrative and human resource structural systems in curative facilities do not allow for hiring staff for this purpose, although there is an overload of nursing and auxiliary staff who can be recruited for this purpose. Abul-Fadl *et al.*, [29] studied the barriers to making hospitals Baby Friendly in Egypt in 23 hospitals. They showed that staff attitude, lack of training and poor administrative commitment were the main underlying factors to poor implementation of the Ten Steps to Baby Friendly. These findings were confirmed by a study for assessing effective educational strategies for implementing BFHI in Egyptian hospitals [30] and another study for assessing compliance of health providers in maternity hospitals in Alexandria to the Ten Steps [19] [31] and in Upper Egypt where there is more resistance by staff to commit to education [32] [33]. Global studies have shown that promoting breastfeeding in maternity services through BFHI practices can increase exclusive breastfeeding duration especially in the first three months of life [34]. This can have short term mortality from communicable disease [35] [36] and long term effects on the health outcome of mothers and children and reduce the rising burden of death from non-communicable disease [37]. Enforcing Baby-friendly policies inside hospitals was shown to ensure sustainability [38].

However feeding babies on prelacteals is still a major concern in the EMR and especially in the gulf region [39] and also in rural Egypt [40]. Studies conducted for neonates delivered in Alexandria [41], Kasr ElAini [42] and Mansoura University hospitals [43] showed that feeding newborns prelacteals other than breastmilk can reduce continuity at one month. Hence, improving breastfeeding practices in maternity services remain a challenge in our hospitals. University hospitals can take the lead in changing these practices by integration of the updated revised Ten steps of BFHI in the under and postgraduate programs, emphasizing the benefits and evidence supporting the Ten steps in clinical practice [44] [45].

5. Conclusion and Recommendation

The use of a monitoring tool can be effective in motivating change towards achieving the global criteria for the Ten steps of BFHI. However its use is limited to hospitals with already ongoing training to measure progress and direct activities towards the gaps in program implementation.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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