



Research Article

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Breastfeeding Assessment; Preliminary Report on a New Scoring System as an Assessment Tool: The Eregie BREAST Score (EBS)

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Abstract

Breastfeeding is a Child Survival Intervention (CSI). Several factors affecting breastfeeding guarantee the benefits of this feeding intervention to the Mother-Baby Dyad. One such factor is the Skill and Technique of Breastfeeding. Breastfeeding Assessment Tools assure improvements in Breastfeeding Practices by focusing attention on deficient Breastfeeding Assessment Domains. Several Breastfeeding Assessment Tools are briefly distilled. The LATCH Score is highlighted for its objective Scoring System, but it is deficient in its Breastfeeding Assessment Domains Coverage. The WHO/ UNICEF B-R-E-A-S-T-Feed Observation Form is reportedly the Tool with the strongest evidence but lacks an objective Scoring System. Using the 'B-R-E-A-S-T' of the WHO/ UNICEF Form as a Template and Precursor, and with the developed 'Defined and Scored Alternatives', a New Scoring System is presented as a Breastfeeding Assessment Tool: The Eregie BREAST Score (EBS).

Keywords: Breastfeeding, Breastfeeding Assessment, Breastfeeding Assessment Domains, Breastfeeding Assessment Tool, Child Survival Intervention, Eregie BREAST Score, LATCH Score

Abbreviations: BAS: Breastfeeding Assessment Score; BEET: Breastfeeding Evaluation and Education Tool; BFHI: Baby-Friendly Hospital Initiative; CSI: Child Survival Interventions; EBF: Exclusive Breastfeeding; EBS: Eregie BREAST Score; IBFAT: Infant Breastfeeding Assessment Tool; NOMAS: Neonatal Oral-Motor Assessment Scale; OIYCF: Optimal Infant and Young Child Feeding; SAIB: Systematic Assessment of the Infant at Breast

Introduction

Breastfeeding, particularly Exclusive Breastfeeding (EBF), is a low-cost high-impact Child Survival Intervention (CSI) and has also been described as the 'Mother of all Child Survival Interventions' [1-3]. It is an integral component of Reproductive Work [4-6]. Breastfeeding is also an integral component of the Optimal Infant and Young Child Feeding (OIYCF) recommended by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) [7,8]. The benefits and advantages of breastfeeding as they relate to the mother and the child are influenced by the plethora of factors affecting this feeding intervention. The Skill and

Technique of breastfeeding are particularly important in assuring the benefits accrue to the Mother-Baby Dyad. In a 'Triple-A Process' [9], Assessment is the first step followed by Analysis and Action in that order. Thus, Breastfeeding Assessment are a necessary first step in assuring the benefits of Breastfeeding is guaranteed to the 'Mother-Baby Dyad'. There are several Breastfeeding Assessment Tools which have been developed to assist mothers to improve their Breastfeeding Practices guided by the outcomes of their Breastfeeding Assessments. This Communication highlights some issues related to the extant Breastfeeding Assessment Tools and



disposes the Eregie BREAST Score (EBS) as a New Scoring System for improved Breastfeeding Assessment.

Breastfeeding Assessment Domains and Breastfeeding Assessment Tools

It is expected that appropriate and useful Breastfeeding Assessment Tools should cover the relevant determinant 'Breastfeeding Assessment Domains' [10] which reportedly include Baby's behavior, Mother's behavior, Position, Latching, Effective feeding, Breast health, Baby's health, Mother's view of feed, Number, timing and length of feeds. Other 'Breastfeeding Domains' have been added and include among others: Mother's comfort level, Previous breastfeeding experience, Other foods being offered to the child, Loss of more than 10% of birth weight, Delivery type etc [11-13]. The Breastfeeding Assessment Tools differ in their Form and Structure being Checklists, Questionnaires, Algorithms, Indices, History-taking Forms, Listing specific aspects of breastfeeding to be assessed etc [10]. Some Breastfeeding Assessment Tools include among several others: Breastfeeding Assessment Score (BAS) [14], Breastfeeding Evaluation and Education Tool (BEET) [15], Infant Breastfeeding Assessment Tool (IBFAT) [16], LATCH Score [17], Neonatal Oral-Motor Assessment Scale (NOMAS)[18], Systematic Assessment of the Infant at Breast (SAIB) [19], WHO/ UNICEF B-R-E-A-S-T-Feed Observation Form [20], WHO/UNICEF BFHI Forms [21,22], CARE Training Packages [23] etc. Some Tools have National Applicability while others have Worldwide Applicability. Also, some Tools are applicable to Hospital Settings while others are useful in the Community. Yet again, some Tools have relevance in High-income Economies while others are useful in Low-and Medium-income Economies. Some Tools uniquely have applicability re: Hospital and Community, High-and Low-and Medium-income Countries and National and Worldwide [10]. Concerning 'Breastfeeding Domains Coverage', the most comprehensive Breastfeeding Assessment Tool is reportedly the Breastfeeding Evaluation and Education Tool (BEET) [10,15]. The WHO/ UNICEF Baby-Friendly Hospital Initiative Tools and the CARE Training Packages also have reasonable coverage [10,21-23]. Several Tools do not report predicted 'Breastfeeding Outcomes': Breastfeeding Status, Child Growth, Maternal and Child Health, Tool Performance etc [10]. The BEET has reportedly not been part of independently documented Validation Studies [10]. The LATCH Score [17] is attractive as it objectivizes the Breastfeeding Assessment by disposing 'Defined and Scored Alternatives' and hence can identify specific areas and 'Breastfeeding Domains' requiring attention and further interventions. The LATCH Score, however, lacks coverage of certain Breastfeeding Domains [10]. The Breastfeeding Assessment Tool reportedly with the strongest evidence is the WHO/ UNICEF B-R-E-A-S-T-Feed Observation Form [10,20], and it is applicable worldwide, in the hospital and community as well as in both High-and Low-income Countries [10]. It, however, lacks coverage of Baby's health and Mother's view of the feed in the 'Breastfeeding Assessment Domains'. Additionally, it lacks the 'Defined and Scored Alternatives' of a 'Scoring System' to objectivize Breastfeeding Assessment using the WHO/ UNICEF B-R-E-A-S-T-Feed Observation Form as with the LATCH Score. This is the relevance of the current Communication conveying the Pre-

liminary Report on a New Scoring System for Breastfeeding Assessment: The Eregie BREAST Score (EBS).

A New Breastfeeding Assessment Scoring System: The Eregie BREAST Score (EBS)

Latching on the unique advantage of the LATCH Score as an 'Objectivizing Scoring System' for Breastfeeding Assessment, the WHO/ UNICEF B-R-E-A-S-T-Feed Observation Form [20] was transformed and developed to create a Quantitative Scoring System from the original Qualitative Format guided by Critical Literature Review, Longstanding Experience/ Expertise in Clinical Practice and Research and Programmatic Involvement/ Engagements in National and International Breastfeeding Initiatives. This is Non-Clinical Tool Development in Research Governance and Principles. With the Eregie BREAST Score (EBS), and the developed 'Defined and Scored Alternatives', Assessment is now objectivized using the Breastfeeding Assessment Tool with the strongest evidence as the Template and Precursor with more objective and better identification of specific 'Breastfeeding Domains' that require attention and further intervention to improve a mother's breastfeeding practice towards optimizing the harvest of the benefits and advantages of the Child Survival Interventions: Breastfeeding, Exclusive Breastfeeding and Optimal Infant and Young Child Feeding (OIYCF).

The details of the Eregie BREAST Score (EBS) are listed in Tables 1 and 2. Table 1 disposes the 'B-R-E-A-S-T' with Defined and Scored Alternatives for concluding that 'Breastfeeding is going on well' and 'Good' or 'Breastfeeding difficulty is encountered' and 'Poor'. Using the conclusions of 'Good' and 'Poor' as applicable to the mother and her baby and guided by the 'Defined and Scored Alternatives' disposed in Table 2, 'Scores' are assigned to each component of the 'B-R-E-A-S-T' to get a 'Cumulative Score' which is the 'Eregie BREAST Score (EBS)' for objectivizing Breastfeeding Assessment. The LATCH Score virtually follows the format and structure of the APGAR Scoring System [24] and the Eregie BREAST Score similarly aligns with the APGAR and LATCH Scores Models. The Eregie BREAST Score (EBS) has all the advantages of the WHO/ UNICEF B-R-E-A-S-T-Feed Observation Form (Worldwide Applicability, Hospital and Community Usefulness and relevant in High-and Low-and Medium-income Countries) in addition to being an objective 'Scoring System' and quite 'User-Friendly'.

Conclusion

Breastfeeding Practices are some of the factors assuring Breastfeeding Benefits to mothers and their children. Appropriate Breastfeeding Assessments facilitate better Breastfeeding Practices by attending to identified deficient 'Breastfeeding Assessment Domains'. This Communication briefly distils and appraises Breastfeeding Assessment Tools as Interventions to assuring better Breastfeeding Practices. The WHO/ UNICEF B-R-E-A-S-T-Feed Observation Form is reportedly the Tool with the strongest evidence but lacks an 'Objective Scoring System'. The Eregie BREAST Score (EBS), using the WHO/ UNICEF Tool as a Template and Precursor, is presented as a New Scoring System for Breastfeeding Assessment in his Preliminary Report.

Table 1: Breastfeeding Assessment Tool (Eregie Breast Score (EBS)): Definitions of Good or Poor For B-R-E-A-S-T Components.

DOMAIN	BREASTFEEDING GOING ON WELL	POSSIBLE DIFFICULTY	GOOD OR POOR
B (BODY POSITION)	<p>MOTHER</p> <ol style="list-style-type: none"> 1. Mother sitting upright and back is straight 2. Mother relaxed and comfortable 3. Mother brings up baby to the breast <p>BABY</p> <ol style="list-style-type: none"> 1. Baby's body close to mother, facing breast 2. Baby's head and body straight 3. Baby's chin touching breast 4. Baby's bottom supported (If newborn) 	<p>MOTHER</p> <ol style="list-style-type: none"> 1. Mother bends forward and leans over baby 2. Mother tense and anxious 3. Mother takes breast down to baby <p>BABY</p> <ol style="list-style-type: none"> 1. Baby's body away from mother's 2. Baby's neck twisted 3. Baby's chin not touching breast 4. Only shoulder or head supported (If newborn) 	
R (RESPONSES)	<p>MOTHER</p> <ol style="list-style-type: none"> 1. Signs of milk ejection <ol style="list-style-type: none"> i. Leaking ii. Breastmilk stream if baby slips off the breast iii. Leaking if mother thinks of baby or hears the cry iv. Tingling sensation in breast during breastfeeding or when cry heard v. Afterpains <p>BABY</p> <ol style="list-style-type: none"> 1. Baby reaches for breast if hungry 2. Baby roots for breast (If newborn) 3. Baby explores breast with tongue 4. Baby calm and alert at breast 5. Baby stays attached to breast 	<p>MOTHER</p> <ol style="list-style-type: none"> 1. No signs of milk ejection <ol style="list-style-type: none"> i. No Leaking ii. No Breastmilk stream if baby slips off the breast iii. No Leaking if mother thinks of baby or hears the cry iv. No Tingling sensation in breast during breastfeeding or when cry heard v. No Afterpains <p>BABY</p> <ol style="list-style-type: none"> 1. No response to breast 2. No rooting observed (If newborn) 3. Baby not interested in breast 4. Baby restless or crying 5. Baby slips off breast 	
E (EMOTIONAL BONDING)	<p>MOTHER</p> <ol style="list-style-type: none"> 1. Secure, Confident hold 2. Face-to-face attention from mother 3. Much touching by mother 4. Shaking or poking baby <p>BABY</p> <ol style="list-style-type: none"> 1. Face-to-face attention from baby 2. Baby-mother eye contact 3. Touching mother gestures by baby 	<p>MOTHER</p> <ol style="list-style-type: none"> 1. Nervous or limp hold 2. No mother-baby eye contact 3. Little touching or 4. Shaking or poking baby <p>BABY</p> <ol style="list-style-type: none"> 1. No face-to-face attention from baby 2. No baby-mother eye contact 3. No touching mother gestures by baby 	
A (ANATOMY)	<p>MOTHER</p> <ol style="list-style-type: none"> 1. Breasts soft after feed 2. Nipples stand out, protractile 3. Skin appears healthy 4. Breast looks round during feed 	<p>MOTHER</p> <ol style="list-style-type: none"> 1. Breasts engorged 2. Nipples flat or inverted 3. Fissures or redness of skin 4. Breast looks stretched or pulled 	

S (SUCKLING)	BABY 1. Mouth wide open 2. Lower lip turned outwards 3. Tongue cupped around breast 4. Cheeks round 5. More areola above baby's mouth 6. Slow deep sucks, bursts with pauses 7. Can see or hear swallowing	BABY 1. Mouth not wide open, points forward 2. Lower lip turned in 3. Baby's tongue not seen 4. Cheeks tense or pulled in 5. More areola below baby's mouth 6. Rapid sucks only 7. Can hear smacking or clicking	
T (TIME SPENT SUCKLING)	1. Baby releases breast 2. Baby suckled for more than 10 minutes on each breast 3. Baby suckled for more than 20 minutes total duration	1. Mother takes baby off breast 2. Baby suckled for less than 5 minutes on each breast 3. Baby suckled for less than 10 minutes total duration	

Note*: LEGEND/ KEY

For Body Position, Responses and Emotional Bonding (Mother and Baby):

Mother: Good if 50% or more of signs that breastfeeding is going on well are present; Poor if more than 50% of signs of possible difficulty are present

Baby: Good if 50% or more of signs that breastfeeding is going on well are present; Poor if more than 50% of signs of possible difficulty are present

For Anatomy (Mother only) and Suckling (Baby only):

Good if more than 50% signs that breastfeeding is going on well are present; Poor if more than 50% signs of possible difficulty are present

For Time Spent Suckling:

As indicated in the Chart

Adapted from Breastfeeding Counselling, A Training Course: Participants' Manual (Part One: Sessions 1-9). WHO/ UNICEF. WHO/ CDR/ 93.5 UNICEF/NUT/93.3; 1993 and Ref 20.

Table 2: New Breastfeeding Assessment Tool: Eregie Breast Score (EBS).

SCORE				
DOMAIN	0	1	2	ASSIGNED SCORE
B (BODY POSITION)	Mother and Baby Poor	Only Mother or Baby Good	Both Mother and Baby Good	
R (RESPONSES)	Mother and Baby Poor	Only Mother or Baby Good	Both Mother and Baby Good	
E (EMOTIONAL BONDING)	Mother and Baby Poor	Only Mother or Baby Good	Both Mother and Baby Good	
A (ANATOMY)	Poor	Good		
S (SUCKLING)	Poor	Good		
T (TIME SPENT SUCKLING)	Less than 5 minutes on each breast or less than 10 minutes total breastfeeding duration and Mother may take baby off the breast	5 to 10 minutes on each breast or 10 to 20 minutes total breastfeeding duration and Mother may take baby off breast or Baby may release breast	More than 10 minutes on each breast or more than 20 minutes total breastfeeding duration and Baby may release breast	
TOTAL SCORE (Maximum 10)				

Note*: LEGEND/ KEY

TOTAL Eregie BREAST Score (EBS) :

0 - 3 is Poor; Much Intervention and Help needed

4 - 6 is Fair; Moderate Intervention and Help needed

≥ 7 is Good; Little or no Intervention or Help needed

Adapted from Breastfeeding Counselling, A Training Course: Participants' Manual (Part One: Sessions 1-9). WHO/ UNICEF. WHO/ CDR/ 93.5 UNICEF/NUT/93.3; 1993 and Ref 20.

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